GRELL & ENCR

2025 Scientific Meeting
Porto, Portugal

27-30
MAY

GRELL

ENCR
European Network
of Cancer Registries

Content

07. Sponsors

01.

Welcome

Messages from the Organization

Dear colleagues,

On behalf of the Organising Committee, we would like to welcome all participants to the 49th GRELL Meeting that for the first time counts with ENCR partnership. The objectives of this Congress are ambitious. Over the next few days, around 60 presenters will bring the best and most up-to-date research in epidemiology and cancer registration.

Exactly s years have passed since our last meeting in Porto, for the 37th GRELL Meeting. Since then, significant advances have been made to understand cancer risk factors, early detection, treatment and prevention of cancer and new technologies were developed. It is our duty as professionals to take advantage of this moment to share knowledge, experiences and improvements in the field of epidemiology and scientific research and to seek more effective solutions to cancer control. This congress represents a unique opportunity to bring together specialists, health professionals and researchers to discuss the challenges and achievements in the fight against this disease that affects millions of people around the world.

We are honoured to welcome you all at “our home” and we have high expectations on the success of this meeting. We would also like to thank each and every one of you for your presence, because it is thanks to you that this scientific journey is possible. Let´s make it a memorable meeting!

Maria José Bento

Maria José Bento
Organizing Committee

Dear friends,

It our pleasure to welcome you to the **First Joint Conference of the Group for Cancer Epidemiology and Registration in Latin Language Countries (GRELL)** and the **European Network of Cancer Registries (ENCR)**, held in the vibrant city of Porto, Portugal.

This event marks a significant milestone in international collaboration—bringing together two leading networks in cancer registration and epidemiology. With participants from over 30 countries, we unite around a shared language – data, science and public health- working together to improve cancer surveillance and to support evidence-based cancer control.

Hosted by the **Comprehensive Cancer Centre of Porto**, the conference highlights the powerful connection between **clinical practice** and **registry data**. Cancer registries help guide prevention, evaluate care and support effective planning to improve patient outcomes.

The 2025 program features over 210 peer-reviewed abstracts and addresses priority topics, including the implementation of **ICD-O-4**, **timeliness** of cancer data, the **European Health Data Space**, real-world clinical applications of registries and digital transformation, emerging technologies, and **innovation** in cancer registration.

We warmly thank the **European Commission's Joint Research Centre** for its essential financial support making this event possible.

Founded in 1975, the GRELL network unites over 300 professionals from cancer registration, research, IT, clinics and public health across Latin-language countries worldwide. The GRELL promotes research, collaboration, and harmonized methods to strengthen surveillance and advance cancer knowledge.

This joint event with the ENCR reinforces our shared goal: building a more connected, innovative and impactful cancer data ecosystem and improve cancer care and prevention.

Thank you to all speakers, authors, reviewers, sponsors, and participants.

Whether attending in Porto or online, we wish you an inspiring, collaborative, and forward-looking conference.

With kind regards,

On the behalf of the GRELL,

Claudine Backes
President of the GRELL
Steering committee member of the ENCR
Representative of Luxembourg

Dear colleagues,

The European Commission's Joint Research Centre (JRC) welcomes you to the GRELL–ENCR 2025 Conference in Porto, supporting collaboration between European and Latin-language cancer registries. Through our collaboration with the ENCR and the development and maintenance of the European Cancer Information System (ECIS), we promote high-quality, harmonised cancer data across Europe to inform cancer policies and monitor the burden of cancer. This conference is an opportunity to share knowledge, explore innovations in registration—including AI and IT tools—and strengthen the resilience of cancer surveillance systems.

We are especially pleased to provide financial support for this event, reflecting the importance we place in fostering a strong, interconnected cancer data community. We look forward to meaningful exchanges and continued progress in cancer data excellence.

Manola Bettio
JRC

Dear colleagues,

The European Network of Cancer Registries (ENCR) is a network of close to 150 cancer registries working together to enhance the quality and comparability of cancer data across Europe. By collecting, analysing, and sharing data, these registries allow us to track incidence and mortality trends, formulate hypotheses for risk factors, and measure the impact of prevention, screening, early diagnosis and treatment efforts.

Cancer registries are the backbone of informed policymaking, and their role in shaping national and European cancer strategies cannot be overstated. They help us see where we are making progress and where we are falling behind. They also provide invaluable insights that guide investment in research, early detection and screening programs as well as in innovative treatments. This work is crucial in the quest to beat cancer.

The ENCR facilitates collaboration and coordination among its member registries, promoting standardization, quality control, and innovation in cancer registration and provides a platform for sharing best practices and addressing common challenges. The ENCR and the European Commission Joint Research Centre collaborate closely in providing access to comprehensive, comparable and up-to-date cancer data for Europe, through the European Cancer Information System (ECIS), thus allowing us to understand the burden of cancer in Europe.

By working together, the ENCR and its member registries are committed to strengthening cancer surveillance, monitoring, and research, ultimately contributing to better cancer outcomes for all Europeans. As we gather for our bi-annual conference, this year for the first time jointly organized with GRELL, let’s enjoy the vibrant city of Porto. We look forward to sharing knowledge, experiences, and best practices, while continuing our collaborative efforts to advance cancer registration and research across Europe and beyond.

Raquel Carvalho
ENCR

02.

Committees

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Scientific Committee
Organization

Scientific Committee

Rita Calisto
GRELL & IPO PORTO

PORTUGAL

Maria José Bento
IPO PORTO

PORTUGAL

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GRELL & ENCR

LUXEMBOURG

Valérie Jooste
GRELL

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Marià Carulla
GRELL

SPAIN

Liesbet van Eycken
ENCR

BELGIUM

Gijs Geleijnse
ENCR

THE NETHERLANDS

Manola Bettio
JRC

SOON

Raquel Carvalho
JRC

SOON

Organizing Committee

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PORTUGAL

Maria José Bento
IPO PORTO

PORTUGAL

Anabela Sousa
Soon

PORTUGAL

Roxanne Garcia
Soon

PORTUGAL

Ana Filipa Gonçalves
Soon

PORTUGAL

Teresa Garcia
Soon

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Pedro Leite Silva
Soon

PORTUGAL

Ana Catarina Rodrigues
Soon

PORTUGAL

Claudine Backes
GRELL & ENCR

LUXEMBOURG

Organization & Support

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Porto.

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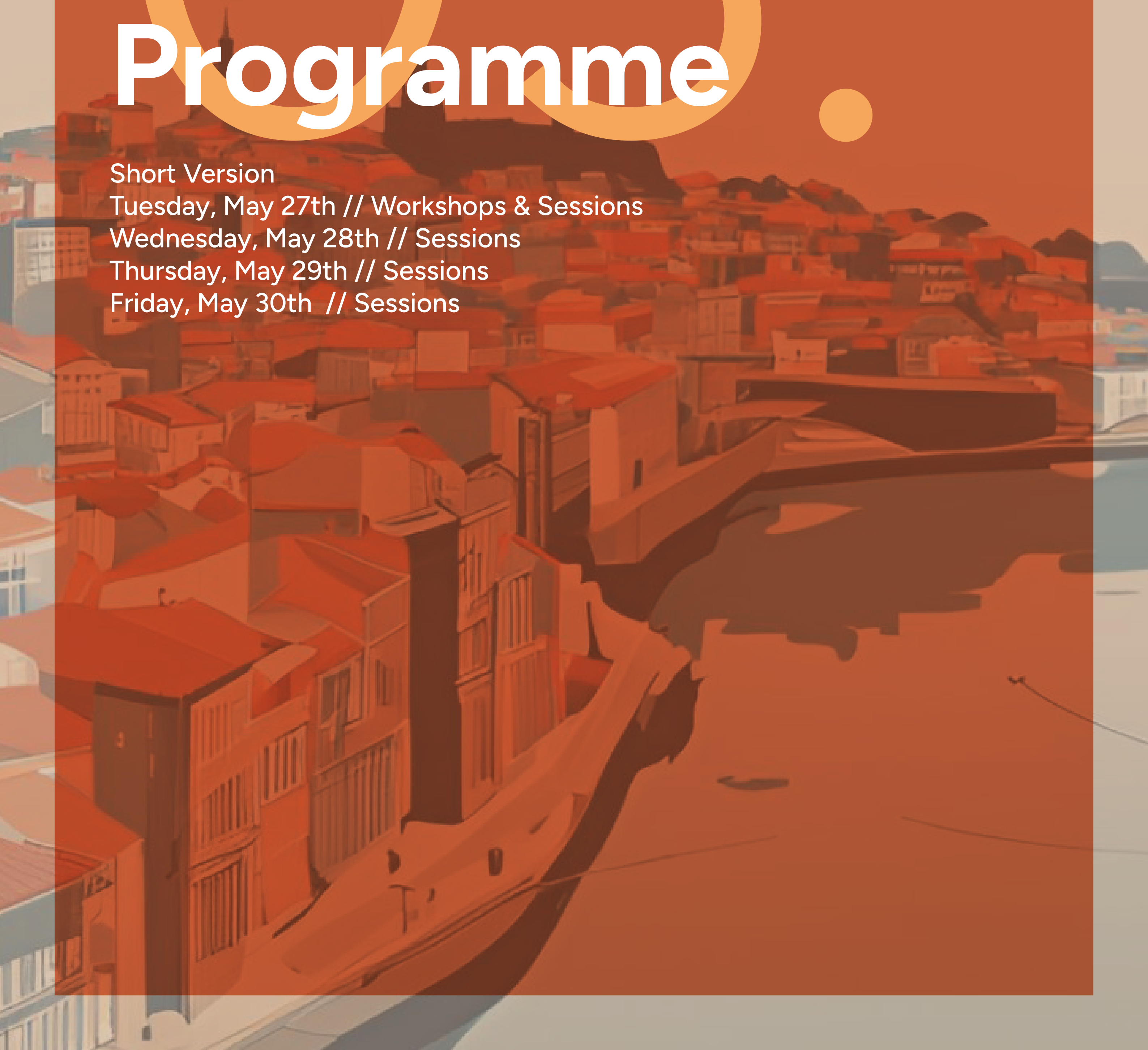
Estudos
Oncológicos

03.

Programme

Short Version
Tuesday, May 27th // Workshops & Sessions
Wednesday, May 28th // Sessions
Thursday, May 29th // Sessions
Friday, May 30th // Sessions



Tuesday, May 27th

08:30 - 10:00 **Registration**

WORKSHOP 1

ICD-O-4: towards application in population-based cancer registries

10:00 - 11:00

SESSION 1 - ICD-O-4 DEVELOPMENTS

WELCOMING WORDS

Co-moderators: **Laura Ortelli** GRELL SC representative Switzerland & **Maciej Trojanowski** ENCR SC representative Poland

KEYNOTE SPEAKER 1

ICD-O-4: development - Introduction and background, planned timelines, planned support/tools for the registries

Introduction and background, planned timelines, planned support/tools for the registries

Ariana Znaor International Agency for Research on Cancer (IARC), France

KEYNOTE SPEAKER 2

ICD-O-4: Changes compared to previous editions

Brian Rous (UK)

Q&A

11:00 - 11:30 **Coffee Break**

11:30 - 12:30

SESSION 2 – PERSPECTIVES FROM PBCRS

Co-moderators: **Laura Ortelli** GRELL SC representative Switzerland & **Maciej Trojanowski** ENCR SC representative Poland

KEYNOTE SPEAKER 3

Plans for ICD-O-4 implementation at the Irish Cancer Registry

Deirdre Murray ENCR SC representative, Ireland

KEYNOTE SPEAKER 4

Implications for coding and research at the cancer registry

Rafael Marcos-Gragera Girona Cancer Registry, Spain

Interactive Quiz

Q&A

12:30 - 13:45 **Lunch Break**

WORKSHOP 2

Is your data available for this year? Strategies to enhance timeliness at population-based cancer registries

13:45 - 14:45

SESSION 1

INTRODUCTION

Co-moderators: **Claudine Backes** GRELL SC representative Luxembourg and ENCR SC representative Luxembourg & **Valérie Jooste** GRELL SC representative France

13.45 - 14.45

KEYNOTE SPEAKER 1

Is your data available for this year? Practical aspects and techniques for addressing timeliness at the cancer registry

Freddie Bray International Agency for Research on Cancer (IARC), France

Q&A

14.45 - 15.45

SESSION 2 - REGISTRY PRACTICE

Co-moderators: **Valérie Jooste** GRELL SC representative France & **Freddie Bray** IARC, France

ORAL COMMUNICATION - WORKSHOP

Timeliness in CRs – does the extension of statistics publication time make sense?

Maciej Trojanowski Poland

Early cancer incidence estimates improve timeliness of cancer incidence reporting by one year

Harlinde De Schutter Belgium

Timeliness of childhood cancer registration in Switzerland: the impact of the cancer registration act

Yara Shoman Switzerland

Introduction of HPV screening for cervical cancer: challenges and opportunities from the cancer registry perspective

Koen Van Herck Belgium

Q&A

15:45 - 16:15 **Coffee Break & Poster Visit and Flash Talks**

16:15 - 17:15

SESSION 3 - STATISTICAL METHODS

Co-moderators: **Valérie Jooste** GRELL SC representative France & **Freddie Bray** IARC, France

KEYNOTE SPEAKER 2

Projections and detailed trend analyses of cancer incidence or mortality using multidimensional penalized splines

Zoe Uhry France

ORAL COMMUNICATION

Validity of projections of new cancer cases in Austria

Petra Ihle Austria

Methodology to estimate the incidence of cancer in Spain in the current year. A collaborative study of REDECAN

Alberto Ameijide Spain

Q&A

17:30 - 18:30 **CLOSED SESSION: HEAD OF CANCERWATCH MEETING**

Free Time

Wednesday, May 28th

08:15 - 09:00 **Registration & Posters Visit**

09:00 - 09:20 **Opening Session**

Claudine Backes GRELL President **& Liesbet van Eycken** ENCR Co-Chair **& Manola Bettio** JRC **& Maria José Bento** North Region Cancer Registry of Portugal (RORENO) Director **& Júlio Oliveira** Board President of IPO Porto

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09:20 - 10:30

SESSION 1 – THE EUROPEAN HEALTH DATA SPACE

Co-moderators: Giske Ursin ENCR SC representative Norway **& Koen Van Herck** GRELL SC representative Belgium **& Tiago Taveira-Gomes** University of Porto

KEYNOTE SPEAKER 1

The European Health Data Space (EHDS): A new era for healthcare in Europe

Anne Calteux Head of Representation at Representation of EU Commission to Luxembourg

KEYNOTE SPEAKER 2

Cancer Registries in the European Health Data Space

Hanneke A. Luth Erasmus MC, The Netherlands

Q&A

10:30 - 11:00 **Coffee Break & Poster Visit and Flash Talks**

DATA QUALITY I **ROOM 1**

Co-moderators: Marià Carulla GRELL SC representative Spain **& Maciej Trojanowski** ENCR SC representative Poland

Completeness evaluation of adult population-based cancer registries. A systematic review.

Mariana Pinto Sousa Portugal

Correcting uterine cancer mortality in Estonia using linkage of cancer registry data

Kaire Innos Estonia

SURVIVAL I **ROOM 2**

Co-moderators: María-Dolores Chirlaque ENCR SC representative Spain **& Valérie Jooste** GRELL SC representative France

Survival in Adolescents and Young Adults with cancer compared with children and adults in Europe: a EUROCARE6 study

Annalisa Trama Italy

Exploring previous pregnancy impact on breast cancer stage, treatment and survival

Laia Barrachina-Bonet Spain

11:00 - 12:15

SESSION 2 – EXPOSURE, CANCER ETIOLOGY & SCREENING

Co-moderators: Volker Arndt ENCR SC representative Germany **& Anne Cowppli-Bony** GRELL SC representative France

ORAL COMMUNICATION

Do wildfires impact the incidence of cancer? - a Portuguese study

Rita Calisto Portugal

Communicating Epidemiological Research on Environmental Cancer Risks: Lessons from Slovenian Cancer Registry

Amela Duratović Konjević Slovenia

The impact of Hepatocelular carcinoma etiologies on Madeira Islands, Portugal

Pedro Berenguer Portugal

11:00 - 12:15

Characteristics of post-colonoscopy versus interval colorectal cancers in participants of organized FIT screening
Koen Van Herck Belgium

Increasing burden of HPV-related cancers in Estonia
Keiu Paapsi Estonia

Q&A

12:15 - 13:30 **Lunch Break & Poster Visit and Flash Talks**

EPIDEMIOLOGICAL AND CLINICAL USE OF CANCER REGISTRY DATA I **ROOM 1** Co-moderators: **Freddie Bray** ENCR SC representative IACR & **Leticia Fernández** GRELL SC representative Cuba	NEW METHODS INNOVATION AND AI APPLICATIONS **ROOM 2** Co-moderators: **Gijs Geleijnse** ENCR SC representative The Netherlands & **Rita Calisto** GRELL SC representative Portugal
MONITORING AND IMPROVING SKIN MELANOMA CARE MANAGEMENT IN SLOVENIA WITH QUALITY OF CARE INDICATORS Katarina Lokar Slovenia	**The UK-US Childhood Cancer Pilot: Enabling International Cancer Registry Collaborations with Privacy-Enhanced Analytics** Gijs Geleijnse UK
Pancreatic cancer patients with vague symptoms have later stage disease, fewer treatment options and poorer survival. Damien Bennett North Ireland	**The OMOP Common Data Model as a facilitator for FAIRification of Population-Based Cancer Registries** Harlinde De Schutter Norway
Causes of death in survival analysis of cancer patients Gemma Gatta Italy	**Feasibility to analyze hormone receptors status from breast cancer pathological reports via automated techniques** Hibah Abdulaziz A. Alshaya Scotland
COVID-19 and changes in the cancer incidence rates in Baden-Württemberg (Southwest Germany) in 2020-2023 Lina Jansen Germany	**Can synthetic data mirror the structure and outcomes of cancer registry data** Hannah Baltus Germany
Epidemiological causal models and their generalizabilty: a use case to study long-term effects in young cancer survivors Alice Bernasconi Italy	**Modernizing Morocco's Cancer Registry with a Full-Web Information System** Zineb Gaizi Morocco

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SESSION 3 - SURVIVAL

Co-moderators: **Valérie Jooste** GRELL SC representative France & **Maciej Trojanowski** ENCR SC representative Poland

ORAL COMMUNICATION

13:30 - 14:30

Breast cancer survival by subtype, stage at diagnosis and socioeconomic status among young women in Madrid, Spain
Candela Pino Rosón Spain

Flexible penalized relative mortality models for modelling under-mortality in early-stage prostate cancer patients
Mathieu Fauvernier France

13:30 - 14:30

Cancer survival estimation using population-based data: biases and pitfalls
Laura Botta Italy

Survival and Prevalence of Cancer in Adolescents and Young Adults (AYAs) in Switzerland
Aaron Renggli Switzerland

Q&A

14:30 - 15:00 **Coffee Break & Poster Visit and Flash Talks**

AGE AND CANCER & SCREENING **ROOM 1**

Co-moderators: **Antonia Sánchez** GRELL SC representative Spain & **Laura Ortelli** GRELL SC representative Switzerland

Years of life lost due to cancer in the UK, 2023
Eszter Jardan England

Impact of the COVID-19 pandemic on Northern Ireland breast cancer patients' referral and treatment pathways
Hellen Mitchell North Ireland

13:30 - 14:30

SESSION 4 - CANCER INCIDENCE & RESULTS FROM NEW CANCER REGISTRIES

Co-moderators: **Marcela Guevara** GRELL SC representative Spain & **Lúcio Lara-Santos** IPO Porto

ORAL COMMUNICATION

Semi-automated monitoring of trends in incidence and stage distribution for enhanced timeliness in cancer control
Hanna M Peacock Belgium

Forecasting Lung Cancer Incidence in Slovenia: Age-Period-Cohort Analysis with Smoking Data
Maja Jurtela Slovenia

Combined Cancer Distribution by Anatomical Site and Sex in Cape Verde (2022-2023)
Cátia Mendonça Cape Verde

Colorectal Cancer Incidence Projections in Brazil: Challenges and Perspectives for 2030-2040
Rejane de Souza Reis Brazil

Q&A

16:15 - 16:45

SESSION 5 - GRELL GENERAL ASSEMBLY (FOR GRELL MEMBERS)

18:15 **Welcome Drink & Boat Tour**

Thursday, May 29th

08:15 - 09:00 **Welcome & Posters Visit**

09:00 - 10:00

SESSION 6 – FUTURE OF CANCER REGISTRIES – PERSPECTIVES FROM CLINICIANS

Co-moderators: **Marta Soares** IPO-Porto, Portugal & **Liesbet van Eycken** ENCR SC representative Belgium & IACR & **Arnaud Alves** University Hospital Centre Caen Department of Digestive Surgery, France

KEYNOTE SPEAKER 1

Future of Cancer Registries – Perspectives from clinicians

Riccardo Audisio University of Gothenburg, Sweden

ABSTRACT OR PANEL SESSION (10 MIN)

Q&A

10:00 - 10:30 **Coffee Break & Poster Visit and Flash Talks**

PREVENTION **ROOM 1**

Co-moderators: **Giske Ursin** ENCR SC Norway & **Koen Van Herck** GRELL SC Belgium

Population Attributable Factors related to cancers incident in Luxembourg: a RELIANCE pilot study

Bruno Lima Luxembourg

Trends in the fraction of cancer attributable to air pollution in the UK and its constituent nations, 2003-2023.

Sofia Migues England

Population attributable fractions for smoking related cancers in Ireland in 2022

Laura Finneran Ireland

SOCIAL INEQUALITIES AND CANCER I **ROOM 2**

Co-moderators: **Volker Arndt** ENCR SC Germany & **Anne Cowppli** GRELL SC France

Inequalities in cancer risk among migrant populations in a region of southeastern Spain

María Dolores Chirlaque Spain

Use of mortality tables by level of deprivation in the study of social inequalities in cancer survival

Joséphine Gardy France

10:30-11:30

SESSION 7 – CANCER AND CURE

Co-moderators: **María Dolores Chirlaque** ENCR SC representative Spain & **Dana Coza** GRELL SC representative Romania

ORAL COMMUNICATION

Time to cure and follow-up recommendations in breast and colorectal cancer in Tarragona, Spain

Marià Carulla Aresté Spain

Indicators of cancer cure in Europe by geographical area and stage: results from the EUROCARE-6 study

Elena Demuru Italy

Quality indicators for prostate cancer care. A population-based study in southern Switzerland

Laura Ortelli Switzerland

10:30-11:30

Risk of metastatic recurrence in Italian women with breast cancer using population-based data: a modelling approach
Fabiola Giudici Italy

Q&A

11:30-12:30

SESSION 8 - EPIDEMIOLOGICAL AND CLINICAL USE OF CANCER REGISTRY DATA

Co-moderators: **Deirdre Murray** ENCR SC representative Ireland & **Leticia Fernandez** GRELL SC representative Cuba

ORAL COMMUNICATION

Improving lung cancer risk assessment in primary care patients with cough or dyspnoea using prescriptions data
Marta Berglund UK

Pre-existing Anxiety/Depression or Painful Conditions, imaging investigations and emergency lung cancer diagnosis risk
Helen Fowler UK

Evolution of microsatellite instability testing in colorectal cancer using French digestive cancer registry data
Joséphine Gardy France

Cause specific mortality within the first years of follow-up after diagnosis of cancer
Volker Arndt Germany

Q&A

12:30 - 13:45

Lunch Break & Poster Visit and Flash Talks

EPIDEMIOLOGICAL AND CLINICAL USE OF CANCER REGISTRY DATA II **ROOM 1**

Co-moderators: **Deirdre Murray** ENCR SC representative Ireland & **Marcela Guevara** GRELL SC Spain

Differentiating population-based palliative care needs in cancer patients using cancer registry data
Teja Oblak Slovenia

Pre-diagnostic consultations and imaging investigations in emergency-diagnosed vs referred lung cancer patients
Marta Berglund England

Availability and completeness of cancer registries' stage information provided to the European Cancer Information System
Cristina Bosetti Italy

Incidence trends of early-onset colorectal malignancies in Germany: A registry-based study from 1994 to 2021
Sven Voigtländer Germany

EPIDEMIOLOGICAL AND CLINICAL USE OF CANCER REGISTRY DATA III **ROOM 2**

Co-moderators: **Liesbet van Eycken** ENCR SC Belgium & **Dana Coza** GRELL SC Romania

The impact of the COVID-19 pandemic on cancer incidence, survival, stage and healthcare outcomes in Switzerland
Katharina Staehelin Switzerland

Second primary cancers among males with a first primary prostate cancer: A population-based study in Northern Portugal
José Taveira-Barbosa Portugal

Incidence and stage at diagnosis of childhood and adolescent cancer between 2015-2020 in the Community of Madrid, Spain
Clotilde Sevilla Hernández Spain

Epidemiology of female metastatic breast cancer between 1993 and 2022 in the Federal state of Saarland, Germany
Natalie Rath Germany

Recognition as a Paediatric Oncology Reference Centre: A Data-Driven Approach Using Cancer Registry Insights
Bárbara Peleteiro Portugal

Breast cancer progression: retrospective cohort of 8578 women in UK cancer registries
Zoe Bradford Scotland

13:45 - 15:00

SESSION 9 - AGE AND CANCER

Co-moderators: **Freddie Bray** ENCR SC representative IARC & **Antonia Sanchez Gil** GRELL SC representative Spain

ORAL COMMUNICATION

Childhood tumours and congenital anomalies: possible association and impact on survival
Carmen Martos Spain

Survival after childhood neuroblastoma in mainland France (2000-2016) – a national registry-based study
Claire Poulalhon France

Childhood and adolescent cancer survival 1998-2017. A population-based study from the Italian cancer registries
Gemma Gatta Italy

Linking population-based and national clinical pediatric cancer registries on neuroblastoma: the BENCHISTA-ITA project
Fabio Didonè Italy

Trends in Childhood Cancer Incidence and Mortality Rates: 60th years of experience in Cali, Colombia
Elvia Karina Grillo Colombia

Q&A

15:00 - 15:30

Coffee Break & Poster Visit and Flash Talks

DATA QUALITY II **ROOM 1**

Co-moderators: **Manola Bettio** ENCR JRC & **Alexandra Mayer da Silva** GRELL SC Portugal

ENHANCING CANCER REGISTRATION IN SLOVENIA: A SWOT-BASED EVALUATION OF ACTIVE CASE-FINDING AND DIGITAL PROCESS MAPPING
Tina Žagar Slovenia

Completeness of case ascertainment in the Swiss Childhood Cancer Registry
Aaron Renggli Switzerland

SOCIAL INEQUALITIES AND CANCER II **ROOM 2**

Co-moderators: **Laetitia Daubisse-Marliac** ENCR SC representative France & **Anne Cowppli** GRELL SC representative France

Incidence rates of tobacco related cancers by deprivation quintile in Ireland 2014 to 2018
Laura Finneran Ireland

Liver cancer burden in Europe with a focus on histological subtype patterns
Giorgia Randi Italy

15:30-16:30

SESSION 10 - SOCIAL INEQUALITIES AND CANCER

Co-moderators: **Maria José Bento** IPO-Porto, Portugal & **Laura Ortelli** GRELL SC representative Switzerland

ORAL COMMUNICATION

Impact of Cancer Diagnosis on Employment in Austria
Monika Hackl Austria

15:30 - 16:30

Are prostate cancer grade and initial prognosis socially patterned? Data from the Tarn Cancer Registry over 2006-2021
Sebastien Lamy France

Cancer RADAR – mapping cancer risk among individuals with a migration background across Europe
C.J. Alberts Netherlands

World-wide patterns of care and time to treatment for ovarian cancer – VENUSCANCER
Veronica Di Caroli UK

Q&A

16:30-17:30 **SESSION 11 - ENCR-JRC ACTIVITIES AND SCIENTIFIC UPDATES**

19:30 **Gala Dinner**

Friday, May 30th

08:45 - 09:15 **Welcome & Posters Visit**

09:00 - 09:45

SESSION 12 - DIGITAL TOOLS

Co-moderators: **Maria Teresa Pesce** GRELL SC representative Switzerland & **Gijs Geleijnse** ENCR SC representative The Netherlands

KEYNOTE SPEAKER 1
Future of Cancer Registries and Digital Tools
Ricardo Correia Health Informatics, University of Porto, Portugal

Q&A

09:45 - 10:15 **Coffee Break & Poster Visit and Flash Talks**

SURVIVAL II **ROOM 1**
Co-moderators: **Marià Carulla** GRELL SC representative Spain & **Maciej Trojanowski** ENCR SC representative Poland

Long-term survival of breast cancer patients by stage at diagnosis in Europe: EUROCARE-6 results
Silvia Rossi Italy

Survival in synchronous or metachronous oligometastatic and polymetastatic NSCLC - a cancer registry analysis
Antje Schliemann Germany

Trends in survival from lung cancer in a Northern Italian region: a population-based study
Federica Zamagni Italy

SESSION 13 – DATA QUALITY

Co-moderators: **Laetitia Daubisse-Marliac** ENCR SC representative France & **Alexandra Mayer da Silva** GRELL SC representative Portugal

10:15 - 11:15

ORAL COMMUNICATION

Approaches to handle missing follow-up time: A comparative analysis of contralateral breast cancer incidence
Sarah Haile Switzerland

Assessment of WHO's International Classification of Health Interventions as a Standard for Cancer Registry Procedures
Matthijs Sloep The Netherlands

Quality indicators over time of European cancer registries data submitted to the European Cancer Information System
Joanna Julia Bartnicka Italy

Q&A

SESSION 14 – NEW METHODS, INNOVATION AND AI APPLICATIONS

Co-moderators: **Robin Schaffar** GRELL SC representative Switzerland & **Manola Bettio** ENCR – JRC representative

11:15 - 12:30

ORAL COMMUNICATION

Privacy-preserving self-service linkage of cancer registry and socioeconomic data in a safe processing environment
Siri Larønningen Norway

The impact on net survival estimates of different approaches to modelling life tables – insights from CONCORD-4
Veronica Di Carlo UK

CANCER RECURRENCE, PROGRESSION AND TRANSFORMATION– NEW ENCR GUIDELINES FOR POPULATION-BASED CANCER REGISTRIES
Anna Gavin North Ireland

Leveraging Generative AI for Survival Analysis on Synthetic Breast Cancer Data from European Cancer Registries
Dimitris Katsimpokis Italy

Stage Shift in Cervical Cancer: COVID or FIGO?
David Morrison Scotland

Q&A

12:30-12:45

MEETING CLOSING

Award for the best oral communication and poster for young researchers

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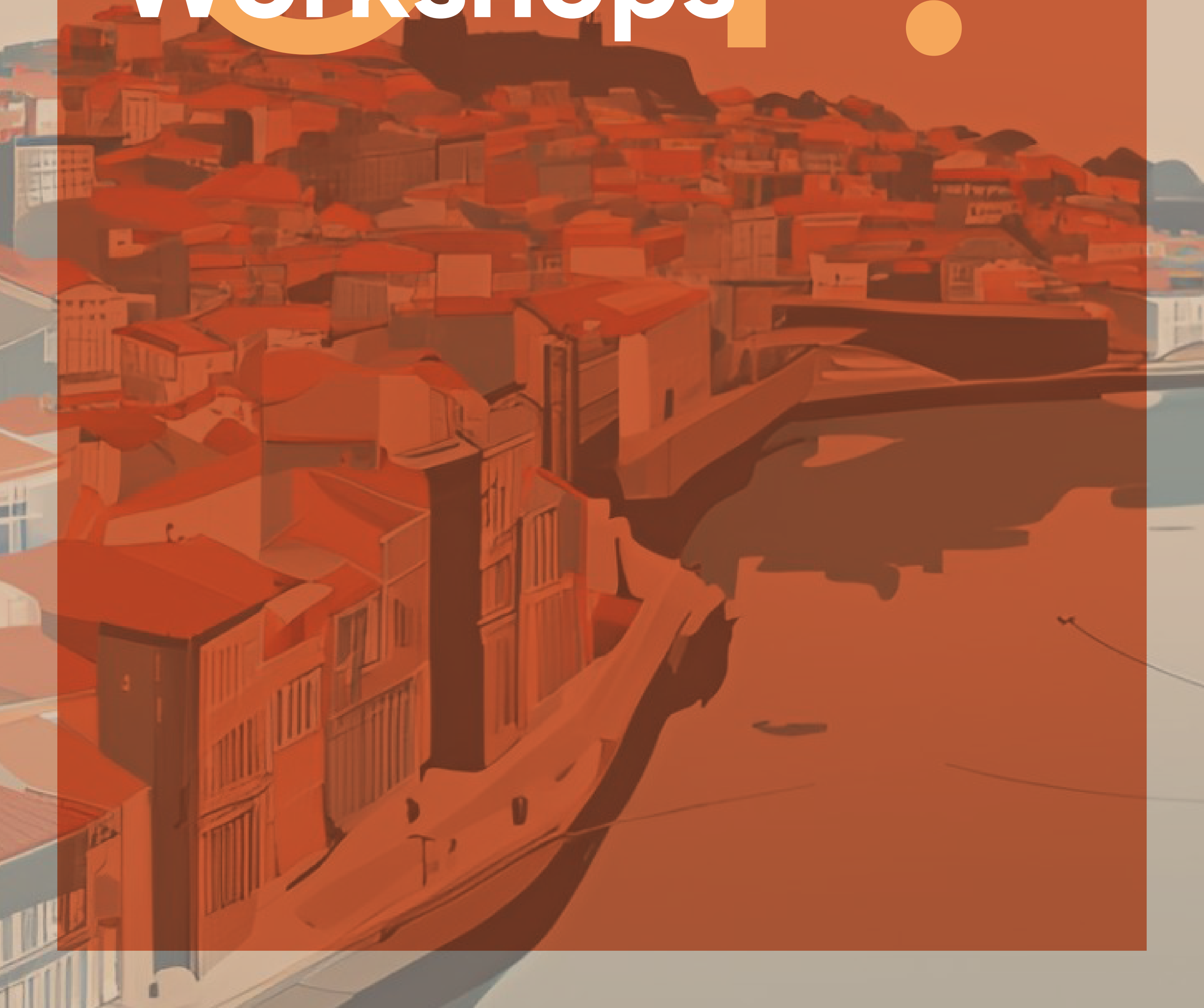
12:45 - 14:00 **Standing Lunch**

04.

Workshops



WORKSHOP 1

ICD-O-4: towards application in population-based cancer registries

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SESSION 1 - ICD-O-4 DEVELOPMENTS

ICD-O-4: development - Introduction and background, planned timelines, planned support/tools for the registries

Ariana Znaor
International Agency for Research on Cancer (IARC), France

Lyon, França

Ariana Znaor is a scientist at the Cancer Surveillance Branch at the International Agency for Research on Cancer (IARC). Within the Global Initiative for Cancer Registry Development program (GICR), she is responsible for coordination of the Regional Hub for Cancer Registration in Izmir (covering Northern Africa, Central and Western Asia).

Before joining IARC in 2013, Dr Znaor was the director of the Croatian National Cancer Registry for 13 years, as well as associate professor of epidemiology at the Andrija Stampar School of Public Health, Zagreb. She completed her MD, MSc and PhD degrees at the University of Zagreb, Croatia.

Her areas of expertise are cancer registration and descriptive epidemiology. She is one of the editors of the Cancer Incidence in Five Continents publications (Volume XI and Vol XII) with a specific area of interest in tumour classifications. Since the establishment of the Izmir Hub in 2013 she organised more than 25 regional cancer registration courses and workshops and has been providing support to cancer registries in the Hub region. Dr Znaor is author of more than 160 peer-reviewed articles.
(Available from: https://www.ncbi.nlm.nih.gov/pubmed/?term=Znaor+A).

ICD-O-4: Changes compared to previous editions

Brian Rous
Cambridge University Hospital, UK

Cambridge, United Kingdom

Dr. Brian Rous is a Consultant Histopathologist at Cambridge University Hospitals NHS Foundation Trust and Clinical Lead at the National Cancer Registration Service, England. He is a Standing member on the editorial board of the WHO classification of tumours and member of the IARC ICD-O panel involved in the development of ICD-O4. He is also a member of the UICC TNM and prognostic factors committee.

SESSION 2 - PERSPECTIVES FROM PBCRS

Plans for ICD-O-4 implementation at the Irish Cancer Registry

Deirdre Murray

National Cancer Registry Ireland (NCRI)

Cork, Ireland

Professor Deirdre Murray was appointed Director of the National Cancer Registry Ireland (NCRI) in June 2021 and Professor of Cancer Epidemiology in University College Cork (UCC). She chairs the UK and Ireland Association of Cancer Registries, is a Steering Group member of the European Network of Cancer Registries and is involved in a number of international research collaborations. She is a member of the Irish National Screening Advisory Committee and the National Research Ethics Committee. Deirdre previously worked in the National Cancer Control Programme (NCCP), and set up and led the NCCP's Cancer Intelligence function. Professor Deirdre Murray is a medical graduate of UCC and undertook her clinical training in Ireland and the UK and higher specialist training in Public Health Medicine in Ireland.

Implications for coding and research at the cancer registry

Rafael Marcos-Gragera

Epidemiology and Cancer Registry Unit of Girona

Girona, Spain

Specialist in Preventive Medicine and Public Health, with a Master's in Methodology in Health Sciences and a PhD in Public Health from the Autonomous University of Barcelona. I currently work as an **Epidemiologist** at the Epidemiology and Cancer Registry Unit of Girona, part of the Catalan Institute of Oncology.

Since 1997, I have combined my professional activity with teaching, delivering postgraduate-level courses (including doctoral, postgraduate, and health diploma programs), and have served as an **Associate Professor** at the University of Girona since 2006.

My training and professional experience have primarily focused on **cancer surveillance**, particularly the monitoring of cancer incidence and survival, as well as the **evaluation of cancer prevention programs**.

I have actively participated in **national and international cancer research projects**.

WORKSHOP 2

Is your data available for this year? Strategies to enhance timeliness at population-based cancer registries

Timeliness refers to how quickly cancer data can be collected, processed, and reported. There is commonly a trade-off between timeliness and the completeness and validity of the data.

The workshop will explore the concept of timeliness at the population-based cancer registry, alongside the challenges and solutions - from enhanced methods of operation at the registry through to statistical estimates based on extrapolations of the collected data.

SESSION 1 - TBD

Is your data available for this year? Practical aspects and techniques for addressing timeliness at the cancer registry

Freddie Bray
International Agency for Research on Cancer (IARC)

Lyon, France

Dr Bray is Head of the Cancer Surveillance Branch at the International Agency for Research on Cancer (IARC), in Lyon, France. His areas of research revolve around the descriptive epidemiology of cancer. These include estimation of the global cancer burden and the analysis of time trends of cancer, including predictions of the future scale and profile of cancer and linkages to human development transitions. In support of the overwhelming need for high quality cancer surveillance systems, Dr Bray leads the Global Initiative for Cancer Registration development (GICR, http://gicr.iarc.who.int), an international multi-partner programme designed to ensure a sustainable expansion of the coverage and quality of population-based cancer registries in LMIC. A key mechanism in achieving this goal is the provision of tailored support and advocacy to individual countries through local expert guidance via six Regional Hubs worldwide. Dr Bray received the UICC Outstanding Contribution to Cancer Control Award in the Civil Society category in 2023.

Projections and detailed trend analyses of cancer incidence or mortality using multidimensional penalized splines

Zoe Uhry

Santé Publique France (SPF)

Lyon, France

Biostatistician with 20 years' experience in the field of cancer epidemiology, I work for Santé Publique France (SPF) outposted in the Biostatistics department of the Hospices Civils de Lyon (HCL), as part of a partnership between the French cancer registry network Francim, HCL, SPF, and the Institut National du Cancer.

Within this framework, I am particularly involved in developing statistical methods to produce cancer statistics in France (incidence, mortality, net survival…) using cancer registry data. These works cover various methodological issues, such as flexible modelling for trend analyses of incidence, mortality and excess mortality (net survival) based on multi-dimensional penalized regression splines, national cancer incidence estimation in the context of partial registry coverage, and estimation of cancer incidence at a small geographical scale using registry and medico-administrative data.

I am also involved in disseminating these statistical developments, e.g. in a summer school on statistical methods for excess hazard analysis (Corsican Summer School on Modern Methods in Biostatistics and Epidemiology: Statistical Methods and Recent Advances in Statistical Methods for Excess Risk Analysis).

05.

Keynote Speakers

The European Health Data Space (EHDS): A new era for healthcare in Europe

Anne Calteux

European Commission

City, Luxembourg

Anne Calteux is Head of the Representation of the European Commission in Luxembourg since September 2021.

Between 2014 and 2021, Ms Calteux has held a number of leading positions where she exercised a high level of responsibility, most notably the last one as **coordinator of the COVID-19 Crisis Cell** in the Ministry of Health in Luxembourg. As **Head of EU and International Affairs** and member respectively **Head of Cabinet** of three consecutive Health Ministers in Luxembourg, she has gathered ample knowledge of EU affairs and policies and of political communication.

Between 2004 and 2013, she worked in the **Permanent Representation of Luxembourg to the European Union**, as a Counsellor in charge of public health, pharmaceuticals and social security.

Between 1999 and 2003, she practiced as a **lawyer** at the Luxembourg Bar, specialising in litigation law.

Ms Calteux holds a Master of laws from Université Robert Schuman Strasbourg and an LLM from King's College London, where she has specialised in Comparative European law.

SESSION 1

Cancer Registries in the European Health Data Space

The European Health Data Space is coming! Published in March 2026, the EHDS will bring a major shift in how health data can and will be used in Europe. With the aim to optimise the exchange of and access to health information within the EU, what will the EHDS bring for cancer registries? It is an opportunity, a risk, or maybe both?
Learn more about what drives the EHDS developments, and what cancer registries should prepare for.

Hanneke A. Luth

Erasmus MC

City, The Netherlands

Hanneke Luth is a strategic advisor on privacy and information security issues. Having a background in both law and economics, she focuses on translating laws and regulations to data driven processes, aiming to facilitate responsible data use. She has consulted many organisations in the Dutch public sector (ministries, city counsels), non-profit and telecom industry on how to enhance information security and privacy broadly. Her focus is on how to make it work within the organisation (processes, systems, projects), with a specific focus on governance and risk management.

Since 2020, she fulfills the role of Data Protection Officer of the Erasmus MC, the largest academic hospital in the Netherlands. Health care, health research and health education, and connected business operations, come with considerable challenges regarding adequate use of sensitive personal data. For an organisation as the Erasmus MC with an important public role in society, careful well considered handling of personal data is a license to operate. Hanneke sees acting as DPO for the Erasmus MC as a great responsibility and a privilege. In this capacity she also advises on how the national or European legislation should be enhanced to facilitate health research while respecting or even promoting the fundamental privacy rights of individuals.

SESSION 6

Perspectives from a Clinician on the Future of Population-Based Cancer Registries

There is compelling evidence demonstrating how accurate observation, truthful description, and meticulous recording can yield life-changing knowledge. These practices have a significant positive impact on early cancer detection, screening, treatment planning, and ultimately, patient survival (1).

Recent advancements in artificial intelligence (AI) offer great promise in furthering this knowledge. By integrating observational data with specific tumor characteristics—such as genomic profiles—AI can uncover deeper insights into individual malignancies. Technological innovations, coupled with the rapid decrease in sequencing costs, have made it feasible to perform genomic profiling on hundreds of cancer-associated genes as part of routine cancer care. This profiling refines cancer subtype classification, identifies patients most likely to benefit from systemic therapies, and screens for germline variants that contribute to hereditary cancer risk (2).

Population-based research is increasingly recognized as a more efficient alternative to randomized controlled trials (RCTs) in guiding clinical practice. RCTs face numerous challenges, including soaring costs—averaging $6,000 per patient compared to only $2,000 in compensation—and frequent rejection of articles due to design flaws, especially in selecting representative populations. Poor sampling undermines the generalizability and validity of study results due to the introduction of sampling bias.

Only 2–3% of real-world patients are enrolled in RCTs, and this narrow subset is highly susceptible to selection bias: participants are typically better nourished, more educated, younger, less socioeconomically deprived, and have fewer comorbidities or concurrent medications. Additionally, sponsorship bias is a well-documented issue that further skews findings (3, 4).

In contrast, population-based cancer registries represent the gold standard for measuring cancer burden. They guide policymakers in setting priorities, planning for emerging trends, allocating resources, and designing tailored prevention, screening, and treatment strategies (1). However, their influence on clinical practice often remains theoretical, especially in managing widespread medical conditions—issues frequently relegated to impractical RCTs.

Despite the wide network of cancer registries and the substantial costs required to sustain them, these systems often lack coordination, and funding is questionably allocated. More critically, they are frequently disconnected from clinical expertise, resulting in research questions that fail to address the most pressing clinical needs. Strengthening collaboration and fostering closer integration between cancer registries and clinical experts is essential. Such partnerships can help generate patient-centered research questions and deliver clinically meaningful answers.

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Riccardo A. Audisio

Sahlgrenska University Hospital

Göteborg, Sweden

Riccardo A. Audisio was born in Milan, Italy, where he completed his High School at the Istituto Leone XIII in 1975. He graduated in Padua in Medicine & Surgery (1980) and specialised in General Surgery at the University of Verona (1985) as well as in Diagnostic Radiology at the University of Milan (1994).

Trained at the National Cancer Institute of Milan (1980-94) he was appointed deputy director at the Department of General Surgery, European Institute of Oncology, Milan (1994-8).

He moved to the United Kingdom in 1999 to become Consultant Surgical Oncologist and Honorary Professor at the University of Liverpool, UK. As of February 2018 he is Professor at the Institute of Clinical Sciences, University of Göteborg, Sweden.

Past Editor of Surgical Oncology, Elsevier Publisher (2007-13) he is Editor-in-Chief of the European Journal of Surgical Oncology (2013-present). Author of 290 peerreviewed publications and 47 book chapters, Professor Audisio edited 23 book projects and is guest reviewer to 39 international scientific Journals.

Professor Audisio is past-president of SIOG (International Society of Geriatric Oncology), BASO (British Association of Surgical Oncology) and ESSO (European Society of Surgical Oncology). He served as an advisor to the Department of Health, UK and to the All Party Parliamentary Group on Breast Cancer in Older Women. Professor Audisio sat on the Board of Directors of ECCO, the European CanCer Organisation. He is member of several international scientific societies including BASO, ESSO, SSO, AAA, SIOG and EUSOMA. He is past-chair of the Education & Training Committee of ESSO. Professor Audisio chairs the Surgical Oncology track at the Global Health Catalyst, Harvard Medical School.

In 2021 he joined forces with the Department of Surgery in Ravenna/University of Bologna, to boost knowledge and improve clinical practice in the multidisciplinary management of elderly cancer patients.

His clinical research focuses on Geriatric Oncology, Breast Cancer, Education/Certification in Surgical Oncology and the optimization of Surgical Oncology in L/MICs.

Since January 2024 Professor Audisio is co-chair of the INTERACT-EUROPE 100 Project (EU co-funded). He is also serving on the Scientific Advisory Board of the Institute of Oncology, Ljubljana, Slovenia.

SESSION 12

Future of Cancer Registries and Digital Tools

Cancer registries play a critical role in monitoring disease patterns, evaluating care quality, and supporting public health decisions and research. However, their effectiveness is often limited by the quality and structure of the clinical data on which they rely.

Many persistent challenges stem from upstream issues in clinical information systems, such as incomplete documentation, unstructured free-text notes, and variability across institutions. These limitations place a considerable burden on cancer registry teams and can compromise the timeliness and consistency of collected data.

This presentation explores how emerging digital tools—particularly Artificial Intelligence (AI)—can help address some of these barriers. It discusses approaches for improving data collection (e.g., voice input, automated text processing), enabling summarisation of clinical episodes, simplifying access to scientific evidence, and facilitating knowledge generation from real-world data.

The session also highlights the importance of data quality and system interoperability, including connections to imaging, laboratory, and medical device sources. While avoiding technical detail, the talk underscores the critical role of standardisation and system integration as enablers of effective digital innovation.

Beyond technology, the presentation calls attention to the need for capacity building among registry professionals. Equipping teams with the skills to analyse and act on data is essential for the meaningful use of advanced tools in cancer surveillance and planning.

Finally, the European Health Data Space is presented as a strategic opportunity. Emphasis is placed on federated data access models, the use of common data structures such as OMOP, and the adoption of FAIR principles—including the publication of metadata to support ethical, transparent, and reusable data sharing.

The future of cancer registries will depend not only on new digital tools, but also on strengthening the clinical and human foundations that support them.

Ricardo Correia

Health Informatics, University of Porto

Porto, Portugal

Professor Ricardo João Cruz-Correia is an Associate Professor at the Department of Community Medicine, Information and Decision Sciences (MEDCIDS), the Faculty of Medicine of the University of Porto (FMUP). In 1996 achieved a degree in Computer Science at the Faculty of Sciences (FCUP); in 1998 achieved a Master's Degree in Computer Science also at FCUP, and achieved a PhD at FMUP in 2008 in the Integration of Hospital Information Systems. Has more than 300 scientific publications in health informatics (https://scholar.google.pt/citations?user=uEK3sEkAAAAJ). He has collaborated on the implementation of several health information systems. Member of several organizations of health informatics standardization (HL7, openEHR, IPQ CT199, ABNT Brasil), currently president of the Portuguese health informatics association e-MAIS. He has lectured several curricular units on Medical Informatics (e.g. "Health Information Systems and Electronic Patient Records", "Models of clinical information and health integration standards") of pre and post-graduation courses. He is currently supervising several PhD and Master's theses on Health Informatics. Co-founder of 3 UP spin-off companies (www.hltsys.pt, www.virtualcare.pt, https://www.linkedin.com/company/5083162/) and a professional school (www.ciencia-letras.pt).

He has recently been involved in several seminars presenting the potential and dangers of using LLMs (e.g. ChatGPT) in higher education and healthcare, standing out as an informed and critical advocate of emerging technologies in healthcare.

06.

Abstracts

Oral Communication - Workshops
Oral Communication
Flash Talks
Poster

Abstracts

Oral Communications Workshops

Title **Code** 16

TIMELINESS IN CRS – DOES THE EXTENSION OF STATISTICS PUBLICATION TIME MAKE SENSE?

Authors Names

Maciej Trojanowski (1); Anna Kubiak (1); Łukasz Taraszkiewicz (1); Witold Kycler (2)

Authors Affiliations

1. Greater Poland Cancer Registry, Greater Poland Cancer Centre, Poznan, Poland
2. Gastrointestinal Surgical Oncology Department, Greater Poland Cancer Centre, Poznan, Poland

Theme

Strategies to enhance timeliness on cancer registries

Abstract

Objectives: Cancer registries worldwide face ongoing challenges in balancing timely statistics publication with their quality and completeness. In Poland, the cancer registration law mandates a two-year period to ensure accurate reporting in the Polish National Cancer Registry. This study, based on regional data from the Greater Poland Cancer Registry (GPCR), aimed to determine whether extending the data collection period impacts the number of reported cancer cases.

Methods: GPCR data from 2018–2021, with follow-up extending until October 30, 2024, were utilized. Cancer cases were assumed to follow a Poisson distribution. Z-scores and two-sided p-values were calculated for each ICD-10 group and sex category to compare results from standard versus extended data collection periods. Statistical significance was set at $\alpha = 0.05$.

Results: For most ICD-10 groups, the differences between standard and extended data collection periods were minor and statistically insignificant. However, incidence from 2018 revealed statistically significant differences for males ($p=0.008$) and overall ($p=0.002$). No statistically significant differences emerged for subsequent years (2019–2021), neither sex and site specific nor overall.

Conclusions: Extending the data collection period typically does not impact the total number of reported cancer cases, confirming the reliability and stability of GPCR cancer registration practices and its accuracy for epidemiological analyses. The statistically significant differences observed for the year 2018, both overall and specifically for males, are likely attributable to longer follow-up periods allowing for more comprehensive reporting. Despite methodological variations in data collection process, the results consistently demonstrated high quality and comparability of registry data. Additionally, the completeness of data reporting remained robust throughout the COVID-19 pandemic, highlighting the registry's effective organizational framework.

Title **Code** 59

INTRODUCTION OF HPV-SCREENING FOR CERVICAL CANCER: CHALLENGES AND OPPORTUNITIES FROM THE CANCER REGISTRY PERSPECTIVE.

Authors Names

Koen Van Herck (1); Annemie Haelens (1); Petra Denolf (1); Kris Henau (1); Anke De Geyndt (1); Lauriane Rouard (1); Carol Clinckaert (1); Katia Emmerechts (1); Julie Francart (1)

Authors Affiliations

1. Belgian Cancer Registry, 1210 Brussels, Belgium

Theme

Strategies to enhance timeliness on cancer registries

Abstract

Objectives: Belgium introduced 5-yearly primary HPV-testing for cervical cancer screening in women aged 30-64 years in 2025. Consequently, many screening results now come from clinical biology laboratories, without pathology laboratories (one of our main data sources) being involved. The Belgian Cancer Registry (BCR) therefore needed to adapt incoming dataflows, to ensure the continuity and completeness of our registries. Moreover, all procedures for data handling and service to screening programs needed revision.

Methods: BCR adopted technical standards from a coinciding eHealth project implementing HL7-FHIR messages for communication of clinical biology lab results to GP's electronic health records. Existing datasets and coding systems were adapted for use by clinical biology labs. Meanwhile, the frequency of data collection from pathology labs was multiplied, with minimal changes to their existing data extraction protocols. ICT-architecture for receiving and handling the HL7-FHIR messages was developed and integrated with existing ICT-infrastructure to allow rapid transmission of screening results to regional screening organizations.

Results: All clinical biology labs were informed on the registration procedures and were assigned a contact person within BCR. Individual lab results in HL7-FHIR messages form a new, direct and continuous dataflow from a previously un(der)used source. Consequently, cervical cancer screening information is available much earlier than before, permitting communication of screening results. Revisions of privacy approvals permitted extra socioeconomic and geographic information.

Conclusions: Together with major challenges, the recent switch to HPV-screening triggered important steps towards a more rapid and future-proof multi-source data collection at BCR. This offers opportunities for collecting other relevant data from clinical biology labs, and it stimulates pathology labs towards rapid and structured reporting of individual results.

Title **Code** 100

TIMELINESS OF CHILDHOOD CANCER REGISTRATION IN SWITZERLAND: THE IMPACT OF THE CANCER REGISTRATION ACT

Authors Names

Yara Shoman (1,2), Ursula M. Kuehnel (2), Grit Sommer (1,2), Ben Spycher (1,2), Fabiën N. Belle (1,$), Claudia E. Kuehni (1,2,3,$) for the SwissPedCancer* and SwissPedHealth consortium

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1. Institute of Social and Preventive Medicine, University of Bern, Switzerland
2. Childhood Cancer Registry of Switzerland (ChCR), Bern, Switzerland
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$. Authors contributed equally as co-last authors

*. SwissPedCancer consortium: Pierluigi Brazzola, Manuel Diezi, Daniel Drozdov, Fabienne Gumy-Pause, Ana Guerreiro Stücklin, Katrin Scheinemann, Christina Schindera, Freimut Schilling, Nicolas Waespe

Theme

Strategies to enhance timeliness on cancer registries

Abstract

Objectives: In January 2020 the national Cancer Registration Act came into force in Switzerland. Cancer notification became mandatory, and the national processes of cancer registration were adapted. This study assesses timeliness of cancer registration before and after 2020.

Methods: We included data of all patients diagnosed with cancer below age 20 yrs and registered from 2008-2024 in the Childhood Cancer Registry (ChCR). Timeliness in cancer registration refers to the time interval between a cancer diagnosis and the inclusion of this case in cancer statistics. For cases registered 2008-2019, we measured timeliness from diagnosis to registration and then to publication. For cases after 2020, we measured timeliness from diagnosis to informing the patient and parents/legal representatives about the ChCR, to ChCR notification, to first (case creation), to final registration in the database and to publication. We compared timeliness between the two periods of registration and for three age groups (infants [15yrs]).

Results: Before 2020 (7,599 cases registered), the median [IQR] time from diagnosis to publication was 5.4 yrs [2.1, 20], with shorter delays for infants 2.5 yrs [1.7, 7.1] and children 2.4 yrs [1.7, 9.3] and longer for adolescents 14.3 yrs [7.0, 25]. Routine registration via Paediatric Oncology Centers was faster than registration via linkages with Cantonal Cancer Registries and the Federal Office of Statistics; 2.5 yrs [1.8, 7.2] versus 22 yrs [13.7, 30]. After 2020 (2,026 cases registered), timeliness from diagnosis to publication was 2.2 [1.3, 3.3] years. Timeliness for infants was 2.0 yrs [1.5, 2.5], children, 1.8 yrs [1.0, 2.4], and adolescents, 2.6 yrs [1.5, 4.2].

Conclusion: Despite additional registration steps, overall timeliness improved, in particular for adolescents, driven by the reporting obligation and changes in cancer registration processes since 2020.

Title **Code** 107

VALIDITY OF PROJECTIONS OF NEW CANCER CASES IN AUSTRIA

Authors Names

Monika Hackl (1); Petra Ihle (1); Florian Trauner (2); Armin Gerger (3)

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1. Statistik Austria, Österreichisches Nationales Krebsregister
2. Gesundheit Österreich GmbH (GÖG), Gesundheitsökonomie und -systemanalyse
3. Österreichische Gesellschaft für Hämatologie und Medizinische Onkologie

Theme

Epidemiological clinical use of cancer registry data

Abstract

Objectives: Projections of the number of new cases and deaths from cancer are essential for the healthcare system. This analysis compares projected colorectal and lung cancer incidence in Austria with observed data to assess the reliability of forecasts of new cancer cases in Austria.

Methods: Data on cancer incidence from the Austrian National Cancer Registry from 1983 to 2020 were compared to previous projections of these data. In 2015 two prognostic models were used: a constant variant based on 2008–2010 rates and a trend variant, reflecting actual risk changes in recent years, projecting up to 2020. Projections were conducted using a cohort component method with a bottom-up approach. The analysis presented focused on colorectal and lung cancer.

Results: The observed incidence cases for colorectal cancer in women correspond to the projections of the trend variant, which are lower than the results of the constant model. An even higher risk reduction than expected in the trend variant was shown for men. They now benefit from the same risk reduction as women in previous years. For lung cancer in men, the observed number of cases corresponds to the projections of the trend variant, which are lower than the results of the constant model. For women, more lung cancer cases were predicted under the trend variant than under the constant variant, implying an increasing risk. The observed data show a relatively stable phase between 2016 and 2020 in absolute terms and even a slightly decreasing risk. Although this is a very desirable result, the development of the risk of lung cancer in this group must be closely monitored.

Conclusions: Cancer incidence projections provide valuable insights for healthcare planning. In general, the results of the trend variant fit the observed data much better than the constant variant based only on predictions of demographic developments.

Title

Code 138

EARLY CANCER INCIDENCE ESTIMATES IMPROVE TIMELINESS OF CANCER INCIDENCE REPORTING BY ONE YEAR

Authors Names

Tim Tambuyzer (1); Harlinde De Schutter (1); Arthur Leloup (1); Kris Henau (1); Carol Clinckaert (1); Bart Van Gool (1); Liesbet Van Eycken (1)

Authors Affiliations

1. Belgian Cancer Registry, Brussels, Belgium

Theme

Strategies to enhance timeliness on cancer registries

Abstract

Objectives: The Belgian Cancer Registry (BCR) traditionally reports validated cancer incidence data with an 18 month delay, integrating information of data provided by oncological care programs (clinical network) and the laboratories for pathological anatomy (pathology network). During the COVID-19 crisis, BCR developed a methodology to estimate cancer incidences with minimal delay. This methodology was further refined and evaluated to serve as a sustainable approach for increased timeliness of cancer incidence reporting.

Methods: Cancer incidence (N and ESR2013) was calculated for incidence years (IY) 2018-2022 based on unprocessed data from the pathology network, being the fastest data available at BCR. Cancer-type specific correction factors were applied to account for additional information from the clinical network and for BCRs usual thorough data quality control and linkage. These factors were derived by comparing the pathology incidence estimates with the corresponding actual validated incidences.

Results: For IY 2018-2022, the average differences between the actual and estimated incidence were less than 1.5% for colorectal, breast, prostate cancer and hematological malignancies. Deviations less than 3% were observed for melanoma and non-melanoma skin cancer, renal, testicular, head and neck, thyroid, uterine and lung cancer. For esophageal, pancreatic, stomach and bladder cancer the difference was 5%) were observed for CNS, cervical and ovarian cancer. Using this methodology, incidence estimates for 2023 could be reported in July 2024.

Conclusions: The early cancer incidence estimate methodology developed by BCR has largely improved timeliness in cancer incidence reporting, reducing the reporting delay from 18 to 6 months. As this approach proved to be quick and reliable, cancer incidence estimates are now systematically integrated in BCR reports. For CNS, cervical and ovarian cancer, further methodological refinements are needed.

Title

Code 198

METHODOLOGY TO ESTIMATE THE INCIDENCE OF CANCER IN SPAIN IN THE CURRENT YEAR. A COLLABORATIVE STUDY OF REDECAN

Authors Names

Alberto Ameijide (1,2); Daniel Redondo (2); Marcela Guevara (2); Arantza López de Munain (2); Miguel Rodríguez (2); María-Isabel Palacios-Castaño (2); María Dolores Chirlaque (2); Susana Merino (2); Jaume Galceran (1,2); REDECAN Working Group

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2. REDECAN (Spanish Network of Cancer registries). Cancer registries of Asturias, Canarias, Castellón, Euskadi, Girona, Tarragona, Granada, La Rioja, Mallorca, Murcia, Navarra y Salamanca. Spain.

Theme

Strategies to enhance timeliness on cancer registries

Abstract

OBJECTIVES: The timeliness of cancer registry data and the incomplete coverage at national level of population-based cancer registries (PBCRs) in some countries, especially in southern Europe, are two major challenges in presenting updated data on cancer incidence. The aim of this study is to present the methodology used by the Spanish Network of Cancer Registries (REDECAN) to estimate updated incidence data.

METHODS: Since 2014, REDECAN estimates cancer incidence in Spain for the current year, with 2025 being the latest estimated year. Incidence data are obtained from PBCRs, while cancer mortality and population data are provided by the National Institute of Statistics. For most tumour types, the national cancer incidence is estimated using adjustment methods based on incidence/mortality ratios (IMR), while models based on local incidence rates are used for low-mortality cancers. For each tumour type, the number of new incident cases (N) and age-standardised rate using the 2013 European standard population (ASRE) are presented.

RESULTS: It is estimated that 296,103 new cases of cancer will be diagnosed in Spain in 2025 (N=166,513, ASRE=683.4 in men and N=129,590, ASRE=445.3 in women). In men, the most frequent cancers will be those of: prostate (N=32,188, ASRE=132.9), colon-rectum (N=27,224, ASRE=112.2) and lung (N=23,442, ASRE=96.6). In women, they will be: breast (N=37,682, ASRE=131.5), colon-rectum (N=17,349, ASRE=57.8) and lung (N=11,064, ASRE=38.3).

CONCLUSION: Methods using IMR models to estimate incidence when incidence is only known for part of the territory, but mortality is available for the whole territory, produce acceptable estimates for most tumour types. These methods are less accurate when the number of deaths is small, IMRs are high due to low lethality of the tumour type, or there are abrupt changes in IMR during the time period studied or in age at diagnosis. These situations require alternative methods.

Abstracts

Oral Communications

Title **Code** 6

COLORECTAL CANCER INCIDENCE PROJECTIONS IN BRAZIL: CHALLENGES AND PERSPECTIVES FOR 2030-2040

Authors Names

Fernanda Cristina da Silva de Lima (1); Rejane de Souza Reis (1); Alfredo José Monteiro Scaff (1); Darlan Henrique Nascimento da Silva (1)

Authors Affiliations

1. Fundação do Câncer, Rio de Janeiro, Brazil

Theme

Epidemiological clinical use of cancer registry data

Abstract

Introduction: Colorectal cancer (CRC) is the most common malignant neoplasm of the gastrointestinal tract and ranks among the five most frequent causes of incidence in both men and women worldwide. In Brazil, it is the third most common cancer, with an estimated 45,630 new cases for 2024. The lifetime risk of developing CRC is estimated to be around 5%, significantly increasing with age.

Objective: To estimate the incidence of CRC (C18-C21) by sex and age group for the years 2030, 2035, and 2040.

Method: The incidence CRC was estimated using similar methodology to that employed in the estimation calculations by Globocan. The method was based on the incidence-to-mortality ratio (I/M), applied to the crude mortality rates estimated by linear regression for the years 2030, 2035, and 2040. The estimates were calculated for Brazil and its Regions, by sex and age group (up to 49 years and over 50 years).

Results: In Brazil, CRC is projected to increase around 21% in the number of new cases between 2030 and 2040, rising from 58,830 to 71,050 cases. More than 90% of cases occur in individuals over 50 years old, while incidents in those under this age group are expected to remain stable.

Conclusion: Preventive strategies, such as changes in modifiable risk factors and early detection of precancerous lesions, have proven effective in reducing both mortality and incidence of the disease. The implementation of screening strategies adapted to the aging Brazilian population is crucial to reducing the impact of CRC in the coming decades. Additionally, prevention through healthy habits and early detection should be fundamental pillars in the fight against CRC, contributing to the improvement of public health in Brazil.

Title **Code** 13

APPROACHES TO HANDLE MISSING FOLLOW-UP TIME: A COMPARATIVE ANALYSIS OF CONTRALATERAL BREAST CANCER INCIDENCE

Authors Names

Sarah R Haile (1); Miriam Wanner (2); Dimitri Korol (2); Sabine Rohrmann (1,2)

Authors Affiliations

1. Epidemiology, Biostatistics and Prevention Institute (EBPI), University of Zurich
2. Cancer Registry of the Cantons of Zurich, Zug, Schaffhausen and Schwyz

Theme

Data quality

Abstract

Objectives: We aimed to compare various approaches for handling missing vital status and / or follow-up time, by applying them to the estimation of incidence of metachronous contralateral breast cancer (CBC).

Methods: For 1980-2016, incidence of metachronous CBC with follow-up through 2024 was estimated using Poisson regression with overdispersion, by age at incidence, year of diagnosis, histology and follow-up period. Missing follow-up time was ignored in the naive approach, simulated once using the average hazard derived from published Swiss cancer registry data, or multiply imputed using 3 different imputation models.

Results: 24,612 women aged 20-84 had unilateral breast cancer between 1980 and 2016 in the Swiss cantons of Zurich and Zug. Of those, 5% (n=1264) were lost to follow-up or had last follow-up more than 3 years ago. Over 291463 person-years, 1145 contralateral breast malignancies were diagnosed, corresponding to 393 per 100000 person-years (95% CI 353 to 438). Incidence rates decrease slightly with age, and have been decreasing over time to 238 (171 to 333) for the incidence period 2010-2016. The same overall pattern was observed regardless of how we handled missing follow-up times. However, using a single imputation generally produced lower incidence rates compared to the naive approach, with multiple imputation giving higher estimates. The most complex multiple imputation model gave incidence estimates that were within 10 units of those from the naive approach.

Conclusions: CBC incidence has declined in recent decades, likely due to increased use of hormone therapies. Younger patients continue to have a slightly higher risk of CBC than older patients. Different methods to handle missing follow-up times yielded similar results. Compared with the naive approach which excludes subjects, and single imputation which gives overall lower incidence estimates, multiple imputation is likely an appropriate method to handle missing follow-up data.

Title **Code** 19

CAUSE SPECIFIC MORTALITY WITHIN THE FIRST YEARS OF FOLLOW-UP AFTER DIAGNOSIS OF CANCER

Authors Names

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Theme

Epidemiological clinical use of cancer registry data

Abstract

Introduction: Colorectal cancer (CRC) is the most common malignant neoplasm of the gastrointestinal tract and ranks among the five most frequent causes of incidence in both men and women worldwide. In Brazil, it is the third most common cancer, with an estimated 45,630 new cases for 2024. The lifetime risk of developing CRC is estimated to be around 5%, significantly increasing with age.

Objective: To estimate the incidence of CRC (C18-C21) by sex and age group for the years 2030, 2035, and 2040.

Method: The incidence CRC was estimated using similar methodology to that employed in the estimation calculations by Globocan. The method was based on the incidence-to-mortality ratio (I/M), applied to the crude mortality rates estimated by linear regression for the years 2030, 2035, and 2040. The estimates were calculated for Brazil and its Regions, by sex and age group (up to 49 years and over 50 years).

Results: In Brazil, CRC is projected to increase around 21% in the number of new cases between 2030 and 2040, rising from 58,830 to 71,050 cases. More than 90% of cases occur in individuals over 50 years old, while incidents in those under this age group are expected to remain stable.

Conclusion: Preventive strategies, such as changes in modifiable risk factors and early detection of precancerous lesions, have proven effective in reducing both mortality and incidence of the disease. The implementation of screening strategies adapted to the aging Brazilian population is crucial to reducing the impact of CRC in the coming decades. Additionally, prevention through healthy habits and early detection should be fundamental pillars in the fight against CRC, contributing to the improvement of public health in Brazil.

Title

Code 22

RISK OF METASTATIC RECURRENCE IN ITALIAN WOMEN WITH BREAST CANCER USING POPULATION-BASED DATA: A MODELLING APPROACH

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Theme

Cure and care

Abstract

Objectives: Information on cancer progression and recurrence is not routinely collected by cancer registries. This study aims to estimate the risk of metastatic recurrence (MR) for Italian women with early-stage breast cancer (BC).

Methods: Women diagnosed with stage I-III BC in 1997–2017 were selected from 7 population-based Italian cancer registries. We used a novel modelling method recently developed for SEER registries, based on an illness–death process coupled with a mixture cure model for relative survival after cancer. MR risk was estimated by combining registry survival data from women with de novo metastatic BC with data from studies reporting survival from recurrent disease. MR risks were calculated according to age and stage of disease, in terms of cumulative risk up to 15 years and conditional on being alive and MR-free after 5 and 10 years.

Results: The analysis included 59,968 women aged 15-74 years, half of them with a Stage I disease. The risk of MR at 15 years decreased from 20.3% in 1997-2006 to 12.3% in 2007-2017. Focusing on the recent period, 2007-2017, MR risk within 15 years was 3.0% for stage I, 16.0% for stage II, and 42.7% for stage III BC. The conditional probabilities of MR decreased with time, in particular women with stage III BC had a MR risk of 31.0% in the first 5 years which became 4.2% between 10 and 15 years since diagnosis. The conditional MR risks for women of all ages with Stage I became less than 2% between year 10 and 15 after diagnosis.

Conclusions. This study provides the first population-based estimate of long-term metastatic recurrence risk for Italian women with BC. Moreover, information on the conditional risks of MR may help personalise follow-up through an informative risk stratification.

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Title **Code** 25

SEMI-AUTOMATED MONITORING OF TRENDS IN INCIDENCE AND STAGE DISTRIBUTION FOR ENHANCED TIMELINESS IN CANCER CONTROL

Authors Names

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Theme

Epidemiological clinical use of cancer registry data

Abstract

Objectives: A central role of cancer registries is to guide cancer control, including monitoring incidence and stage distribution. Timely recognition of deviations from historical trends facilitates proactive exploration of potential underlying factors and possible necessary interventions. We developed a tool for rapidly assessing cancer incidence data for unexpected changes, based on a robust model that flexibly accounts for natural variations.

Methods: We developed a semi-automated method of modelling historical trends in cancer incidence (counts or age-standardized rates) by fitting flexible regression models, excluding the most recent incidence year. Values for the most recent incidence year are extrapolated from the model and compared with observed values. Significant deviations from historical trends are flagged. An automated program fits the model, optimizes the knot points to minimize the Akaike Information Criterion (AIC), and creates graphical outputs for the input set of cancer types by selected subgroups (sex, stage, age, histology, etc.).

Results: The model accurately reproduces trends in age-standardized (ESR2013) incidence rates without overfitting. As short-term deviations in incidence (start of organized screening, COVID) can exaggerate trends, they are manually excluded. Declining trends which plateau in the most recent incidence years proved difficult to model and require careful interpretation. As year-over-year updates are efficient and easily added, semi-automated monitoring of incidence and stage distribution will be performed annually on data from the Belgian Cancer Registry.

Conclusion: We have developed a rapid, semi-automated tool to visualize unexpected observations in cancer epidemiological trends. The tool will be expanded to monitor survival and other epidemiological parameters. This method enables timely identification of deviations from historical trends which may warrant further examination in the context of cancer control.

Title **Code** 39

EVOLUTION OF MICROSATELLITE INSTABILITY TESTING IN COLORECTAL CANCER USING FRENCH DIGESTIVE CANCER REGISTRY DATA

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Theme

Epidemiological clinical use of cancer registry data

Abstract

Objectives: Guidelines for systematic microsatellite instability (MSI) testing in colorectal cancer have emerged in recent years. Besides detection of Lynch syndrome for early detection of other cancer and family screening, MSI is associated with different treatment options depending on cancer stage. The aim of this study was to describe MSI testing frequency in patients with colorectal cancer in a French region in the years leading up to the publication of official guidelines.

Methods: Cases from the Calvados digestive cancer registry were studied between 2019 and 2021. Age, sex, socioeconomic deprivation, tumour location, stage at diagnosis, progression, type of hospital for surgery and for multidisciplinary meetings were collected. These characteristics were compared between cases that underwent testing and those that didn't, and between unstable and stable cases when tested, using descriptive analyses.

Results: A total of 1169 cases were included, of which 60% were tested for MSI. Younger patients (80% of patients under the age of 65 vs 57% of patients over the age of 80) and more advanced stages were more frequently tested (52% stage I vs 70% stage IV). A higher proportion of cases was tested in 2021 than in 2019 and 2020. A higher proportion of colon cancer cases were tested than rectal cancer (75% vs 61%). Of the 816 cases tested, 13.6% had MSI. A higher percentage of colon cancer cases were unstable compared to rectal cancer cases (19% vs. 2%). When the analysis was restricted to the year 2021, 18% of cases remained untested. The only significant differences remaining in 2021 were for location (more frequent for colon than for rectal cancer cases), and for stage at diagnosis (performed less for stage I).

Conclusion: This population-based French study reveals disparities before emergence of official national guidelines and the reduction in these disparities in the most recent years. However, achievement of systematic testing was not yet attained in 2021.

Title

Code 46

CANCER RECURRENCE, PROGRESSION AND TRANSFORMATION– NEW ENCR GUIDELINES FOR POPULATION-BASED CANCER REGISTRIES.

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Theme

New methods innovation and AI applications

Abstract

Objectives: To develop key standardised data for recording cancer recurrence, progression and transformation (RPT) by European population-based cancer registries (PBCRs).

Methods: Experts from 14 European countries worked under direction of European Network of Cancer Registries (ENCR) to define RPT for solid and haematological malignancies and establish standardised variables and coding formats for PCBRs facilitated by a workshop 2023. Final draft recommendations were disseminated to ENCR affiliated PBCRs inviting feedback.

Results: Definitions: Cancer recurrence = cancer return after disease-free period post tumour-reductive treatment (TRT) where the cancer had a complete clinical or microscopic treatment response. Cancer progression = increased disease load post TRT without verified complete therapy response. Transformation = diagnosis of more aggressive morphology following indolent disease. TRT excludes maintenance therapies eg post primary TRT breast cancer hormone therapy. Also active surveillance while a raised prostate-specific antigen requires clinical or other evidence to be considered RPT. Definitions apply to solid tumours with malignant behaviour code 3 and all urothelial and CNS tumours irrespective of tumour behaviour when first diagnosed. The official protocol reviewed by the ENCR Steering Committee is available at https://www.encr.eu.

Conclusions: This fits with ENCR's aims of improving quality, comparability and availability of cancer data and providing guidance to PBCRs to support data use in cancer control, health-care planning and research.Pan-European RPT data, standardised and collected by adequately resourced PBCRs is a key step in quantifying service needs and outcomes of this increasing cancer patients group. Data-driven research opportunities include targeted treatment strategies, genomics and biomarker discovery to support personalised medicine and development of early detection surveillance strategies directed at risk factors for RPT.

Title

Code 48

SURVIVAL AND PREVALENCE OF CANCER IN ADOLESCENTS AND YOUNG ADULTS (AYAS) IN SWITZERLAND

Authors Names

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Theme

Survival

Abstract

Objectives: Adolescent and young adult (AYA, age 15-39 years) cancer survivors face challenges distinguishing them from pediatric and older adult cancer survivors. With improved treatment and survival, their population is growing. We conducted the first nationwide study on AYA cancer survival and prevalence in Switzerland.

Methods: We acquired registry data on cancers diagnosed in Swiss resident AYAs in 1980-2019, vital status information up to Dec. 31, 2019, as well as population data and lifetables. Using Barr's AYA-specific cancer classification system, we calculated net survival using the Pohar-Perme estimator and assessed trends via cohort and period monitoring. We estimated 1-, 5-, and 10-year limited duration and complete prevalence (attained age 15-39 years at closing date).

Results: We included in total 43,599 AYA cancers (1980-2019). Estimated 5-year net survival was lower in males than females in early periods (1995-2004: 83% vs 85%, 2005-2014: 88% vs. 92%), converging to 94% for both sexes in 2015-2019. The greatest improvements in 5-year net survival in 1980-2019 were found for leukemia (from 69% [95% confidence interval 65, 73] to 90% [87, 92]), non-Hodgin lymphoma (from 76% [72, 79] to 94% [92, 96]), gastrointestinal carcinoma (from 55% [51, 59] to 80% [77, 82]) and lung carcinoma (from 32% [25, 39] to 66% [57, 73]). Stomach (56% [47, 65]), liver (56% [38, 70]), pancreas (65% [53, 75]), and lung carcinomas (66% [57, 73]) were among the cancers with the lowest 5-year net survival in 2015-2019. We estimated that 18,205 AYAs with a prior cancer diagnosis (675/100'000 resident AYAs) were living in Switzerland at the end of 2019.

Conclusions: Overall, we found improvements in AYA cancers prognosis similar to other European studies, but 5-year net survival remained low for some carcinomas. The growing number of AYA cancer survivors underscores the need for prevalence estimates, which help healthcare professionals and policy makers to plan follow-up care.

Title **Code** 68

CHILDHOOD TUMOURS AND CONGENITAL ANOMALIES: POSSIBLE ASSOCIATION AND IMPACT ON SURVIVAL

Authors Names

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Theme

Epidemiological clinical use of cancer registry data

Abstract

Objectives: Childhood tumours (CT) are rare but they are a major cause of death in the population under 20 years. Several studies showed an increased risk of CT in children with congenital anomalies (CA). Objectives: 1) To identify the CT risk in children aged less than 20 diagnosed with at least one CA during the first year of life in the period 2007-2020 and residing in the Valencian Region (VR); 2) To identify survival differences in 3 groups: cases with CT and CA, cases with CT and cases with CA.

Methods: The Childhood and Adolescent population-based Cancer Registry (CAPBCR) of VR provided the CT for the period 2007-2020. Children born between 2007 and 2020 with a CT were linked with the CA population-based Registry of VR to identify children with at least one CA diagnosed during the first year of life. Standardized incidence ratio (SIR) and their 95% confidence intervals (CI) were computed to estimate the cancer risk in children with CA, using the CAPBCR rates as standard. The person-years were obtained considering the birth date and the dates of tumour incidence, death or end of study (31/12/2024). Kaplan-Meier analysis was used to estimate the survival function.

Results: A total of 858 children with CT, 11661 with CA, and 59 with CT and CA were obtained. The CT risk was higher among children with CA compared with the reference population (RIE= 5; 95%CI: 4-6), mainly for children with genetic disorders (RIE=20; 95%CI: 12-30). The 5-year survival was lower in the group with CT and CA (76.7%; 95%CI: 63.8-85.5) compared with the CT group (82.4%; 95%CI: 79.7-84.8) and CA group (95.1%; 95%CI: 94.7-95.4).

Conclusions: The results point out a higher risk of CT in children with CA and lower survival in this group compared with the groups with only one of these pathologies. The main limitation was the low number of cases. An European project would improve the statistical power of the results, providing more detailed insight between specific CA types and CT development.

Title **Code** 72

CANCER RADAR – MAPPING CANCER RISK AMONG INDIVIDUALS WITH A MIGRATION BACKGROUND ACROSS EUROPE

Authors Names

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Theme

Social inequalities and cancer

Abstract

Objectives: The WHO Action Plan for Refugee and Migrant Health calls for strengthened migration health governance and data-driven policymaking. However, the lack of systematically collected, comparable health data among migrants remains a critical barrier. About 12% of the European population (87 million) has a migration background, and migrant cancer risk can differ significantly from both their birth and host countries. Cancer RADAR explores the feasibility and methodology to fill this gap by mapping infection-related (liver, stomach, cervical) and screening-detectable (cervical, breast, colorectal, lung) cancer risks among individuals with a migration background across Europe.

Methods: In collaboration with pilot cancer registries, we co-created a protocol to systematically collect cancer data stratified by birth country, a proxy for first-generation migration background. Through a survey we investigated which registries have such data available. Using data from 4 pilot registries, we characterized the cancer risk stratified by migration background.

Results: Cancer data stratified by birth country is available from 44 cancer registries and through data linkage from 8 registries across 20 European countries. Barriers to data collection include time constraints, limited infrastructure, financial resources, and ethical approval requirements for data linkage. Facilitators include contributing to decreasing cancer outcome inequalities and increasing registry visibility. Pilot study data confirm increased infection-related cancer risks, e.g. a 2-4 times higher risk for cervical cancer relative to the host population among women born in high-incidence areas. Colon and breast cancer risk were similar or lower among individuals with a migration background.

Conclusion: This pilot study demonstrates the feasibility of quantifying and monitoring cancer risks among migrants to provide actionable evidence for data-driven policymaking aimed at reducing health inequalities.

Title **Code** 82

INCREASING BURDEN OF HPV-RELATED CANCERS IN ESTONIA

Authors Names

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Theme

Epidemiological clinical use of cancer registry data

Abstract

Objectives: Human papillomavirus (HPV) vaccination in Estonia has been gender-neutral since 2024 (ages 12-14 and catch-up to 18 years), preceded by vaccination of girls aged 12-14 since 2018. Vaccination coverage in 2024 was 54% for girls and 41% for boys. We aimed to estimate recent incidence trends of HPV-related cancers in Estonia to inform policy decisions.

Methods: Estonian Cancer Registry provided data on incidence cases in 1995-2022 for oropharynx (ICD-10 codes C01, C02.4, C05.1-2, C09-10), oral cavity (C02-06, excl. C02.4 and C05.1-2), anus (C21), larynx (C32), vulva (C51), vagina (C52), cervix (C53) and penis (C60). Joinpoint regression was used to model age-standardized (world) trends and calculate annual percentage change (APC).

Results: The study included 11 270 cancer cases, 4413 in men and 6857 in women. The largest number of cases was seen for cancer of cervix (4534, 40%), followed by larynx (1916, 17%), oral cavity (1719, 15%) and oropharynx (1340, 12%). Overall, significant incidence increase was seen for oropharyngeal (APC 4.7) and anal cancer (APC 2.8). Incidence decreased for cervical (APC -5.6 since 2012) and laryngeal cancer (APC -2.1). No change was seen for cancers of oral cavity, penis, vulva and vagina. Differences between men and women were seen for oropharyngeal and anal cancer, where significant increase was limited to women (APC 10.1 and 3.8, respectively), and for laryngeal cancer, where significant decrease was limited to men (APC -2.2). A non-significant increase of 2.9% per year was seen for oropharyngeal cancer in men.

Conclusions: Population-based screening has been effective in reducing cervical cancer incidence in the past decade, but the burden of other HPV-related cancers is rapidly increasing, particularly oropharyngeal cancer in both sexes and anal cancer in women. To address HPV-related challenges, efforts are needed to increase vaccination coverage and implementing catch-up program up to 26 years is strongly recommended.

Title

Code 84

SURVIVAL AFTER CHILDHOOD NEUROBLASTOMA IN MAINLAND FRANCE (2000-2016) – A NATIONAL REGISTRY-BASED STUDY

Authors Names

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Theme

Epidemiological clinical use of cancer registry data

Abstract

Background: Neuroblastoma is the most common extra-cranial solid malignant tumor in children, mainly diagnosed before the age of 5 years. Over the past two decades, advances in assessment of prognostic factors have enabled major improvements in management and survival.

Objective: We aimed to describe survival after childhood neuroblastoma in France taking into account prognostic factors systematically collected by the French National Registry of Childhood Cancer (RNCE).

Methods: The study included all neuroblastoma cases diagnosed in France from 2000 to 2016. Demographic characteristics, diagnostic data and vital status were provided by the RNCE, and relapses data were obtained from the COHOPER cohort, which has been ensuring epidemiological surveillance of RNCE patients since 2000. One-, 5- and 10-year overall survival (OS) were estimated using the Kaplan–Meier method, for all neuroblastomas combined, and by sex, age at diagnosis, period of diagnosis, presence of N-Myc amplification, metastatic stage, and an indicator of local social deprivation. Event-free survival (EFS) was also estimated in the 2012-2016 cases diagnosed, for which relapses became available on an exhaustive basis, with additional analyses by INRGSS stage at diagnosis.

Results: A total of 2412 neuroblastoma cases were diagnosed in 2000-2016, with a median age of 18 months and 47% presenting with metastatic status. OS reached 76% at 5 years and 73% at 10 years with a clear improvement over time and the expected impact of known prognostic factors. In the 2012-2016 subset, 5-year EFS was 71%, but 48 % for cases with N-Myc amplification and 47% for cases with INRGSS stage M.

Conclusion: This study is the first to investigate neuroblastoma stage-dependent survival on a population basis. This work will be continued and take into account more recent molecular data integrated into neuroblastoma risk groups. These elements will also help in the long-term evaluation of patient management.

Title **Code** 89

STAGE SHIFT IN CERVICAL CANCER: COVID OR FIGO?

Authors Names

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Theme

Epidemiological clinical use of cancer registry data

Abstract

Objectives: Cervical cancer is the fourth most common malignancy in women globally and surveillance of stage at diagnosis has an important role in evaluating the effectiveness of preventive interventions. The COVID-19 pandemic was associated with disruption in cancer diagnostic services that might have caused stage-shift but the simultaneous introduction of the FIGO 2018 stage in 2020 may have confounded any observed stage changes. Our aim was to describe cervical cancer stage during the pandemic and consider any confounding effect of stage re-classification.

Method: Scottish Cancer Registry (SCR) cervical cancer (ICD-10 C53) incidence data for the period 2014-2022 was supplemented by West of Scotland Cancer Network (WoSCAN) internal cervical cancer audit data for Oct 2014-Sept 2019. This audit data reclassified older incidences of cervical cancer using FIGO 2018 stage. Linking to the SCR then allowed us to directly compare FIGO trends over a seven-year period. We also calculated EASR age-adjusted expected incidence rates per 100,000 population* of each cancer stage using data from 2010-2019 and compared these to actual EASR age-adjusted incidence rates of stage III cervical cancer, excluding those diagnosed as IIIC.

Results: Early stage (I & II) cervical cancer incidence dropped from 71% in 2019 to 52% in 2020, yet stage III incidence rose from 5% to 23%. However, actual EASR-age adjusted incidence rates of stage III were lower than expected when we accounted for stage IIIC (actual 0.47 vs expected 1.13 in 2020). WoSCAN data suggest the majority of reclassified stage IIIC cancers were previously classified as stage IB (16%) or stage IIB (54%) using FIGO 2014.

Conclusions: Our findings suggest that the increase in stage III in 2020 is likely due to the reclassification of cervical tumour stage in FIGO 2018. This could also explain some of the decrease in incidences of stages I & II.

*calculated using Poisson regression: cases~stage+agegroup+offset(log(population))

Title

Code 90

LEVERAGING GENERATIVE AI FOR SURVIVAL ANALYSIS ON SYNTHETIC BREAST CANCER DATA FROM EUROPEAN CANCER REGISTRIES

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Theme

Survival

Abstract

Objectives: This study aims to explore the use of generative AI algorithms for survival prediction using European cancer registry data, focusing on synthetic breast cancer patient data that mimics those of the Netherlands Cancer Registry. Specifically, we target improvement in long-term survival analysis through fine-tuning of large language models (LLMs).

Methods: We used a synthetic dataset of 60,000 breast cancer patients. Initial steps included feature engineering and data imputation to prepare our dataset. We began our model trials with traditional methods e.g. penalized Cox Regression, Decision Trees, Random Forests, and Gradient Boosting. Subsequently, we fine-tuned a series of diverse LLMs encompassing encoder-only, decoder-only, and encoder-decoder architectures.

Results: The application of LLMs is showing promising capabilities for the complex task of survival analysis. Although the LLMs are facing challenges in providing top performance, further fine-tuning has improved their evaluation metrics, demonstrating potential for reasoning and adaptability in this context. Our findings suggest that LLM-based approaches have potentials to handle survival analysis tasks, providing insights into time-to-event predictions.

Conclusions: This work indicates that LLMs, particularly when fine-tuned, could contribute to survival prediction tasks in medical research. Fine-tuning of the LLMs involves adapting the models to the specific task of survival analysis through a combination of prompt engineering, which involves designing task-specific prompts to efficiently guide the model's focus and responses, and iterative training on the synthetic dataset to refine the model's parameters for improved accuracy and relevance in time-to-event predictions. Our future plans include deploying the most effective LLM models to a sample of patients data from hospital partners, offering valuable insights into the utility and limitations of synthetic datasets in survival modelling.

Title

Code 98

TRENDS IN CHILDHOOD CANCER INCIDENCE AND MORTALITY RATES: 60TH YEARS OF EXPERIENCE IN CALI, COLOMBIA

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Theme

Epidemiological clinical use of cancer registry data

Abstract

Background: Despite being a curable disease in more than 80% of cases, childhood cancer is one of the main causes of mortality in children >1 year. Changes in incidence and mortality rates vary significantly among regions and populations. Reliably epidemiological data is necessary to design cancer control plans and strategies to reduce burden of disease. We describe the trend changes for childhood cancer incidence and mortality rates in Cali.

Methods: We analyzed Cali Population-Based Cancer Registry data for children <15year-old with cancer, period 1962-2020. We obtained Cali’s population at risk by sex and age group for each calendar year. Tumors were classified as per the International Classification of Diseases for Oncology (Third edition). We estimated the incidence (2001-2020) and mortality (2004-2023) rates per million person-years. Annual percentage changes (APC) were calculated using NCI’s Joinpoint Regression, used as indicator of the trend changes for incidence rates (ASR-I) and mortality (ASR-M), and age-standardized by direct method.

Results: We identified 1,718 incident cases of cancer, 57.3% n=923 in males and 37.9% n=652 in children <5 years. The ASR-I and ASR-M were 167.3 and 48.5, respectively. ASR-I increased 1.2% annually (95% CI:1.0,1.5), for men 1.1% (95% CI:0.8,1.5) and women 1.3% (95% CI:0.9;1.7), for leukemias 1.3% (95% CI:0.8; 1.7) and CNS tumors 1.4% (95% CI:0.7; 2.2). Between 1984-2020 the ASR-M decreased annually -1.7% (95% CI: -2.3, -1.1), men -1.6% (95% CI: -2.3, -0.8) and women -2.0% (95% CI: -2.8, -1.2). This trend was concentrated in leukemias -2.3% (95%CI: -3.3; -1.4), mainly in women -2.6% (95%CI: -4.0; -1.3).

Conclusions: Our findings revealed an overall increase in cancer incidence rates and decline in cancer mortality rates in childhood cancer over time. Behavior that can be attributed to better outcomes in leukemias due to infrastructure and health-care improvements.

Title **Code** 99

ASSESSMENT OF WHO'S INTERNATIONAL CLASSIFICATION OF HEALTH INTERVENTIONS AS A STANDARD FOR CANCER REGISTRY PROCEDURES.

Authors Names

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Theme

Data quality

Abstract

Objectives: The Netherlands Comprehensive Cancer Organisation (IKNL) currently utilises an internal coding system for diagnostic and therapeutic procedures in the Netherlands Cancer Registry (NCR), which limits international comparability due to the absence of an international standard. This study assessed the feasibility and consequences of adopting the WHO's International Classification of Health Interventions (ICHI) for NCR procedures, aiming to evaluate the impact on relevant teams within IKNL including the effects on research.

Methods: A multi disciplinary working group manually mapped 172 randomly selected recent NCR procedures for breast, lung, and colorectal cancer to ICHI codes. The mappings were reviewed by researchers from relevant research teams. Feedback from data registers, data warehouse engineers, data analysts and epidemiologists was gathered to assess the impact of either mapping NCR procedures to ICHI (Option 1) or fully replacing current coding with ICHI concepts (Option 2).

Results: Exact ICHI matches were found for 11% of procedures. More general ICHI codes had to be used for 51%, leading to a loss of granularity, while 6% required incorrect mapping to a more specific ICHI code. Additionally, 19% had a best match with an ICHI code that was more specific than the NCR procedure in some aspects and more general in others, and 13% had no suitable ICHI mapping. Stakeholders expressed concerns about significant information loss, particularly in surgical and radiotherapy procedures, and the loss of distinction between treatments for primary tumors and metastases.

Conclusion: Setting aside ICHI's current Beta-release status, its limited granularity makes fully replacing NCR codes by ICHI codes inadvisable due to the loss of critical detail for research. Instead, a mapping approach to ICHI is preferable, provided that ICHI is the standard that can enhance international comparability after its official release.

Title

Code 101

IMPACT OF CANCER DIAGNOSIS ON EMPLOYMENT IN AUSTRIA

Authors Names

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Theme

Social inequalities and cancer

Abstract

Objectives: This study aims to assess the impact of a cancer diagnosis on employment trajectories of affected individuals in Austria. For the first time, national-level data were used to examine how cancer influences labour market participation. In addition, the study explores the potential of linking different national registries in order to clarify questions relevant to health policy.

Methods: Data from the Austrian National Cancer Registry were linked with employment data, mortality statistics, and data from the Educational Attainment Registry, all held by Statistics Austria. The study population included people aged 15 to 64, diagnosed with cancer, employed at the time of diagnosis and alive five years after diagnosis. In addition to descriptive statistics, a multivariable analysis of influencing factors on employment after cancer was performed and compared to the total population.

Results: Our data show that 40% of people developing cancer in Austria are between the 15 and 65 (15,100). 8,500 of them are diagnosed while working – however, after 2 years, a quarter of these people (although having survived their diagnosis for ,â•5 years) are no longer working. The greatest disruption of working life occurs in patients over the age of 55 and in young patients at the start of their career. A low level of education is an additional risk factor, as well as the type and stage of cancer.
Conclusions: Our study emphasises the impact of a cancer diagnosis on employment. It reveals high rates of early retirement among older patients and a drop in employment in young patients. The findings highlight the need for measures to support cancer survivors' return to work. In summary, this study shows that by linking data from cancer statistics with other (registry) data, new and care-relevant findings can be obtained for Austria. Future research should focus on identifying further risk factors and evaluating existing policies to improve employment outcomes for cancer patients.

Title **Code** 113

ESTABLISHING A CANCER REGISTRY IN HUILA, ANGOLA: INITIAL RESULTS (2022-2023) AND CHALLENGES

Authors Names

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Theme

Results from new cancer registries

Abstract

Results: Huila's AAIRs were 43.9/100,000 in men and 43.3/100,000 in women, derived from 1,582 cases. The median age at diagnosis was 47 years, substantially younger than in Western populations (66+ years). In men, the highest incidence rates were observed for prostate (13.2/100,000), liver (3.5/100,000), oral (2.8/100,000), oesophageal (2.6/100,000), bladder (1.8/100,000), brain (1.8/100,000), and colorectal cancers (1.8/100,000). In women, cervical (6.5/100,000) and breast (5.8/100,000) cancers were predominant, followed by bladder (2.0/100,000), liver (1.9/100,000), colorectal (1.8/100,000), and uterine cancers (1.8/100,000). Notably, brain cancer incidence showed an unexpected pattern: a peak in childhood (5-9 years), declining in youth, and increasing from age 25 onwards. While incidence rates were similar between sexes, men demonstrated higher rates at advanced ages (75+ years). However, only 5.9% of these cases had verified morphology.

Limitations: The registry's coverage is restricted to four provincial hospitals, likely resulting in case underreporting. Limited healthcare access affects incidence reporting, and the absence of comprehensive mortality data hampers a complete cancer burden assessment. Low microscopic verification rates raise diagnostic reliability concerns, particularly for brain tumours

Unresolved Questions: The unexpectedly high brain and CNS cancer rates warrant further investigation, just like the mechanisms behind the younger median age at diagnosis and the cancer burden once access barriers are addressed.

Conclusions: The lower AAIRs in Huíla likely reflect healthcare access limitations and reduced screening rather than lower disease prevalence. The younger median age at diagnosis probably correlates with the populations demographic structure. Future priorities should include improving pathology services, strengthening mortality data collection, expanding registry coverage and implementing rigorous quality control measures.

Title

Code 115

UPDATE ON THE ALGERIAN NETWORK OF CANCER REGISTRIES. ASSESSING CANCER INCIDENCE AND MORTALITY NATIONWIDE, IN 2022

Authors Names

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Theme

Results from new cancer registries

Abstract

Introduction: The first population-based cancer registries were implemented in Algeria in the mid-1980s. Since then, registry coverage of the population has continuously increased, to reach 97% in 2022. We present estimates of cancer incidence, mortality, and geographical disparities, based on data from the Algerian Network of Cancer Registries (ANCR).

Materials and Methods: Cancer data are collected in an active mode nationwide. The incidence date is defined according to the algorithm of the European Network of Cancer Registries, and the International Classification of Diseases for Oncology (ICD-O-3) is used to define morphology. Data entry, validation and analysis are carried out using CanReg5 software from the International Agency for Research on Cancer. Standardized incidence and mortality rates, expressed per 100,000 are presented.

Results: In 2022, 51,091 new cancer cases were recorded. The male-to-female sex-ratio was 0.78. The SIR was 130.6 in men and 152.2 in women. The most common cancer sites in men were lung (19.5), rectum (18.2), and prostate (15.5), and in women, breast (61.9), rectum (15.9), thyroid (7.9). In 2022, 37,778 cancer deaths were recorded, giving a standardized mortality rate of 77.7 (82.7 in men and 73.1 in women). The three leading causes of cancer deaths in men were lung, colorectal and bladder cancer, and in women, breast, colorectal and cervical cancer. Geographical disparities were observed, with the highest SIRs observed in the East region, and the lowest SIRs observed in the West region, with the exception of lung and cervical cancers, with the highest SIRs were observed in the West of the country.

Discussion: The ANCR has provided a better understanding of cancer morbidity, mortality, and geographical disparities in Algeria. Cancer data accumulated over several years provide opportunities for descriptive, analytical and evaluative epidemiological research.

Title **Code** 133

FORECASTING LUNG CANCER INCIDENCE IN SLOVENIA: AGE-PERIOD-COHORT ANALYSIS WITH SMOKING DATA

Authors Names

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Theme

Epidemiological clinical use of cancer registry data

Abstract

Objectives: Lung cancer remains the leading cause of cancer-related mortality worldwide. With smoking as its primary risk factor, incidence patterns are historically shifting due to changes in smoking habits across populations. Screening programs are being explored for the population of heavy smokers. This study aims to predict lung cancer incidence in Slovenia over the next 20 years.

Methods: We analyzed lung cancer incidence data from 1961 to 2020 from the Slovenian Cancer Registry, combining it with population projections from the Slovenian statistical office. Smoking data were obtained from national surveys (Social Sciences Data Archive and National Institute of Public Health). Age-Period-Cohort generalised linear models were used to estimate the relative risks of age, period and birth cohort associated with lung cancer incidence. Generalized additive model with penalized cubic splines and restricted maximum likelihood estimation to forecast future incidence, incorporating smoking prevalence and intensity as covariates.

Results: Historically, men have had higher lung cancer incidence, though rates have stabilized, while incidence among women has been rising sharply, the most in the 1960s cohorts. The highest incidence is today observed in ages 60–69 in both sexes. Forecasts indicate a decline in incidence for men aged 60–79 and an increase in older men. Lung cancer incidence in women is projected to increase considerably, particularly in those aged 70–89 (cohorts of 1950s and 1960s). Currently proposed screening guidelines, targeting heavy smokers aged 50–75, may fail to detect a proportion of future cases. Expanding eligibility to ages 60–84 in men and 65–89 in women would improve case coverage from 60.3% in men and 50.3% in women to 86.0% and 85.0%, respectively.

Conclusions: Lung cancer incidence projections indicate shifting trends in future incidence rates. Future screening programs may require adjustments to enable early detection in older women.

Title **Code** 135

LINKING POPULATION-BASED AND NATIONAL CLINICAL PEDIATRIC CANCER REGISTRIES ON NEUROBLASTOMA: THE BENCHISTA-ITA PROJECT.

Authors Names

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Theme

Data quality

Abstract

Objectives: Childhood cancers (CC) are rare but often treatable, but survival rates vary across Europe with poorer outcomes in eastern countries. This project aims to promote the use of the Toronto guidelines by population-based cancer registries (PBCR) to standardize clinical data collection. In Italy, regional cancer registries ensure data quality, while national clinical registries centralize pediatric cancer data. The BENCHISTA-ITA project links PBCRs with hospital registries to enhance data completeness. This study presents the results of linking BENCHISTA-ITA neuroblastoma cases with the Italian Neuroblastoma Registry (RINB) as a pilot study.

Methods: The linkage process involved probabilistic matching using R software, considering variables such as sex, year of birth, and residence at diagnosis. The study included 294 neuroblastoma cases from BENCHISTA-ITA and 578 from RINB, diagnosed between 2013 and 2017.

Results: Results showed that 272 of 294 BENCHISTA-ITA cases matched with RINB cases, improving the completeness of clinical variables such as stage at diagnosis, N-Myc amplification, and relapse information. The linkage increased stage completeness from 81% to 99%, N-Myc from 47% to 85%, and relapse information from 68% to 71%. Additionally, RINB's follow-up completeness improved from 59% to 99%.

Conclusions: This linkage demonstrates the potential to enrich both databases, improving data quality and harmonization of cancer indicators. The study highlights the importance of collaboration between PBCRs and clinical registries to ensure comprehensive data collection and enhance pediatric cancer care in Italy. Future efforts will focus on expanding the linkage to other national hospital and clinical registries.

Title

Code 136

QUALITY INDICATORS FOR PROSTATE CANCER CARE. A POPULATION-BASED STUDY IN SOUTHERN SWITZERLAND.

Authors Names

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Theme

Cure and care

Abstract

Objectives: Quality indicators (QI) studies using data of cancer registries evaluate and compare the quality of cancer care at the population-based level giving a real description without selection bias. In September 2020 an update of the ESMO Clinical Practice Guidelines for prostate cancer (PC) was issued. Aim of the study is to compute selected QI of PC for the period 2021-2023 in comparison with results of a previous analysis (2011-2013).

Methods: All patients resident in canton Ticino, southern Switzerland, with a diagnosis of PC during 2021-2023 are included in the study. QI are computed for cases with available information as proportion with corresponding 95% confidence interval. PC are stratified in localized (N0, M0), locally advanced (N1) and metastatic (M1). Moreover, the localized PC are stratified into the D'Amico classification: low, intermediate and high risk. The following treatment modalities are considered: active surveillance (AS), radical prostatectomy (RP)¬±pelvic lymphadenectomy, radiotherapy (RT), hormonal therapy (HT) and combined RT+HT. To evaluate the surgical resection margins, the subgroup pT3NxM0 is selected.

Results: A total of 1202 PC are diagnosed in the period 2021-2023, 1128 are eligible and with available information needed to compute QI. Of the 165 low risk PC, 144 undergo AS (87.3%; in 2011-2013: 46.5%). Of the 269 high risk PC, 222 undergo RP or RT (82.5%; in 2011-2013: 69.2%). Of the 124 patients with high risk PC undergoing RT, 114 benefit of neo-adjuvant HT (92.0%; in 2011-2013: 88.0%). Considering the 140 pT3NxM0 PC, 86 are operated with free margin (61.4%; in 2011-2013: 41.2%). Of the 117 M1 PC, 91 undergo immediate (within 3 months from the diagnosis) HT (77.8%; in 2011-2013: 73.5%).

Conclusions: The results are encouraging. Comparison with the previous period 2011-2013 shows increasingly better adherence to the ESMO guidelines giving a positive picture of the local health care system.

Title

Code 140

UPDATED INDICATORS OF CANCER CURE IN EUROPE BY GEOGRAPHICAL AREA AND STAGE: RESULTS FROM THE EUROCARE-6 STUDY

Authors Names

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Theme

Cure and care

Abstract

Objectives: Cancer cure indicators are increasingly needed to support evidence-based policies on long-term survivorship and quality of life. We aim to provide updated cure estimates for Europe and to investigate their variations over time as well as by geographical area and cancer stage.

Methods: We selected data on cancer patients diagnosed in 1993-2014 and followed up to 2014 from 51 cancer registries (CRs) participating in the EUROCARE-6 study and representing 22 European countries. We used Weibull mixed cure models to estimate cure fraction (CF) and time to cure (TTC) by cancer type, sex, age and year at diagnosis, and geographical area. We applied the same models to a subset of CRs that provided information on cancer stage for at least 65% of cases.

Results: CF in 2020 varied considerably by cancer, being lowest for lung cancer (14% and 10% among women and men respectively) and highest for skin melanoma (89% and 83%). CF decreased with age and greatly increased between 1990 and 2020 for all cancer types. CF was generally highest in Northern, Southern and Central Europe (for instance, 78%-81% for breast cancer), intermediate in UK and Ireland (72%), and lowest in Eastern Europe (66%). In 2020 CF for breast cancer in the European pool was 99%, 81%, 41% and <2% for stages I to IV and increased considerably over time for stages I-III (in particular for stage III), while remained stable for stage IV. TTC in 2020 also varied considerably by cancer type and generally increased with age. TTC variations by year of diagnosis, geographical area, and stage strongly depend on cancer type.

Conclusions: Estimated cure indicators in Europe show a significant improvement over time, with important differences by both geographical area and cancer stage. These results highlight the need to release up to date population-based information on stage and area-specific cancer cure indicators to better support survivorship care planning.

Title **Code** 141

COMMUNICATING EPIDEMIOLOGICAL RESEARCH ON ENVIRONMENTAL CANCER RISKS: LESSONS FROM SLOVENIAN CANCER REGISTRY

Authors Names

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Theme

Environmental and occupational exposure and cancer

Abstract

Objectives: Epidemiological studies on environmental cancer risks often raise public interest, especially in communities with higher cancer risk. Cancer registries play a key role in data collection, analysis and dissemination. This review examines Slovenian communication strategies for presenting research findings on suspected environmental cancer clusters, highlighting challenges and lessons learned.

Methods: We used a qualitative analysis to assess the communication strategies used in the Slovenian Cancer Registry (SCR) studies in two environmentally burdened areas. The methodology included reviewing communication materials, media coverage, and public event facilitation, focusing on stakeholder and key message design. We examined how early media outreach, stakeholder analysis and pre-defined positions influenced outcomes.

Results: The SCR conducted study in Rafçe, where concerns arose about a glyphosate factory, and in Anhovo, where a cancer burden study addressed public fears about a former cement factory producing asbestos-related products converted into a cement factory with waste co-incineration. Both required public presentation of the results.
A proactive communication strategy helped manage expectations, reduce misinformation and ensure transparency and trust. Media reports reflected our key messages. Minimal follow-up inquiries indicated that concerns were largely addressed. However, recent Anhovo 2025 study poses a challenge due to a planned limited public presentation and numerous research partners.

Conclusions: Cancer registries should develop clear guidelines for the dissemination of study results, striking a balance between scientific accuracy and simplicity aimed at general public. The cases of Rafçe and Anhovo show that strategic planning, early stakeholder engagement, and clear messaging build trust and ensure consistent communication. Lessons from Slovenia can contribute to best practices for communicating cancer registry data in similar settings.

Title **Code** 142

BREAST CANCER SURVIVAL BY SUBTYPE, STAGE AT DIAGNOSIS AND SOCIOECONOMIC STATUS AMONG YOUNG WOMEN IN MADRID, SPAIN

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Theme

Survival

Abstract

Objective: The aim of this study was to determine 5-years survival rates of breast cancer diagnosed in young adult women (20-49 years) in 2018 by grade, molecular subtype, stage at diagnosis and socioeconomic deprivation.

Methods: Invasive breast cancer cases diagnosed in young adult women (20-49 years) in 2018 in Madrid were extracted from the Population-Based Cancer Registry of the Community of Madrid. Descriptive analyses were performed for sociodemographic and tumour characteristics. For survival analysis, observed survival rates (OS) were calculated using the Kaplan–Meier method, and net survival and age-standardized net survival rates using the Pohar Perme estimator. These were calculated at 1, 3, and 5 years, both globally and stratified by grade, molecular subtype, stage at diagnosis and deprivation quartile. Flexible parametric models were adjusted to determine differences in the instantaneous death risk between molecular subtypes.

Results: In 2018, 1,049 new cases of invasive breast cancer were registered among 1,432,392 women. Half of the patients were aged 45-49 years. Grade II, Luminal B subtype and early stages diagnosis were the most common characteristics. The global 5-year OS was 95%. Stratified survival analysis showed that grade III tumours [90.5% (95% CI: 86.0-93.7)], triple negative subtype [85.4% (95% CI: 77.0-91.0)] and stage IV at diagnosis [53.8% (95% CI: 37.2-67.9)] showed the lowest survival rates. Incidence rates were highest among least deprived women, with no differences in survival observed across deprivation quartiles. Women with triple negative tumours had a 6.45 times higher death risk than those with Luminal A tumours ($p<0.01$).

Conclusions: Although young women with breast cancer have excellent prognoses, there are differences in survival rates by molecular subtype and stage. This study offers comprehensive epidemiological data on breast cancer characteristics and survival in young women in the Community of Madrid.

Title

Code 144

TIME TO CURE AND FOLLOW-UP RECOMMENDATIONS IN BREAST AND COLORECTAL CANCER IN TARRAGONA, SPAIN

Authors Names

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Theme

Cure and care

Abstract

Objectives: Clinical practice guidelines (CPG) present recommendations on the follow-up of cancer patients, but it is unclear whether these recommendations are aligned with time to cure (TTC) for each cancer type. Objectives: to estimate the TTC of breast and colorectal cancer patients and to compare it with the follow-up recommendations of the regional/national and European guidelines, in Tarragona province, Catalonia, Spain

Methods: Breast and colorectal cancer cases from Tarragona Cancer Registry (TCR), diagnosis period 2000-2009. For each tumor type and TNM stage, a cure model to obtain TTC was applied using methodology from Dal Maso et al. European Society of Oncology (ESMO), Spanish Society of Oncology (SEOM) and Catalan Institute of Oncology (ICO) GPC were reviewed to obtain follow-up times and the source of the evidence

Results: Breast cancer: TTC 11.0 years. By stages: Stage I undetermined, II 7.3 years, III 16.2 years and IV >20 years. CPG: ESMO visits every 3-6 months until 5 years and annually thereafter. Source of evidence: not indicate. SEOM visits every 3-6 months until 5 years and annually thereafter. Source of evidence: clinical trials. ICO visits every 3-6 months until 5 years and annually thereafter. Source of evidence: not indicate. Colorectal cancer: TTC 7.6 years. By stages: I 10.1 years, II 6.7 years, III 7.5 years, IV 8.3 years. CPG: ESMO visits every 3-6 months for 3 years and every 6-12 months at years 4 and 5 after surgery. Source of evidence: clinical trials. SEOM follow-up was stopped at 8th year. Source of evidence: not indicate. ICO visits until 5 years. Source of evidence: not indicate

Conclusions: CPG follow-up recommendations were not fully aligned with TTC estimated in Tarragona province, especially in colorectal cancer, where most of recommendations stopped follow-up at 5 years while TTC was achieved more than 7 years after diagnosis. GPCs should have population-based data as source of evidence for their follow-up recommendations

Title **Code** 151

PRE-EXISTING ANXIETY/DEPRESSION OR PAINFUL CONDITIONS, IMAGING INVESTIGATIONS AND EMERGENCY LUNG CANCER DIAGNOSIS RISK

Authors Names

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Theme

Epidemiological clinical use of cancer registry data

Abstract

Objectives: Pre-existing Anxiety/Depression and Painful Conditions may influence decisions on investigations in symptomatic patients with as-yet undiagnosed lung cancer and the risk of cancer diagnosis following emergency presentation (EP). We examined if onset and duration of Anxiety/Depression and Painful Conditions may be associated with subsequent investigations and EP.

Methods: England cancer registration data was used to identify lung cancers diagnosed 2012-2018. Pre-existing Painful Conditions and Anxiety/Depression, identified from linked primary care records, were categorised as recent-onset (first recorded 12months pre-cancer). Logistic regression models explored associations between Painful Conditions or Anxiety/Depression and EP, adjusting for socio-demographics, symptoms and healthcare factors, including chest-imaging investigations 1-6 months and 7-24 months pre-cancer diagnosis.

Results: Among the 6,650 lung cancer patients, 39% had pre-existing Painful Conditions (27% recent-onset) and 26% Anxiety/Depression (9% recent-onset). Frequency of imaging investigations 1-6 months pre-diagnosis was 60%, 48% and 47% among patients with long-term, recent-onset or no Painful Conditions, respectively, and 50%, 45% and 44% among patients with long-term, recent-onset or no Anxiety/Depression. Recent-onset and long-term Painful Conditions, versus no Painful Conditions, were associated with lower odds of EP: adjusted OR (aOR)=0.59 (95%CI 0.51,0.69) and aOR=0.25 (95%CI 0.20,0.31), respectively. EP was not associated with recent-onset or long-term Anxiety/Depression.

Conclusions: Long-term Painful Conditions might lead to more opportunities during the months pre-cancer to have chest-imaging, possibly explaining the lower likelihood of EP. Further research is needed also on urgent referrals and waiting times for investigation by pre-existing conditions.

Title

Code 167

CANCER SURVIVAL ESTIMATION USING POPULATION-BASED DATA: BIASES AND PITFALLS

Authors Names

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Theme

Survival

Abstract

Objectives: Net survival (NS) measures the survival that would be observed if patients could die for the diagnosed cancer only. Estimators of NS used so far assume that other cause mortality is the same as the one experienced by the general population. However, cancer patients may have a higher risk of dying from other diseases compared to the general population, due to common risk factors or treatments side effects. In this case estimators of NS are biased for non-comparability. We aim to explore the difference between NS estimates and the ratio (RS) between patients' survival and general population life tables, and to contextualise possible biases arising from the assumption of RS as a proxy for cancer-specific survival.

Methods: We compared a set of theoretical values for NS with corresponding RS calculated under various scenarios including different value of relative risk (RR) of non-cancer death for cancer patients compared to general population, age at diagnosis, time since diagnosis, and sex. Differences between NS and RS for three cancers sites with different time patterns for death hazard and different risk factors were also analysed from cure model-based estimates using EUROCARE-6 data.

Results: Observed differences between RS and the true value of NS were larger for longer time since diagnosis, older patients and higher NS. For head and neck cancer, the differences were the smallest for young female patients 5 years after diagnosis (4%) and the highest (32%) for older patients. For colorectal cancer, differences were <7% for all ages, sexes, and times since diagnosis. For breast cancer, differences were 1, RS underestimates NS as RS does not consider the extra risk of dying from other causes. On the opposite, if RR=1 the estimates coincide. Results are not expected to change using Pohar-Perme estimator. RS remains a standard indicator for comparing survival between populations and time periods.

Title **Code** 168

PRIVACY-PRESERVING SELF-SERVICE LINKAGE OF CANCER REGISTRY AND SOCIOECONOMIC DATA IN A SAFE PROCESSING ENVIRONMENT

Authors Names

Siri Larønningen (1); Ørnulf Risnes (2); Rune Gløersen (3); Narasimha Raghavan (1); Sigrid Leithe (1); Gintaras Pikelis (1); Sigbjørn Revheim (2); Vidar N. Klungre (3); Eirik Alvær (2); Eirik B. Stavestrand (2); Jan F. Nygård (1)

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Theme

New methods innovation and AI applications

Abstract

Objectives: The objective of the project is to enable privacy-preserving linkage of cancer registry data with demographic and socioeconomic data from Statistics Norway, using a self-service Safe Processing Environment (SPE) – microdata.no. Linkage is allowed without a data access request, provided that the user works in a pre-approved organization, is authorized for the system, authenticates through a national ID and has signed a user agreement. The system allows the user to analyze individual level data through pre-approved methods, while ensuring anonymity of the data by applying a statistical disclosure control layer (SDC).

Methods: Microdata.no, developed by Sikt and SSB with funding from the Research Council of Norway, has been in use since 2018. A natural expansion of the service was to include health registry data, starting with cancer data. CRN transformed the data to the microdata.no data model and enriched it with metadata and did extensive testing of both the SDC-layer and the utility of the service. An interdisciplinary team in the CRN handled data transformation and metadata, and we established a purple team-method between the organizations with use and misuse cases to rigorously test the SDC-layer. Utility will be tested through hackathons involving different user groups.

Results: We successfully transformed CRN data to the data model and imported data to the safe environment of microdata.no. During the project, three new methods useful for cancer research were implemented: Cox regression, Kaplan-Meier survival curves and Poisson regression. Testing of the SDC-layer has led to new and improved methods of misuse detection and risk mitigation.

Conclusions: Microdata.no is a very promising solution for self-service access to vast amounts of individual level data, on demographics, socioeconomics and health. It has been challenging to ensure acceptable risk concerning anonymity, but the framework developed will be highly useful for future SPE solutions.

Title

Code 171

CHARACTERISTICS OF POST-COLONOSCOPY VERSUS INTERVAL COLORECTAL CANCERS IN PARTICIPANTS OF ORGANIZED FIT SCREENING

Authors Names

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Theme

Screening

Abstract

Objectives: We assessed differences in characteristics between post-colonoscopy colorectal cancers (PCCRC) and interval cancers (IC) in participants of organized screening in Belgium.

Methods: This retrospective cohort study used data from the Belgian Cancer Registry and the different Belgian screening organizations with participation between 2013 and 2020. IC were defined as colorectal cancer within 2 years in FIT-negative individuals and PCCRC as colorectal cancer within 5 years after a negative colonoscopy in FIT-positive individuals. A binomial logistic regression (bidirectional stepwise method) was performed. Odds Ratios (OR) with 95% confidence intervals were calculated for all variables.

Results: A total of 3,189 IC and 1,048 PCCRC were identified and included. PCCRC were more likely in males [OR: 1.47 (95% CI: 1.26–1.71)], and with increasing age [OR: 1.08 (1.06–1.09) per year]. IC were more likely located in the rectum [OR: 0.60 (0.46–0.78)], and diagnosed in stage III [OR: 0.72 (0.55-0.93)] or stage IV [OR: 0.56 (0.41-0.76)] versus stage I. Compared to the first screening round, IC were more likely after the second [OR: 0.54 (0.45-0.65)] or subsequent screening rounds [OR: 0.35 (0.28-0.43)]. Compared to Wallonia, PCCRC were more likely in Flanders [OR: 1.51 (1.20-1.91)] and less in Brussels [OR: 0.51 (0.26-1.00)].

Conclusion: PCCRC and IC differ in key characteristics. The gender difference may be related to poorer FIT performance in females and possibly to differences in health-seeking behavior in case of symptoms. The difference in length of follow-up between groups (i.e. 2 years for IC versus 5 years for PCCRC) may explain the associations with screening round or stage at diagnosis. We will build on these results to further study IC (reflecting FIT performance) and PCCRC (reflecting quality of colonoscopy) in organized screening in Belgium. Establishing a colonoscopy registry would provide valuable additional information to support screening policies.

Title **Code** 172

WORLD-WIDE PATTERNS OF CARE AND TIME TO TREATMENT FOR OVARIAN CANCER – VENUSCANCER

Authors Names

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Theme

Epidemiological clinical use of cancer registry data

Abstract

Objectives: The VENUSCANCER project aims to investigate whether world-wide inequalities in survival for women's cancers are attributable to differences in disease biology between populations, or patterns of care, or socio-economic status. Here, we examine adherence to clinical guidelines and time to treatment for women diagnosed with ovarian cancer world-wide.

Methods: Population-based cancer registries provided data for a single year of incidence in 2015-2018 with complete high-resolution variables (e.g., stage, treatment). We examined the stage distribution by country. We defined guideline-compliant treatment as surgery in early-stage (T1N0M0) disease, and surgery plus chemotherapy in advanced (M1) disease. We estimated the odds of receiving guideline-compliant treatment, controlling for age, separately for high-income (HIC) and low- and middle-income countries (LMIC).

Results: We received anonymised individual records for 17,213 women from 69 registries in 35 countries. T1N0M0 tumours varied both in HIC (15-38%) and in LMIC (4-27%). More than 70% of these women were treated with surgery in most countries. Surgery was rarely offered to elderly women (70-99 years) (OR=0.12; 95%CI 0.07-0.21). Median time to surgery ranged from less than 1 month in Belgium and Norway to over 4 months after diagnosis in Ecuador. M1 tumours ranged 18-66% in HIC and 14-89% in LMIC. Surgery plus chemotherapy was offered to 15-53% of these women in HIC and to 9-68% in LMIC. The age-adjusted odds of receiving guideline-compliant treatment were 40-50% lower in Italy and Ireland than in the US, and 80% lower in Northern Ireland. The odds in elderly women were much lower than in women aged 50-69 years (HIC 0.31, 0.27-0.35; LMIC 0.20, 0.08-0.53).

Conclusions: Most women with early-stage disease received guideline-compliant treatment both in HIC and LMIC. The variability was greater for treatment of advanced disease. These findings highlight the importance of early detection of ovarian cancer

Title **Code** 178

IMPROVING LUNG CANCER RISK ASSESSMENT IN PRIMARY CARE PATIENTS WITH COUGH OR DYSPNOEA USING PRESCRIPTIONS DATA

Authors Names

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Theme

Epidemiological clinical use of cancer registry data

Abstract

Objectives: To quantify the predictive value of new-onset cough or dyspnoea for subsequent lung cancer diagnosis (by age, sex, and smoking status) and whether consideration of recent prescriptions improves lung cancer risk assessment.

Methods: Data for patients aged 30-99 with new-onset cough or dyspnoea (2007-2016) from English linked primary (CPRD Gold), secondary care (HES) and national cancer registry (NCRAS) were analysed. Age and sex-specific Positive Predictive Values (PPVs) of each symptom for lung cancer after 12 months were calculated by smoking status, alongside PPVs for repeat symptoms and concurrent prescriptions (antibiotics, inhalers, oral steroids, opioids).

Results: New-onset dyspnoea (N=309,455; 2.7% women, 4.0% men) was more predictive of as-yet-undetected lung cancer 12 months after presentation than cough (N=823,680; 1.8% women, 2.9% men). Patients presenting with cough or dyspnoea in primary care with a prescription were more likely to have underlying lung cancer than those without. For cough, prescription data identified additional patients exceeding the English 3% referral threshold. For example, in women aged 60-69 with a cough and a prescription for an inhaler, oral steroid or opioid PPVs were higher (3.1-3.3%) than in those with cough alone (1.9%). For dyspnoea, PPVs exceeded 3% in patients aged over 60, so prescription data did not enhance cancer risk assessment. Men over 60 who smoke and presented with cough while receiving a prescription, particularly for antibiotics, oral steroids, or opioids, have the highest PPVs for lung cancer (3.7-5.5%). Patients with cough but no prescriptions had lower PPVs, often falling below England's 3% threshold than those with.

Conclusions: Cancer risk assessment can be improved by adding prescription data, particularly in patients with cough. Considering prescriptions may help identify high-risk patients for investigation and lower-risk patients in primary care who can avoid a referral.

Title

Code 185

THE IMPACT ON NET SURVIVAL ESTIMATES OF DIFFERENT APPROACHES TO MODELLING LIFE TABLES – INSIGHTS FROM CONCORD-4

Authors Names

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Theme

New methods innovation and AI applications

Abstract

Objectives: CONCORD-4 aims to monitor long-term trends in five-year net survival for patients diagnosed during 1990–2022 in over 70 countries world-wide. This includes investigating the impact of the COVID-19 pandemic on short-term stage-specific survival. Appropriate life tables enable robust age-standardised survival estimates that reflect healthcare disruptions and mortality changes that occurred during the pandemic.

Methods: We obtained data on the number of deaths and population by sex, single year of age (or age group) and single calendar year from 144 registries. We propose two approaches to derive age-sex-specific mortality rates, using a flexible Poisson model. In the first approach, we used three calendar year of death and population counts around a central year, so that the resulting life tables would not be susceptible to year-on-year fluctuations in mortality. In the second approach, we used single-year death and population counts to reflect the sharp temporal trends in background mortality during 2019-2022.
We will estimate 1- and 2-year net survival for breast and stomach cancers using the non-parametric Pohar Perme estimator, using the mortality rates obtained with the two approaches.

Results: Preliminary analyses show a more pronounced drop in life expectancy at birth during the COVID-19 years under the second approach. We will present age-standardised net survival estimates for the two cancers for 10 countries participating in CONCORD-4. We will show, for each country, the mean absolute differences in net survival obtained with the different sets of life tables. These comparisons will highlight the sensitivity of net survival estimates to the construction of life tables, particularly when background mortality patterns were atypical.

Conclusions: Our findings underline the importance of selecting appropriate methods to model the life tables used for population-based cancer survival, in the context of unprecedented changes in mortality pattern.

Title **Code** 186

CHILDHOOD AND ADOLESCENT CANCER SURVIVAL 1998-2017. A POPULATION-BASED STUDY FROM THE ITALIAN CANCER REGISTRIES.

Authors Names

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Theme

Survival

Abstract

Objectives: Population-based cancer registries are crucial to monitor health system performance, inform policy makers and allocate resources effectively. We updated Italian survival estimates for children and adolescents, analysing temporal and geographical differences to evaluate improvements.

Methods: Cases were from the Association of Italian Cancer Registries and codified according to the International Classification of Childhood Cancer, 3th edition. Thirty-one cancer registries, covering 77% of the national population aged 0-19 years, provided 9,142 incident cases (2013-2017); 15 cancer registries (28% of the national population aged 0-19 years) contributed data for 12,447 incident cases (1998-2017) for trend analysis. We used the period approach to estimate survival in children (0-14 years) and adolescents (15-19 years) during the period 2013-2017. For cases diagnosed in the period 1998-2017, survival was estimated for four 5-year periods. Survival was estimated by age, sex and geographical area of residence.

Results: Survival improved over time in both children and adolescents (in 15 years from 78% to 84% and from 81% to 90%, respectively). Among children, significant progress was observed for acute myeloid leukaemia, non-Hodgkin lymphomas, ependymomas, Ewing sarcoma, and acute lymphoid leukaemia. For adolescents, notable improvements were found in non-Hodgkin lymphomas and skin melanomas. However, disparities emerged across Italy, with major differences observed for central nervous system neoplasms and osteosarcoma in children, as well as for acute lymphatic leukaemia and soft tissue sarcomas in adolescents.

Conclusions: Survival improved for many tumours in Italian children and adolescents, however some differences emerged across regions. Other studies, such as the BENCHISTA study will help to interprete outcome disparities. Collaboration between clinicians and researchers is essential for complete, up-to-date and increasingly accurate data collection.

Title **Code** 188

ARE PROSTATE CANCER GRADE AND INITIAL PROGNOSIS SOCIALLY PATTERNED? DATA FROM THE TARN CANCER REGISTRY OVER 2006-2021.

Authors Names

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Theme

Social inequalities and cancer

Abstract

Social inequalities in survival has been described in different countries, involving both disparities in cancer incidence, diagnosis and treatment. Fewer data are available regarding the cancer intrinsic prognostic characteristics. Therefore, we propose to test if the distribution of the tumor characteristics is socially patterned. We will leverage from the Tarn cancer registry data for the period between 2006 to 2021 (n=6047). We focused on three markers of initial prognosis: Gleason score, TNM prognosis groups, and having undergoing surgical treatment. Socioeconomic position was approached by an ecological deprivation Index, the French version of the European deprivation index (EDI). In addition, for each year of diagnosis, quintiles of EDI were defined from the EDI scores distribution among the Tarn population of cases diagnosed the same year. For the Gleason score (n=5398), high risk group was more frequent among the higher EDI quintiles. This association was confirmed in multivariable analyses adjusted for age and diagnosis year, with OR ranging from quintile 2=1.03[0.84-1.27] to quintile 5=1.32[1.09-1.63]. For the TNM prognosis index (n=5879), similar pattern was observed with a 12-point gap in the proportion of good prognosis cancer between the extreme EDI quintiles. Multivariable analyses confirmed this, with a poorer prognosis more frequent among higher quintile of EDI (OR quintiles 4 and 5, respectively equal to 1.20[1.01-1.43] and 1.19[1.01-1.142]). This trend of a poorer initial prognosis among the most deprived groups was also observed for having undergoing surgical treatment (n=5602). Multivariable analyses adjusted for age and year of diagnosis showed an inverse gradient of access to surgery with increasing deprivation level, and this pattern persisted after adjustment for TNM prognosis grouping. These results support socially patterned distribution of tumor characteristics and call for assessing the contribution to survival disparities.

Title **Code** 189

COMBINED CANCER DISTRIBUTION BY ANATOMICAL SITE AND SEX IN CAPE VERDE (2022-2023)

Authors Names

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Theme

Results from new cancer registries

Abstract

Population-based cancer registries provide essential data for understanding the cancer burden and planning public health interventions. This study presents the first comprehensive analysis of cancer distribution in Cape Verde, an archipelago nation of the coast of West Africa. To describe the results of the first Population-Based Cancer Registry in Cape Verde for the period 2022-2023.

Methods: Age-standardized incidence rates (ASRs) were calculated using the World Standard Population as a reference. Data from two consecutive years (2022-2023) were combined and analyzed by sex and anatomical site. Both crude incidence rates and ASRs were computed, with the weighted average method applied to account for differences in case numbers between years.

Results: A total of 958 cancer cases were recorded during the study period, with a nearly equal distribution between males (461 cases, 48.1%) and females (497 cases, 51.9%), yielding a male: female ratio of 0.93. The leading cancer types by sex (ASR per 100,000) in males: prostate (40.9), stomach (7.6), esophagus (6.3), oral cavity (5.3), and colon (5.0) and females: breast (29.9), cervical (17.0), ovarian (4.7), colon (3.3), and rectum (2.9). The combined ASR for all cancers was 96.1 per 100,000 population (males: 105.1; females: 94.6).

Conclusions: This first report from Cape Verde's Cancer Registry demonstrates clear sex-specific patterns of cancer distribution. Prostate cancer dominates in males, while breast and cervical cancers predominate in females. These findings highlight the need for targeted prevention strategies, particularly screening programs for prostate, breast, and cervical cancers, alongside strengthening diagnostic capacities for digestive system malignancies. The relatively high burden of infection-related cancers (cervical) and lifestyle-associated cancers (digestive) suggests potential for prevention through public health interventions.

Title **Code** 195

QUALITY INDICATORS OVER TIME OF EUROPEAN CANCER REGISTRIES DATA SUBMITTED TO THE EUROPEAN CANCER INFORMATION SYSTEM

Authors Names

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Theme

Data quality

Abstract

Objectives: Quality indicators are used for assessing quality and comparability of data collected by different cancer registries. To compare the quality of data submitted for the 2022 data call to the European Cancer Information System (ECIS) by 85 cancer registries affiliated to the European Network of Cancer Registries (ENCR), we computed quality indicators and compared them across calendar periods, cancer entities, and age groups.

Methods: The analysis considered the period 2000-2019 and population over 19 years. We calculated the percentage of unknown or missing values on the original submitted datasets and analysed other indicators on the final validated datasets: proportions of cases with death certificate only (DCO), morphological verification (MV) and unspecific morphology (UM). Quality indicators were calculated separately for each registry, disaggregated by four periods (2000-2004, 2005-2009, 2010-2014, and 2015-2019), ECIS cancer entities and three age groups (20-44, 45-69, and 70+).

Results: Missing values for sex were found for 6 registries, with a median of 0.026% in this subset. Missing values for age were found for 8 registries, with a median of 0.005% in this subset. The median proportion of DCO was 1.4%, highest for the age group 70+ (2.4%) and for liver and pancreatic cancers (3.3%). DCO% was highest in 2000-2004 (2.3%) and lowest in 2015-2019 (1.2%). The median proportion of MV was 87.8%, lowest for the age group 70+ (81.2%) and for liver cancer (45.1%). MV% was lowest in 2000-2004 (86.7%) and highest in 2015-2019 (89.4%). The median proportion of UM was 11.7%, highest for age 70+ (18.6%) and for pancreatic cancer (46.6%). UM% was highest in 2000-2004 (12.6%) and lowest in 2015-2019 (10.4%). Results showed high variability across registries.

Conclusions: The quality of data provided by European cancer registries has increased over time. Lowest data quality was observed in older age groups, and for liver and pancreatic cancers.

Title

Code 196

FLEXIBLE PENALIZED RELATIVE MORTALITY MODELS FOR MODELLING UNDER-MORTALITY IN EARLY-STAGE PROSTATE CANCER PATIENTS

Authors Names

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5. Département des Maladies Non-Transmissibles et des Traumatismes, Santé Publique France, Saint-Maurice, France.

Theme

Survival

Abstract

Objectives: In cancer epidemiology, the mortality due to cancer is usually described as an excess mortality λ_E as compared to general population λ_P, assuming the overall mortality λ_O is the sum of the two (λ_O=λ_E+λ_P). The excess mortality is assumed positive, but in some cases, typically prostate early-stage patients, there is actually an "under-mortality" and modelling λ_E is then inappropriate. Another modelling strategy is to describe the relative mortality RM as compared to the general population: RM=λ_O/λ_P. Unfortunately, currently available RM models (also called "multiplicative models') were very constrained and do not allow to study the dynamics of the RM according to time and covariates nor to specify complex effects. The aim of this work is then to i) propose a flexible model for RM and ii) study the RM according to the prostate-specific antigen (PSA) level in prostate cancer and describe which patients have a lower (or an upper) mortality than expected

Methods: We modelled the logarithm of the RM as a function of time since diagnosis and covariates, using penalized splines. Penalization allows flexibility while limiting over-fitting and provides smooth estimates. Non-linear and time-dependent effects and interactions can be specified using multidimensional penalized splines. This model was applied to data from 10,127 prostate cancer patients diagnosed in France (2008- 2015, followed up to 2018), to study the RM according to time, age at diagnosis and PSA level.

Results: Under-mortality is observed for low PSA levels but interestingly with a cut point increasing with age: from 7 ng/ml at age 50 to 20 at age 90. In patients aged 50 years at diagnosis, RM ranges from 0.73 to 12.03 for PSA percentiles 5th to 95th.

Conclusions: The proposed RM model, implemented in the R package survPen, allows to flexibly describe for which covariate value, prostate cancer patients have an under- or over-mortality, providing new insights into this type of data.

Title **Code** 197

THE IMPACT OF HEPATOCELULAR CARCINOMA ETIOLOGIES ON MADEIRA ISLANDS, PORTUGAL

Authors Names

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Theme

Cancer Etiology

Abstract

Objectives: Investigate specific incidences and trends for the main hepatocellular carcinoma (HCC) etiologies: chronic hepatitis C (HCV) and B (HBV) viral infections, alcohol related liver disease (ALD), and metabolic dysfunction–associated steatotic liver disease (MASLD) – on Madeira islands population (250,744 residents).

Methods: Data collected from residents between 2010-2023 diagnosed with liver cancer, registered on the National Cancer Registry database. Etiology completeness was made through medical reports, serological tests, and discharge data using ICD-9 and 10 codes. Age‚Äêstandardized incidence rates (ASIRs; world) and temporal trends by annual percentage change (APC; Joinpoint 5.3).

Results: 240 HCC (81.7% males; median age=66yrs) cases were considered from 319 liver cancers. Liver cancer ASIR was 4.70/100,000 (2010-2023), in line with the values reported by GBD for Portugal (4.12-4.82/100,000). HCC ASIR (6.90/100,000 in men and 0.93/100,000 in women) remained stable over time (APC, p>.05). The most frequent cause of HCC among men was ALD (59.2%; ASIR=4.06/100,000; 95%CI=3.32;4.80), comparable to GDB data for Western Europe (ASIR=3.67/100,000), followed by viral hepatitis (HBV=12.2%, HCV=7.7%, HCV-HBV=8.2%) and MASLD (9.2%). Among women, the most common cause was MASLD (52.3%; ASIR=0.42/100,000), followed by viral hepatitis (HBV=15.9%, HCV=11.4%, HCV-HBV=2.3%) and ALD (9.1%). Over the period studied, ASIR remained stable for all causes, except for HCV where a tendency for an increase was observed for both sexes (APC=8.19%, p=.064).

Conclusions: These modifiable etiologies are public health issues. Therefore, this study contributes to a deeper understanding of liver cancer behavior on Madeira. More efforts are needed to raise awareness of alcohol and metabolic comorbidities related diseases. Low values of viral hepatitis related HCC could be associated with HBV vaccination program – since 1995, and HCV screening ongoing on Madeira.

Title

Code 211

DO WILDFIRES IMPACT THE INCIDENCE OF CANCER? - A PORTUGUESE STUDY

Authors Names

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Theme

Epidemiological clinical use of cancer registry data

Abstract

Objectives: Portugal is one of the most fustigated countries in European by wildfires.
Wildfires are known to emit several pollutants, many of them carcinogenic. Rural areas of the country are more frequently affected and with more intensity, making the inhabitants more exposed to these toxics. This study aimed to assess if wildfire exposure is associated with cancer incidence in Portugal.

Methods: Association between wildfire exposure (2000–2020) and cancer incidence (2010–2020) in 367,741 Portuguese adults (aged 25–90) were assessed through Logistic regression, excluding residents of highly polluted urban areas and wildfires with less than 1 hectare of extension to mitigate confounding. For every individual, wildfire exposure scores were calculated as the 5-year moving average of burned area in a radius of 20 km and categorized into Low, Medium, High and Very High exposure. Low exposure was used as reference.

Results: Preliminary results demonstrated that brain cancer had 46-54% increased risk for higher exposures, as well as oesophagus cancer (27-47%, $p<0.001$). Lung and trachea cancer incidence did not demonstrate a linear trend of association with exposure, probably due to the inability to remove confounding from smoking. Breast cancer, multiple myeloma and leukaemia also revealed some weak association. No association was verified with others cancers

Conclusions: These preliminary findings suggests that exposure to wildfires may increase the risk of site-specific cancers, especially in brain and oesophageal cancers. This study reinforces results from previous studies as well as the urgency to recognize wildfires as a public health issue. Moreover, the use of cancer registry as a major data source for health deciders.

Abstracts

Flash Talks

Title **Code** 17

COMPLETENESS EVALUATION OF ADULT POPULATION-BASED CANCER REGISTRIES. A SYSTEMATIC REVIEW.

Authors Names

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Theme

Data quality

Abstract

Background: Population-based cancer registries are crucial for tracking cancer trends, supporting re-search, guiding policy decisions and ensuring efficient healthcare resources allocation. However, their effectiveness relies heavily on data quality, specifically the completeness of the cancer registration process.

Objectives: This systematic review aims to identify the methods used by adult population-based cancer registries worldwide to assess completeness of their data. It also considered the significant role of high-quality data in method selection and the significant challenges of data handling.

Methods: A comprehensive electronic literature search was conducted across Web of Science, Scopus, and PubMed for studies published from January 2004 to December 2024. The review was written according to PRISMA guidelines, and the risk of bias was assessed using the Joanna Briggs Institute tool.

Results: The review identified 83 studies from 31 countries, the majority from Europe, especially Nordic and Central European countries. Most studies met high-quality standards, with only one study scoring below 75%. Common approaches include independent case ascertainment (the most used), capture-recapture analysis, death certificate-only analysis, and comparisons with historical rates. While independent case ascertainment is valuable when high-quality auxiliary sources are available, its accuracy varies. Other methods, like capture-recapture or Mortality-to-Incidence ratios, may be more accurate or feasible in some cases.

Conclusions: The findings suggest that methods for completeness evaluation vary widely across registries, influenced by data quality and regional practices. The results emphasize the importance of continuous refinement of these assessment methods to improve the reliability and global comparability of cancer registry data.

Title **Code** 18

COVID-19 AND CHANGES IN THE CANCER INCIDENCE RATES IN BADEN-WÜRTTEMBERG (SOUTHWEST GERMANY) IN 2020-2023

Authors Names

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Theme

Epidemiological clinical use of cancer registry data

Abstract

Objectives: Many countries have reported an impact of the COVID-19 pandemic on cancer incidence in 2020. Less is known about the trends in the following years. This study aimed to explore changes in cancer incidence between 2017 and 2023.

Methods: Using data from the Baden-Württemberg Cancer Registry, the age-standardized and age-specific incidence rates of total, colorectal, lung, prostate, and breast cancer in 2015-2023 were investigated by sex. Standardized incidence ratios (SIRs) were used to compare incidence rates from 2020 onwards with the incidence in a reference period (2017-2019) and with expected incidences based on modelled trends between 2015 and 2019.

Results: Age-standardized total cancer incidence in men increased from 701 to 734 per 100.000 between 2015 and 2019 and then decreased significantly to levels between 672.9 and 681.7. This attenuation was present in all age groups except 0-39 years. In women, age-standardized total cancer incidence was overall stable between 2015 and 2019 (535-546) but decreased afterwards (504-524) with significant differences in 2022 and 2023. Age-specific incidence showed a similar pattern than in men. In total, 14,214 (5.5%) cases would be missed in 2020-2023 if cancer incidence rates were expected to remain at the same level as in 2017-2019. If the 2015-2019 trends were to continued, 19,525 (7.6%) cases would be missed. In site-specific analyses, we found significant lower colorectal cancer incidence in women and men from 2020 onwards (SIRs: 0.81-0.90). This difference might be partly explained by the pre-pandemic downward trend, at least for men. No significant differences were observed for lung and prostate cancer. Female breast cancer incidence was only significantly lower in 2020 (SIR: 0.93).

Conclusions: We observed lower than expected cancer incidence rates in all years up to 2023. Further studies disentangling potential causes such as post-pandemic effects, competing risks, and migration are warranted.

Title

Code 23

USE OF MORTALITY TABLES BY LEVEL OF DEPRIVATION IN THE STUDY OF SOCIAL INEQUALITIES IN CANCER SURVIVAL

Authors Names

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Theme

Social inequalities and cancer

Abstract

Background: Previous studies have reported lower net survival probabilities for socioeconomically deprived patients in France using non-deprivation specific lifetables. Not accounting for the social gradient in background mortality could potentially over-estimate the effect of deprivation on net survival. The aim of this study was to estimate the influence of taking into account the social gradient of expected mortality in the general population on the social gradient of survival of people with cancer.

Methods: French cancer registry data was analyzed, with 190,902 incident cases of nineteen cancer sites between 2013 and 2015. Deprivation was measured using the European deprivation index (EDI). Net survival was estimated thanks to additive models with French lifetables stratified on deprivation level with the EDI, using the non-parametric Pohar-perme method and flexible excess hazard modelling with multidimensional penalized splines, firstly with non-specific lifetables then with the deprivation-specific lifetables.

Results: A significant effect of EDI on excess mortality hazard (EMH) remained when using the deprivation-specific lifetables for colorectal, lung cancer and melanoma in both sexes, and oesophagus, bladder, head and neck and liver cancer for men, and breast, cervix and uterine cancer for women. The only site where the effect of EDI on EMH was no longer significant when using deprivation-specific lifetables was prostate cancer.

Conclusions: The use of deprivation-specific lifetables confirms the existence of a social gradient in cancer survival, indicating that these inequalities do not result from inequalities in background mortality. Development of such deprivation-specific lifetables for future years is crucial to understand mechanisms of social inequalities and work towards reducing the social burden.

Title **Code** 26

SURVIVAL IN SYNCHRONOUS OLIGOMETASTATIC AND POLYMETASTATIC NSCLC - A CANCER REGISTRY ANALYSIS

Authors Names

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Theme

Survival

Abstract

Objectives: Oligometastatic disease (OMD) is increasingly recognized as a distinct clinical entity, differing from polymetastatic disease in treatment and prognosis. Existing evidence on OMD is largely based on clinical studies with small sample sizes and with varying definitions of OMD. Population-based studies are needed to improve generalizability and guide treatment decisions. We aim to describe survival of NSCLC patients with stage IV at initial diagnosis in four subgroups defined by metastatic spread.

Methods: Stage IV NSCLC patients (≥18 years, diagnosed 2016–2020, ICD-10 C34) were identified from three population-based German cancer registries covering 27% of the German population. We approximated metastatic spread based on the TNM classification (8th edition) and the number of involved organ systems. First, we defined subgroups by TNM-M categories: M1a (intra-thoracic metastasis), M1b (single extra-thoracic metastasis). Second, we further subclassified M1c as ≤3 vs >3 affected organ systems / generalised metastasis. Clinical characteristics, overall survival (OS) and progression-free survival (PFS) were analysed descriptively and stratified by metastatic extent using Kaplan-Meier estimates.

Results: The cohort included ~8,000 stage IV NSCLC patients with treatment and follow-up data (median follow-up: 7 months, IQR: 3–16). Patients with M1a (n= 1,767), M1b (n=1,314), M1c and ≤3 affected organs (n=4,196) had better OS and PFS than to those with >3 affected organs (n=756). Median OS ranged from 15 months (M1a) to 4 months (M1c/>3 organs), with 2-year survival rates between 33.4% and 11.3%. Median PFS ranged from 8.5 months (M1a) to 4 months (M1c/>3 organs).

Conclusions: It is clinically worth to differentiate patients with limited / oligometastatic and with extensive / polymetastatic spread – as they have different survival prospects. This data source enables further analyses of treatment modalities and the associated long-term outcomes.

Title **Code** 28

TRENDS IN THE FRACTION OF CANCER ATTRIBUTABLE TO AIR POLLUTION IN THE UK AND ITS CONSTITUENT NATIONS, 2003-2023.

Authors Names

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Theme

Epidemiological clinical use of cancer registry data

Abstract

Background and objectives: Cancer remains a major cause of morbidity and mortality in the United Kingdom (UK) and across the world. It is vital to understand the role and extent of theoretically modifiable risk factors to inform public health policy and prevent future cancer cases. The study aimed to estimate the number and proportion of cancer cases attributable to outdoor air pollution in England, Scotland, Wales, Northern Ireland and the UK, in 2003, 2013, and 2023.

Methods: Due to evidence of a causal association with outdoor air pollution, population attributable fractions (PAFs) and number of attributable cases were calculated for lung cancer. The relative risk estimate was sourced from a meta-analysis of cohort studies. Air pollution exposure prevalence for 2010-2023 was obtained from population-weighted annual mean PM2.5 data from the Department for Environment, Food & Rural Affairs. Historical exposure levels were estimated using a linear model based on this data. Cancer incidence data for 2003 and 2013 were extracted from national data releases and projected for 2023 using an age-period-cohort model. PAFs were calculated by age and sex and aggregated to provide national estimates.

Results: The estimated proportion of UK cancer cases attributable to air pollution has decreased over the past two decades, from 13.0% in 2003 to 9.6% in 2023. The estimated proportion of air pollution-attributable cancer cases in 2023 was highest within the UK nations in England.

Conclusions: This is the first study to estimate the burden of cancer attributable to air pollution through time for the UK and its constituent nations. The decrease in PAFs since 2003 is primarily due to falling outdoor air pollution exposure in the UK. Epidemiological analysis like this is dependent on accurate monitoring of exposure to air pollution which should remain a priority for the UK Government and devolved administrations

Title **Code** 30

IMPACT OF THE COVID-19 PANDEMIC ON NORTHERN IRELAND BREAST CANCER PATIENTS' REFERRAL AND TREATMENT PATHWAYS

Authors Names

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Theme

Screening

Abstract

Objectives: Northern Ireland Cancer Registry (NICR) examined the impact of the COVID-19 pandemic on breast cancer (BC) services and outcomes. In 2020 breast screening services were paused for 4 months. We aim to examine the impact of these changes.

Methods: The NICR BC Audit dataset compared BC patients diagnosed in March-December 2018 (PRE-COVID) and March-December 2020 (COVID). Differences in referral route, time to triple assessment, treatment intent and first treatment type were examined using chi-squared tests and t-tests; differences in 3-year observed survival using Kaplan Meir curves and Log-Rank tests.

Results: 2,260 patients were included; 1,205 diagnosed in 2018 and 1,055 in 2020. Referral patterns changed significantly ($p<0.001$), with significantly more via GP [2018 vs 2020: 52.6% vs 59%] and fewer via screening [30.2% in 2018 (n=364) and 26.2% in 2020 (n=276)]. Symptomatic patients in 2020 waited on average 4 extra days for triple assessment diagnostic appointments compared to 2018 [9 days (PRE-COVID) and 13 days (COVID) ($p<0.001$)]. There was no statistically significant impact on treatment intent [89% Curative (PRE-COVID) and 86% Curative (COVID)]. There was a significant increase in hormone therapy as first treatment, from 135 (11%) (PRE-COVID) to 225 (21%) (COVID), and significant decrease in surgery as first treatment from 958 (80%) (PRE-COVID) to 740 (70%) (COVID), suggesting hormone therapy was used as bridging therapy. We found no significant difference in short-term (3-year) observed survival for those treated with curative intent (92% (PRE-COVID) and 93% (COVID)).

Conclusion: Despite fewer patients being assessed at triple assessment clinics due to the screening pause, patients waited slightly longer to be diagnosed. Findings of no statistically significant change in treatment intent, higher levels of bridging endocrine therapy and no reduction in 3-year survival suggests treatment plans were adapted to effectively support BC pathways.

Title

Code 31

CAN SYNTHETIC DATA MIRROR THE STRUCTURE AND OUTCOMES OF CANCER REGISTRY DATA

Authors Names

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Theme

New methods innovation and AI applications

Abstract

Objectives: Cancer registry data can be requested and provided for specific purposes - given that the data are not disclosed. Synthetic data offer a potential solution to both safeguard sensitive data and support open science. Our study explores whether (1) data structures and (2) results derived from original cancer registry data and synthetic data are sufficiently comparable.

Methods: We used data on lung cancer diagnosed in 2016-2019 from four population-based cancer registries. Using the R package “arf”, we generated ten datasets for each combination of data proportion used (p=25%-100%, in 25% increments) and the number of cases generated (n=10%-100% of original data, in 10% steps). Additionally, we repeated the process for two smaller subsets, one randomly selected and one more homogeneous containing only stage IV small cell lung cancer (esSCLC). We compared (1) data similarity using the Kullback-Leibler divergence (KLD) and the pairwise correlation difference (PCD) and (2) median overall survival (OS) estimates.

Results: The original data comprised 60,000 cases (5,000 each for the smaller datasets) and 10 variables (federal state [with 4 categories (cat.)], month and year of diagnosis [12 and 4 cat.], morphology [8 cat.], age, sex [2 cat.], stage [5 cat.], time of follow-up and vital status at end of follow-up [2 cat.]).
PCD depended on both p and n, while KLD was independent of p and n, but varied across variables for all datasets. The random subset had the largest KLD and PCD results, followed by the esSCLC subset and the full dataset.
Median OS of the synthetic data was similar to median OS in the full data set. In smaller subgroups the differences were more pronounced, with p having the greatest impact.

Conclusion: Our synthetic data closely resembles the original data, especially for larger datasets. Further analyses will examine whether this similarity holds for datasets with one-to-many relationships such as therapy reports or multivariable analyses.

Title **Code** 35

POPULATION ATTRIBUTABLE FRACTIONS FOR SMOKING RELATED CANCERS IN IRELAND IN 2022

Authors Names

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Theme

Epidemiological clinical use of cancer registry data

Abstract

Objectives: Although smoking behaviours in Ireland have changed in recent years, smoking remains a leading preventable cause of cancer. Using data from the national cancer registry and a representative national survey regarding smoking, population attributable fractions (PAFs) have been calculated to estimate the impact of smoking on cancer incidence in Ireland in 2022.

Methods: The annual PAF and attributable cases of smoking prevalence have been estimated for 18 cancers recognised by either the International Association for Research on Cancer (IARC) or the World Cancer Research Fund (WCRF) as 'tobacco-related'. We used cancer registry data for cancer incidence (2022) and current and former smoking exposure data (current and former smoking; second-hand smoke (SHS)) from the Healthy Ireland Survey 2015. Internationally recognised relative risks for SHS, current and past smoking were used to estimate the PAF.

Results: In 2022, 24% of new tobacco related cancers (3345/13959) were attributable to smoking. Lung cancer was found to have a high number of cases attributable to smoking for both men (74.8 %, 1066/1426) and women (71.7%, 944/1316). Similar proportions were seen between men and women for pancreatic cancer (26.3% for men (86/326) and 23.4% for women (71/302)). For stomach cancer, a difference was seen between the PAFs for men (21.2 %, 81/382) and women (4.2% 10/230).

Conclusions: Despite efforts to reduce smoking prevalence in Ireland, smoking continues to be a leading cause of cancer cases. An estimated 3345 new cancers could have been prevented in 2022 had more effective tobacco control interventions been implemented. These results highlight the importance of continued efforts to reduce tobacco smoking in Ireland.

Title **Code** 36

INCIDENCE RATES OF TOBACCO RELATED CANCERS BY DEPRIVATION QUINTILE IN IRELAND 2014 TO 2018

Authors Names

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Theme

Social inequalities and cancer

Abstract

Objectives: Recent trends in tobacco-related cancer incidence rates by deprivation is unclear in Ireland. This study examines this trend, using national cancer of Ireland data from 2014 to 2018.

Methods: Age-standardised incidence rates by deprivation quintile were estimated per 100,000 for 18 cancers causally related to tobacco, as per the International Association for Research on Cancer and World Cancer Research Fund. This analysis used the Pobal 2016 indices of deprivation at electoral division (ED) level, incorporating information from the national Census of that year.

Results: In general, people living in the most deprived areas had higher incidence rates of tobacco related cancers compared to those living in the least deprived areas. An increase in rates with an increase with deprivation has been observed, although this varies across sites. For example, Lung cancer has incidence rates of 59.6 and 93.7 for the least and most deprived quintiles respectively. Similarly, stomach cancer had incidence rates of 12.6 and 18.7 for the least and most deprived quintiles respectively. Some cancers showed less variations in incidence by deprivation quintiles. Kidney cancer, for instance had incidence rates of 17.9 and 19.6 for the least and most deprived quintiles respectively.

Conclusions: Contrasting rates in tobacco related cancer incidence by deprivation quintiles likely reflect differential patterns in smoking prevalence across population groups. These findings underscore existing health inequalities that should be addressed to ensure optimal outcomes for all cancer patients.

Title

Code 41

INCIDENCE TRENDS OF EARLY-ONSET COLORECTAL MALIGNANCIES IN GERMANY: A REGISTRY-BASED STUDY FROM 1994 TO 2021

Authors Names

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* Both authors contributed equally.

Theme

Epidemiological clinical use of cancer registry data

Abstract

Objectives: To describe incidence trends of early-onset colorectal malignancies, i.e. below 50 years of age, for Germany by sex, age, and major tumour characteristics.

Methods: Nationwide data from population-based cancer registries on incident colorectal malignancies (ICD-10 codes C18-C20) diagnosed between 1994 and 2021 were retrieved and included information on age at diagnosis, sex, tumour site, histological subtype, tumour size, and grading. Only data from cancer registries with complete coverage during each calendar year of the study period were used to derive age standardised incidence rates (ASR, old European Standard) and average annual percent changes (AAPC). Overall trend analyses since 1994 by age and sex used data from three regions whereas trend analyses since 2004 used data from 8 out of 16 federal states.

Results: Between 1994 and 2021, ASRs of colorectal malignancies (excluding the appendix) increased in the age group 20-49 years for men (1994: 6.5 per 100,000; 2021: 11.4) with an AAPC of 1.2% and for women (1994: 7.7; 2021: 9.5) with an AAPC of 0.5%, while ASRs substantially decreased for individuals above 50 years of age for, both, men (1994: 206.7; 2021: 155.9) with an AAPC of -1.0% and women (1994: 149.9; 2021: 103.8) with an AAPC of -1.2%. For the period 2004-2021, we observed rising ASRs of colorectal malignancies for the age groups 20-29 years (AAPC men: 3.9%; women: 3.3%) as well as 30-39 years (AAPC men: 2.5%; women: 1.7%) but not for 40-49 years (AAPC men: -0.2%; women: 0.0%), whereas ASRs of appendiceal malignancies were rising for all age groups below 50 years of age. Increases were not limited to specific tumour characteristics but tended to be higher for neuroendocrine neoplasms, T1 tumours, and tumours with low grading compared to the other categories.

Conclusions: We observed an increase of early-onset colorectal malignancies calling for further monitoring and future studies to identify possible causes.

Title **Code** 64

PANCREATIC CANCER PATIENTS WITH VAGUE SYMPTOMS HAVE LATER STAGE DISEASE, FEWER TREATMENT OPTIONS AND POORER SURVIVAL.

Authors Names

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Theme

Epidemiological clinical use of cancer registry data

Abstract

Objectives: The majority of pancreatic cancer (PC) patients present with symptoms, are diagnosed at late stage and have poor survival. Patients with alarm symptoms (AS), such as jaundice, altered stool or urine colour, may be identified and managed more effectively than those with vague symptoms (VS). We examined the impact of presenting symptoms (VS/AS) on the stage and survival of PC patients.

Methods: 512 patients with primary PC (ICD-O-3: C25) between 2019-20 were extracted from the Northern Ireland Cancer Registry (NICR) PC Audit dataset. Patients were categorised as having AS or VS by symptoms reported at diagnosis. $\chi 2$ tests examined differences between AS and VS patients. Kaplan-Meier (KM) and Log-Rank tests assessed differences in 1-year overall survival (OS). Cox proportional hazards (CPH) models compared mortality risk between AS and VS patients, adjusting for sex, age, socioeconomic status, referral route, tumour location and stage at diagnosis.

Results: More patients presented with VS (n=309, 60.4%) compared to AS (n=203, 39.6%). A lower % of VS patients presented via emergency admission (33.7% (VS) v 66.0% (AS) p<0.001) but a higher % presented with late-stage disease (Stage IV - 62.1% (VS) v 39.9%, p<0.001). Half of AS patients (50.2%) received tumour-reductive treatment compared to 34.0% of VS patients (p< 0.001). VS patients had significantly worse one-year survival (24.9% (VS) v 33.7% (AS), (p< 0.001). CPH analysis found a 48% [HR =1.48(1.14-1.91)] increased mortality risk for VS compared to AS patients (p=0.003).

Conclusions: Pancreatic cancer patients with VS were less often diagnosed via emergency admission, but a higher proportion had late-stage disease and fewer received tumour reductive therapy. Having vague symptoms was an independent predictor of poorer survival. Improved awareness of PC symptoms among the public and healthcare workers, especially regarding vague symptoms, is needed to improve earlier diagnoses and extend survival.

Title **Code** 67

FEASIBILITY TO ANALYZE HORMONE RECEPTORS STATUS FROM BREAST CANCER PATHOLOGICAL REPORTS VIA AUTOMATED TECHNIQUES

Authors Names

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Theme

New methods innovation and AI applications

Abstract

Objectives: In Scotland diagnosis of breast cancer done locally in non-standardized way and reported in unstructured format which make extraction of hormone receptors status too complicated. Manual extraction is time consuming and has interobserver variability which makes automation an appealing option. This study aims to design and validate two approaches to extract ER, PR and HER-2 status from unstructured pathological reports.

Methods: Regular expression-based extraction methods, and rule-based hierarchical classification approached was designed to retrieve hormone receptors status from 5866 unstructured breast cancer pathological reports using two approaches. The first approach used predefined common expressions for hormone receptor status while the second approach combined these common expressions with manually extracted patterns from real world pathological reports. Then, these approaches results were validated against manually extracted registry.

Results: Our results show a noteworthy agreement between these automated approaches and manually annotated registry, for ER 74%, PR 71% and 75% for HER-2 using common expression approach, while combine approach show a higher percent of agreement for ER and PR 84% and 76% for HER-2. In terms of sensitivity and specificity, ER and PR extraction showed 92% sensitivity and for specificity 78%, and 69% ; respectively. Also, HER-2 represented sensitivity of 90% and specificity of 97% using common expression approach. For combined approach, ER extraction showed 95% sensitivity and 88% specificity; PR represented sensitivity of 97% and specificity of 88%. Also, HER-2 showed sensitivity of 92% and specificity of 97%.

Conclusion: Combined approach has better performance. However, limitations still exist, ongoing refinement is essential to enhance its utility in clinical and research settings. So far, this method may be used to facilitate manual extraction for registry completion, also, real world evidence study design.

Title **Code** 69

SECOND PRIMARY CANCERS AMONG MALES WITH A FIRST PRIMARY PROSTATE CANCER: A POPULATION-BASED STUDY IN NORTHERN PORTUGAL

Authors Names

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Theme

Epidemiological clinical use of cancer registry data

Abstract

Objectives: Increased survival and life expectancy among patients with prostate cancer results in increased risk of developing a second primary cancer (SPC). We aimed to quantify the incidence rates and risk of developing an SPC in a population-based cohort with a prostate first primary cancer (FPC) and to compare the incidence of SPCs with the expected in the general male population.

Methods: A cohort of 13222 patients with a prostate FPC from the North Region Cancer Registry of Portugal, diagnosed between 2000 and 2009, was followed until 31 December 2021, for synchronous (within six months of FPC diagnosis) and metachronous SPCs (all others). Incidence rates of all SPCs, cumulative incidence of metachronous SPCs, and standardized incidence ratios (SIR) of SPCs were estimated.

Results: A total of 1953 (14.8%) patients with a prostate FPC developed an SPC, mostly of the colon, lung and bladder. Synchronous SPCs (169 total (8.7% of the SPCs)) occurred mainly in the bladder. The median age at FPC diagnosis was 69 years. The median time follow-up was over 16 years for all groups of patients, and the median time between FPC and metachronous SPC diagnosis was over six years. Incidence rates were relatively stable with 1400 SPCs/100000 person-years. Compared to the general male population, patients with a prostate FPC had a globally lower incidence of all cancers (SIR = 0.95; 95%CI: 0.91-0.99), and lung and oesaphagus cancers, but higher incidence of bladder and pancreas cancer. The 10- and 20-year cumulative incidence of metachronous SPCs were 10.3% and 15.4%, respectively. Corresponding 10- and 20-year cumulative mortalities were 30.8% and 56.0%.

Conclusions: In Northern Portugal, male patients with prostate cancer FPC have a lower incidence of SPCs than the general male population. Nevertheless, patients with prostate FPC remain at risk of developing subsequent cancers. Continued cancer surveillance among survivors is needed.

Title

Code 73

TRENDS IN SURVIVAL FROM LUNG CANCER IN A NORTHERN ITALIAN REGION: A POPULATION-BASED STUDY

Authors Names

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Theme

Survival

Abstract

Objectives: This study aimed to evaluate the time trend (1991-2020) in survival from lung cancer (ICD-10 code C34) in the Emilia-Romagna Region (northern Italy).

Methods: A total of 67,954 cases were extracted from the Emilia-Romagna Cancer Registry. Tumour type was classified into squamous cell carcinoma, small cell carcinoma, adenocarcinoma, large cell carcinoma, other specified carcinoma, and unspecified type. One-, 2- and 5-year net survival (NS) and 5|1-year conditional NS (CNS) were calculated using the Pohar-Perme estimator. NS was age-standardized with ICSS-1 weights. Trends were assessed via Poisson regression. Statistical significance was determined using the Wald test for trend.

Results: Overall 1-year NS increased significantly (P<0.001) from 39.1% (95% confidence interval, 37.9-40.4%) to 47.9% (46.5-49.2%) in males and from 40.7% (38.3-43.2%) to 57.6% in females. The 5-year NS rose from 11.8% (10.8-12.8%) to 23.6% (22.3-25.0%) in males and from 12.6% (10.7-14.6%) to 34.1% (32.4-35.8%) in females. Adenocarcinoma showed the largest increase (P<0.001), with 5-year NS improving from 11.5% (9.8-13.5%) to 29.3% (27.3-31.2%) in males and from 10.0% (7.5-12.9%) to 41.3% (38.9-43.7%) in females. Small cell carcinoma exhibited non-significant improvement, with 5-year NS fluctuating between 5% and 12%. Overall, the 5|1-year CNS improved from 30.4% (28.4-32.4%) to 46.6% (44.5-48.8%) in males and from 31.5% (27.0-36.1%) to 58.0% (55.5-60.3%) in females (P<0.001).

Conclusions: For squamous cell carcinoma and adenocarcinoma, the observed increases in 1-year NS and 5|1-year conditional (CNS) indicate, respectively, a decrease in the proportion of advanced-stage, rapidly fatal cancers and in the proportion of more delayed fatalities. These findings are compatible, respectively, with a trend toward dowstaging and an increasing effectiveness of systemic treatments. Among patients with small cell carcinoma, only an increase in 5|1-year CNS for males was observed.

Title **Code** 77

EPIDEMIOLOGY OF FEMALE METASTATIC BREAST CANCER BETWEEN 1993 AND 2022 IN THE FEDERAL STATE OF SAARLAND, GERMANY

Authors Names

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Theme

Epidemiological clinical use of cancer registry data

Abstract

Objectives: Breast cancer (BRC) is the most common malignant tumor in women in many countries. The aim of this study is to assess trends in the incidence of synchronous distant metastases (found in newly diagnosed tumors) and metachronous distant metastases (found at a later point of time) in women with BRC in Saarland, Germany.

Methods: Women with BRC (ICD 10: C50) up to 2022 were included in the analysis of data collected by the Saarland Cancer Registry. Patients were stratified by stage according to TNM (I: T1-T2N0M0; II: T3-4N0M0; III: T1-4N+M0; IV: M1; X: T or N unknown and M0 or missing) as well as age (age group 1: 15-49years; age group 2: 50-69years; age group 3: 70+years). Joinpoint models were used to quantify annual percentage changes (APC).

Results: Between 1993 and 2022, a total of 26,087 women were diagnosed with invasive BRC. Overall, incidence of de novo metastatic BRC increased. Between 2007 and 2022, a significant increase of stage IV BRC was observed in age group 3 (rates from 26.5 to 37.5 cases per 100,000 women per year; APC=3.94). Furthermore, incidence of metachronous metastatic BRC increased in age group 3 whereas it stayed on a similar level or declined in younger women. Incidence of BRC with unknown stage dropped significantly in age group 3 (rates from 118.6 in 1993 to 41.6 in 2022; 1993-2005: APC= -1.7; 2005-2022: APC=-5.8).

Conclusion: The rise in the incidence of de novo metastatic BRC especially in older women could be attributed to less misclassification due to better diagnosis and detection methods, which is also supported by the observed decline in the incidence of BRC with unknown stage in this age group. The increase in BRC with metachronous distant metastases in age group 3 might further be accounted to the fact that survival of BRC patients has extended in the past due to better initial treatments and increased life expectancy. A possible decline in the average individual risk for metastatic BRC is subject to further analysis.

Title

Code 80

BREAST CANCER PROGRESSION: RETROSPECTIVE COHORT OF 8578 WOMEN IN UK CANCER REGISTRIES

Authors Names

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Theme

Epidemiological clinical use of cancer registry data

Abstract

Objectives: To estimate progression of female breast cancer using linked population-based cancer registry data held by the UK Biobank.

Methods: UK Biobank comprises 500,000 participants' health data and recruitment began in 2006. Self-reported health, cancer registrations, deaths, hospital treatment and other datasets have been linked. We identified all females with a C50- breast cancer registration after recruitment and assessed risks of cancer-specific mortality and hospitalisation for breast cancer. Descriptive statistics, Kaplan-Meier survival estimates and Cox proportional hazards models were used.

Results: 8578 women were identified on UK cancer registries with a diagnosis of primary breast cancer (ICD-10) between 2006 and 2020. Median follow-up 5.5 years, range 0 to 14.5 years. Median age 64.4 years, 10.8% in most deprived socio-economic quintile, 24.3% obese (BMI >30kg/m2). In total, there were 670 deaths of which 539 were from breast cancer. Adjusted Cox proportional hazards model (HRadj) found raised hazards of breast cancer mortality in obese (HRadj 1.33, 95% CI 1.06-1.64) and patients over 70 years (HRadj 1.75, 95% CI 1.36 to 2.25). A raised hazard was associated with deprivation but was no longer significant after adjustment for other factors. Ethnicity was not associated with breast cancer death.

Conclusions: Algorithm-based models using routinely-available data can be used to estimate progression and recurrence from cancer. Further research is needed to compare results to gold-standard clinical assessment of individual patients' disease.

Title **Code** 83

CORRECTING UTERINE CANCER MORTALITY IN ESTONIA USING LINKAGE OF CANCER REGISTRY DATA

Authors Names

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Theme

Data quality

Abstract

Objectives: The aim was to quantify the impact of misclassifying cervical and corpus uteri cancer deaths as unspecified uterine cancer deaths on mortality estimates using individual linkage of death records and cancer registry records in Estonia.

Methods: Estonian Causes of Death Registry (ECDR) provided data on deaths in Estonian population in 2000–2021 with the underlying cause of cervical cancer (ICD-10 code C53), corpus uteri cancer (C54) or cancer of uterus not otherwise specified (NOS) (C55). Deaths were individually linked to Estonian Cancer Registry to identify any cancers (C00–97) registered in these persons during their lifetime (since 1968). The underlying cause of death was compared with cancer diagnoses and reallocated if applicable. Original and corrected age-standardized (world) mortality trends were modelled using joinpoint regression.

Results: After correction, there were 1409 cervical cancer deaths (originally 1388, 1.5% increase), 1146 corpus uteri cancer deaths (902, 27% increase), and 50 deaths from cancer of uterus NOS (368, 86% decrease). Over the study period, the proportion of cancer of uterus NOS deaths decreased from 26% (2000–2004) to 4% (2016–2021) ($p<0.001$). After correction, the slope of cervical cancer mortality trend steepened slightly from 0.8% to 1.1% decrease per year (both indicating significant decline). Corpus uteri cancer mortality trend, however, changed direction from significant increase of 1.9% per year to significant decrease of 1.4% per year.

Conclusions: Linking death records with cancer registry data allowed for the reallocation of most unspecified uterine cancer deaths to more specific cancer sites (64% to corpus uteri and 17% to cervical cancer), highlighting the critical role of cancer registry data in validating the underlying cause of death. Other important factors include availability of medical documentation for physicians assigning cause of death as well as relevant training.

Title

Code 95

RECOGNITION AS A PAEDIATRIC ONCOLOGY REFERENCE CENTRE: A DATA-DRIVEN APPROACH USING CANCER REGISTRY INSIGHTS

Authors Names

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Theme

Epidemiological clinical use of cancer registry data

Abstract

Objectives: The organization of health institutions into reference centres for rare diseases aims to optimize care, but their true impact remains unknown. We aimed to assess the effect of Paediatric Oncology Reference Centre recognition, by comparing the post-recognition period (2018-2023) with the pre-recognition period (2013-2017) of Hospital Universitário de São João.

Methods: Data on new cancer cases aged 0-17 years diagnosed and/or treated at our centre were retrieved from the cancer registry (2013-2017: N=283 and 2018-2023: N=486). Annual percent changes (APC) in the number of cases per year and corresponding 95% confidence intervals (95%CI) were computed through joinpoint analysis. Time intervals in days from first contact until diagnosis and from diagnosis until treatment were quantified by computing percentage differences (PD) and corresponding 95%CI, with logarithmic transformation and using linear regression models. Patients were followed for vital status until 31st December 2024. Survival at 1-year was quantified through Kaplan-Meier estimator and compared across the two time periods using a Cox proportional hazard model to compute a hazard ratio (HR) and respective 95%CI.

Results: The number of new cases increased between 2013 and 2023 (APC [95%CI]: +6.54 [+3.85; +9.25] %/year). There was a decrease in time to treatment (PD [95%CI]: -71.0 [-85.0; -42.0] in 2018-2023 compared to 2013-2017) but not in time to diagnosis (PD [95%CI]: -5.0 [-46.0; +66.0] in 2018-2023 compared to 2013-2017). Survival at 1-year was higher for cases diagnosed and/or treated in 2018-2023 (95.3% vs. 93.3% in 2013-2017), however this difference was not statistically significant (HR [95%CI]: 0.66 [0.37; 1.18]).

Conclusions: In our centre, the number of new cases has increased in the post-recognition period, and we were able to provide a better response in time to treatment. Short-term survival was already high and tended to increase further, though not statistically significantly.

Title **Code** 97

YEARS OF LIFE LOST DUE TO CANCER IN THE UK, 2023

Authors Names

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Theme

Age and cancer

Abstract

Objectives: Cancer is the leading cause of death in the UK, and while incidence rates are highest in people aged 85-89, some cancers have more impact are more common in younger people. Being diagnosed with cancer at a younger age can result in a younger age at death, which means more theoretical years of life lost (compared with average life expectancy). Years of life lost (YLL) is a different lens through which we can view the impact of cancer in the population. This analysis estimates the YLL due to cancer mortality in the UK in 2023.

Methods: Cancer mortality data for 2023 by cancer site for UK constituent countries were obtained from the Office for National Statistics for England and Wales, the National Records of Scotland, and the Northern Ireland Statistics and Research Agency.
Life expectancy figures for the UK were calculated using Office for National Statistics mortality data with expected life years remaining for each age group calculated as the difference between life expectancy and the midpoint of the age category. Similarly, expected productive life years remaining were determined as the difference between a cut-off age (set at 65 and 75) and the midpoint of each age category.
Years of life lost (YLL) , age-standardised YLL rate (ASYR) and age-standardised mortality rates (ASMR) were estimated using these data by sex and 5-year age band.

Results: For 2023, YLL to cancer in the UK was estimated at 2,434,606 life years, with 1,673,359 occurring before age 75, and 984,492 before the age of 65. The largest number of YLL occurred in lung (463,176), bowel (247,256), and breast (196,444) cancer.

Conclusions: YLL quantifies premature mortality by weighting deaths by frequency and the age at which they occur, assigning greater importance to deaths at younger ages. Taken together with incidence and mortality, YLL facilitates understanding of the impact of cancer and supports the planning of services and interventions.

Title **Code** 103

COMPLETENESS OF CASE ASCERTAINMENT IN THE SWISS CHILDHOOD CANCER REGISTRY

Authors Names

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Theme

Data quality

Abstract

Objectives: Completeness of case ascertainment is crucial for data quality in cancer registries, affecting measures like cancer incidence and the interpretability of trends. The Swiss Childhood Cancer Registry (ChCR) records cancers in individuals aged <20 years. Since its establishment, registration procedures have changed, affecting completeness over time. We aimed to estimate completeness in the ChCR since 1985 separately for infants (<1 year), children (1-15 years) and adolescents (16-19 years).

Methods: We obtained data on all registered cancer cases diagnosed in individuals aged 90% complete for cancer cases diagnosed since 1985, and >95% complete since 2005 across all methods, with completeness slightly increasing over time. For children, the ChCR is >95% complete since 1985 across all methods. For adolescents, Ajiki's estimate increased from 85% since 1985 to 98% since 2015 (Parkin's estimate increased from 87% to 98%), while the flow method estimate varies between 90%-96% with no clear trend. For infants, Ajiki's estimate increased from 84% since 1985 to 92% since 2015 (Parkin 86% to 93%, flow method 81% to 96%).

Conclusion: Completeness of the ChCR has consistently been high for children and has improved for adolescents and infants in the last two decades. Still, achieving full coverage for adolescents not treated in specialized paediatric oncology clinics and for infants who die shortly after birth is challenging. The three methods rely on assumptions that do not always hold, leading to differing estimates for infants and adolescents. This poses problems in the interpretation of the results and highlights the need for a standard methodology to enable registries to assess completeness in a comparable way.

Title

Code 114

EPIDEMIOLOGICAL CAUSAL MODELS AND THEIR GENERALIZABILTY: A USE CASE TO STUDY LONG-TERM EFFECTS IN YOUNG CANCER SURVIVORS

Authors Names

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Theme

Epidemiological clinical use of cancer registry data

Abstract

Objectives: Thanks to their ability to link to cancer cases several administrative data, population-based cancer registries (CRs) have the unique opportunity to study long-term outcomes in cancer survivors. The objective of this work is to discuss the use of a causal model to study 5-years risk of cardiovascular diseases (CVDs) in young women surviving breast cancer; with a focus on the issues of external validity and generalizability of the results when transporting its results to patients living in another area.

Methods: To train a causal bayesian network model, we fused a clinical and a population-based cohort of 1375 young women (18-39 years old) who survived at least 1 year of breast cancer, living in the Lombardy region in Italy. The model included information on cancer prognostic factors, treatments, and some major cardiovascular risk factors (i.e. hypertension, dyslipidemia and type 2 diabetes). To externally validate the model, data were collected from 6 additional CRs, covering 5 different regions nationwide.

Results: Comparing the different cohorts, we observed similar distributions of age, histology and major cardiovascular risk factors, while minor differences in the treatment choices (especially in pre-surgical treatments). As expected, CVDs are very rare, ranging from 1% to 4%. Geographic variability in the model predictive ability will be presented using standard classification metrics and interpreted also into the light of health migration for the main breast cancer surgery, that varies widely in the 6 considered areas (from 5% to 30%).

Conclusions: With this use-case, we proposed a generalizable methodological framework to be of interest for researchers working in CR that aim at making epidemiological use of their data. In the next 3 years, this model will be further externally validated and extended in the context of a pilot study nested into the Joint Action PreventNCD in four different European national CR (Denmark, Norway, Belgium and Estonia).

Title **Code** 117

EXPLORING PREVIOUS PREGNANCY IMPACT ON BREAST CANCER STAGE, TREATMENT AND SURVIVAL

Authors Names

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Theme

Survival

Abstract

Objectives: It has been reported that breast cancer (BC) occurring some years after pregnancy is associated with worse prognosis. The aim of the study was to explore potential differences in the BC stage, treatment and survival between women with and without previous pregnancy during the period 2009-2019 before BC diagnosis

Methods: Women between 15-55 year old residents in Castelló province diagnosed of BC in 2019 were provided by the Castelló population-based cancer registry. Birth registry was used to identify previous pregnancies between 2009 and 2019. BC stage and treatment type in women with previous pregnancy (P) were compared with women without previous pregnancy (Not-P) during the study period. Fisher's exact test was used for comparing categorical variables (stage and treatment). Five years observed and relative survivals and their 95% confidence intervals (CI) were estimated using the WAERS tool

Results: 146 BC cases were obtained (33 with previous pregnancy). Stage and treatment were available for 100% and 94.5% of cases respectively. Stage II was significantly predominant (55%) in P and stage I (51%) in Not-P ($p<0.05$). The most frequent treatment scheme for stage I and II in P was [Surgery (S)/Chemotherapy/Hormone therapy (HT)/Radiotherapy (RT)] and in Not-P was [S/HT/RT] but non-significant differences were found. The first course of treatment was given in the first year after diagnosis, with non-significant differences between P and Not-P women. Relative survival in P was 91.1% (95%CI: 81.8-100.2) and in Not-P 95.4% (95%CI: 91.3-99.7). Non statistical significant differences were found by stage and pregnancy

Conclusions: Significant differences in stage were found in P women compared with Not-P. Survival was lower in P women, but non-significant differences were found. The main limitation was the low number of cases. A further study is planed extending the study period. A collaborative European project would increase the statistical power

Title

Code 124

DIFFERENTIATING POPULATION-BASED PALLIATIVE CARE NEEDS IN CANCER PATIENTS USING CANCER REGISTRY DATA

Authors Names

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Theme

Epidemiological clinical use of cancer registry data

Abstract

Objectives: In population-based assessment of palliative care (PC) needs, routine data on mortality, disease prevalence and weights on symptom prevalence and duration are combined. Our aim was to evaluate generalist (GPC) and specialist (SPC) PC needs among adult patients with progressive, incurable cancer and their caregivers utilising data from the Slovenian Cancer Registry (SCR).

Methods: A retrospective population-based study was carried out for the period 2017–2019 in Slovenia applying routine data from the SCR. Observed population consisted of 1) adults ≥20 years who died of cancer (decedents) and their subcohort being hospitalised at least once during 12 months before death; 2) adults 20+ years surviving up to five-year after cancer diagnosis (non-decedents); 3) their caregivers. International methods of Higginson et al. (1997), Rosenwax et al. (2005), Murtaugh et al. (2014), the Lancet Commission (2018), Kwete et al. (2024) and the Slovenian methods of Lokar et al. (2021) and Ebert et al. (2023) were used to estimate the range (minimal, middle and maximum) of GPC and SPC needs. To refine the estimation of SPC and caregivers´ needs, data on cancer stage and five-year net survival was used.

Results: During 2017–2019 in Slovenia, we estimated that 3,630–5,775 cancer decedents, 2,703–11,458 non-decedents and 449–6,417 caregivers per year would need GPC, while SPC would have been needed by 642–3,914 cancer decedents, 535–4,750 non-decedents and 535–1,284 caregivers. Minimal- and middle-range assessments may be more relevant.

Conclusions: Data on cancer stage and survival was necessary to distinguish between GPC and SPC needs in Slovenian cancer patients and their caregivers. However, to achieve more precise results, qualitative methods such as a consensus study would be required.

Title **Code** 128

ENHANCING CANCER REGISTRATION IN SLOVENIA: A SWOT-BASED EVALUATION OF ACTIVE CASE-FINDING AND DIGITAL PROCESS MAPPING

Authors Names

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Theme

Data quality

Abstract

Introduction: In Slovenia, notification has been mandatory since the establishment of the Slovenian Cancer Registry (SCR) in 1950. Until incidence year 2021, data collection was based on passive registration, where notification forms were submitted by hospitals and data was entered into the system by coders. This method allowed for comprehensive data collection, but the quality and completeness of data depended on the efficiency and accuracy of each facility's reporting practices. In 2019, SCR gradually introduced active registration, which transformed the registration process.

Methods: A new automated data exchange allows 28 large hospitals to send cancer notifications directly to SCR on a daily basis, replacing the manual process. Coders have now direct access to hospital systems and a central patient registry, improving data accuracy and efficiency. Some smaller institutions still submit data manually. To evaluate the new process a SWOT analysis was performed.

Results (SWOT analysis): Strengths: improved data completeness and quality, timeliness, standardization and consistency, reduced administrative burden for hospitals and better relationships, enhanced surveillance and feedback.Weaknesses: time-consuming process due to massive availability and redundancy of data in patient records, incomplete coding at source, incomplete coverage, reliance on IT infrastructure, workload on coders. Opportunities: expansion to all healthcare institutions, predictive analytics and AI, improved public health policy. Threats: privacy and security risks, resistance to change, system downtime or failure, resource constraints.

Conclusions: The transition to active cancer registration has brought considerable benefits to the SCR. Data quality has improved through the centralized verification process, and the timeliness of “casefinding” has increased significantly. This system serves as a solid foundation for better cancer surveillance, research, and public health measures in Slovenia.

Title

Code 129

MONITORING AND IMPROVING SKIN MELANOMA CARE MANAGEMENT IN SLOVENIA WITH QUALITY OF CARE INDICATORS

Authors Names

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Theme

Cure and care

Abstract

Introduction: In line with the National Cancer Control Programme, the Slovenian Cancer Registry (SCR) established the Slovenian Clinical Registry of Skin Melanoma (KrMel) in 2017. The KrMel includes data for all patients with invasive and in situ skin melanoma. The data analyses are presented by year of incidence and reports are published annually for the most recent five years.

Methods: For continuous monitoring of quality improvement in skin melanoma care, a set of 23 composite quality indicators (QIs) was developed in collaboration with clinician advisors and grouped into 15 categories (excision, histopathology, re-excision, sentinel lymph node biopsy, multidisciplinary council, lymphadenectomy, diagnostic staging, BRAF status, adjuvant radiotherapy, radiotherapy, adjuvant systemic therapy, systemic therapy, treatment complications, completed treatment, clinical research). These QIs are based on Slovenian clinical practice guidelines in diagnostics and treatment of patients with skin melanoma and have defined target values.

Results: QI data for invasive skin melanoma diagnosed between January 1, 2017, and December 31, 2023, were collected and analysed. During this period, 4,915 patients with invasive skin melanoma were diagnosed in Slovenia. For the entire observed period, data were available for 14 QIs, and the national targets were met in 7 of these indicators. In 2023, the targets for 12 out of 22 QIs were met, with 10 below target – 2 are close to set target and 1 is particularly low (time interval to lymphadenectomy) but improving yearly.

Conclusions: These QIs serve to improve the quality of melanoma care throughout Slovenia and are regularly reviewed. If targets are not met, the reasons and appropriate actions are discussed yearly with clinical advisors. This approach ensures that the QIs remain clinically relevant and the results effectively reflect the ongoing challenges in the quality of patient care.

Title **Code** 130

INCIDENCE AND STAGE AT DIAGNOSIS OF CHILDHOOD AND ADOLESCENT CANCER BETWEEN 2015-2020 IN THE COMMUNITY OF MADRID, SPAIN

Authors Names

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Theme

Epidemiological clinical use of cancer registry data

Abstract

Objectives: This study presents the incidence and stage at diagnosis of cancers diagnosed in children and adolescents (0-19 years old) in the Community of Madrid between 2015 and 2020.

Methods: Data were abstracted from the Pediatric Population-Based Cancer Registry of Madrid (PCRM), which covers a population of around 1.3 million individuals under 20 years old. This registry includes all malignant neoplasms (except non-melanoma skin cancer), non-malignant central nervous system (CNS) tumors, and borderline and in situ bladder tumors. Crude and age-adjusted incidence rates are expressed in cases per 1,000,000 inhabitants, and were computed for all cancers by major diagnostic groups of the International Classification of Childhood Cancer (3rd edition), sex, and separately for children (age 0-14) and adolescents (15-19). The Toronto Guidelines were used to reconstruct stage at diagnosis.

Results: During the study period, 1,517 tumors were registered (53% in boys), with a crude incidence rate of 190.33. The crude incidence rate for boys was 190.6, with leukemia and CNS tumors being the most frequent neoplasms (25.7% and 21.6% respectively), while for girls it was 166.3, with a higher proportion of CNS tumors (26.7%), followed by leukemia (23.1%). In adolescents, crude rates for boys and girls were 223.4 and 232.8, respectively. The most frequent tumors in boys were lymphomas (28.5%) and CNS tumors (19.6%). In girls, CNS tumors were the most common (30.5%), followed by lymphomas (24.9%).
Most tumors were diagnosed at early stages. Neuroblastomas had the highest percentage of metastasis at diagnosis: 36.1% metastatic and 13.1% MS (metastatic stage for children under 18 months old).

Conclusions: The data provided by the PCRM contributes to the development of evidence-based health policies and strengthens the epidemiological surveillance of childhood cancer in the Community of Madrid.

Title

Code 137

LONG-TERM SURVIVAL OF BREAST CANCER PATIENTS BY STAGE AT DIAGNOSIS IN EUROPE: EUROCARE-6 RESULTS

Authors Names

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Theme

Survival

Abstract

Objectives: The EUROCARE-6 dataset offers a unique opportunity to investigate long-term breast cancer (BC) survival in European countries. Our aim is to assess the impact of age and stage at diagnosis on between-country differences in ten-year survival.

Methods: We estimated the period relative survival (RS) in 2010-2014 up to ten years post-diagnosis. Data on adult women diagnosed with BC in 2001-2013 and followed-up to 2014 were extracted from the EUROCARE-6 database. We selected 21 cancer registries, representing 13 European countries, with stage information available for at least 65% of cases. Stage was reconstructed using TNM and stage grouping variables.

Results: Overall, 600,230 BC cases were analysed. Age-adjusted 10-year RS (AARS) declined with advancing stage: from 96% to 81%, 51% and 12% for stages I to IV, respectively. AARS varied across countries: maximum absolute differences were 12 percent points (pp) for stage I and II, 25 for stage III and 15 for stage IV. Age differences were more pronounced for advanced stages.
10-year RS in youngest women (15-44) was always worse than in those aged 45-54 at diagnosis, except for stage IV. Conditional ten-year relative survival (CRS) for patients surviving five years after diagnosis was 97%, 89%, 74% and 51% for stages I to IV, respectively. Country differences in CRS increased with advancing stage (up to 25 pp for stage IV). Age differences in CRS were marked for stage III and almost negligible for stages I and IV.

Conclusions: Long-term BC survival differences by country in Europe increased with advancing age and stage, being highest in stage III. In stage I, age differences were negligible, and cure was achieved within the first year after diagnosis, confirming the importance of early detection. For more advanced stages, excess mortality remained significant between 5 and 10 years after diagnosis. Stage-specific long-term survival information is crucial for better planning follow-up care of cancer patients.

Title **Code** 145

THE UK-US CHILDHOOD CANCER PILOT: ENABLING INTERNATIONAL CANCER REGISTRY COLLABORATIONS WITH PRIVACY-ENHANCED ANALYTICS

Authors Names

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Theme

New methods innovation and AI applications

Abstract

Background: The low number of childhood cancer patients hampers the research required to advances in diagnosis, treatment, and outcome. Therefore, international data collaborations are crucial, but current initiatives face obstacles in data sharing.
A pilot study involving cancer registry data from England and the US was developed as a proof of concept to address these challenges. Within this pilot, we focused on the descriptive epidemiology of seven childhood cancers.

Methods: A patient cohort was selected from SEER (US) and NDRS in England. The data were standardized and harmonized.
A federated querying system was designed and developed to enable collaborative analyses without sharing patient-level data. Researchers can remotely query aggregate-level statistical. To mitigate reidentification risks, differential privacy, coupled with count suppression, is applied. This setup helps prevent direct access to intermediate results, such as model weights or pre-aggregated statistics, that could inadvertently disclose sensitive information.

Results: Guided by the study design, a federated querying infrastructure was implemented. Data holders can configure local privacy and data protection settings to align with their governance requirements. The system offers a suite of common analytical tools, all secure and privacy-enhanced.

Discussion & Conclusion: A federated querying system has been developed in this pilot, demonstrating the potential to scale to multiple registries, facilitating large-scale international data collaborations. By allowing researchers to conduct a predefined set of operations, epidemiological indicators can be computed remotely on demand. This arrangement empowers cancer registries to participate in international collaborations without (a) sharing patient-level data and (b) bearing the burden of manually computing and transmitting aggregated statistics. Such an approach is especially beneficial for partnerships where statistics are updated regularly.

Title **Code** 147

AVAILABILITY AND COMPLETENESS OF CANCER REGISTRIES' STAGE INFORMATION PROVIDED TO THE EUROPEAN CANCER INFORMATION SYSTEM

Authors Names

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Theme

Epidemiological clinical use of cancer registry data

Abstract

Objectives. Collection of cancer stage at diagnosis from cancer registries (CRs) is relevant to monitor European cancer burden, evaluate policies, interventions and treatments. We conducted a preliminary analysis to map the availability and completeness of information on stage provided to the European Cancer Information System (ECIS) by population-based CRs affiliated to the European Network of Cancer Registries.

Methods: Using incidence data from the ECIS data call 2022, we investigated how many general CRs submitted information on stage at diagnosis, and for individual registries the start year of stage information, if Tumour-Nodes-Metastasis (TNM) categories were provided separately or TNM stage was directly reported, the TNM edition used, if reporting was according to other staging systems, and the proportion of cases with complete information on TNM stage. The analysis focused on six cancer entities (i.e., stomach, colorectum, lung, breast, cervix, and prostate) and included data collected from 1990 onwards.

Results. In the period 1990-2022, 65 out of 84 CRs (77%) provided some information on cancer stage at diagnosis; of these, 63 (97%) CRs used the TNM classification system, even if four CRs coded significant proportions of their cases using other staging systems. Many countries showed improvements in providing TNM cancer stage information across calendar years. Over the period 2017-2019, in most European countries the proportion of cancer cases with information on stage was more than 80% for breast, colorectal, and cervical cancers, and over 70% for gastric, lung, and prostate cancers. However, still low TNM stage recording (<50%) was observed overall in a few countries, namely Romania, Spain, and Italy.

Conclusion. Although information on stage at diagnosis has been reported for a high proportion of cancer cases in many European countries in the recent period, low levels of stage recording remain in a few others, with a high potential for improvement.

Title **Code** 160

MODERNIZING MOROCCO'S CANCER REGISTRY WITH A FULL-WEB INFORMATION SYSTEM

Authors Names

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Theme

New methods innovation and AI applications

Abstract

Objectives: Population-based cancer registries (PBCRs) are vital for cancer surveillance and guide Morocco's National Cancer Prevention and Control Plan. The PBCR of Casablanca, covering 12% of Morocco's population, extrapolates national cancer incidence. However, current reliance on CanReg5 (IARC open-source software) has limitations.
Main objective: to modernize the PBCR with an integrated, user-friendly system supporting automated data collection, rigorous validation, enhanced security, and potential for future AI-driven analytics.
Other objectives: to improve data quality and optimize the time required for analyzing and publishing incidence reports.

Methods: Registry reorganization was analyzed through workshops and site visits with stakeholders. Data collection processes were optimized by refining data fields from various sources. The solution's design incorporated consistency checks based on international standards. Comparing GLOBOCAN and PBCR Moroccan data with the IARC identified discrepancies. A Moroccan health IT provider developed a tailored web-based information system for cancer registry management.

Results: The data collection process was modernized and standardized, reducing the registrars' on-site visits to health facilities. Data quality was enhanced through automated checks during analysis and validation phases, focusing on consistency and completeness. The implementation of international frameworks and repositories, further strengthened data validation. Collaboration with the Ministry of Health enabled the inclusion of mortality data to insure data completeness. The system also provides interactive dashboards to support evidence-based decision-making and enhance cancer control strategies.

Conclusions: PBCRs in low-income countries face challenges. Strengthening regulations is key to ensuring case sources adhere to data collection protocols. This system represents a critical step toward sustainable, data-driven cancer control in Morocco.

Title **Code** 179

PRE-DIAGNOSTIC CONSULTATIONS AND IMAGING INVESTIGATIONS IN EMERGENCY-DIAGNOSED VS REFERRED LUNG CANCER PATIENTS

Authors Names

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Theme

Epidemiological clinical use of cancer registry data

Abstract

Background: Emergency diagnosis of lung cancer is common and associated with worse prognosis. We examined whether pre-diagnostic healthcare use differed between emergency-diagnosed and primary care referred patients.

Methods: We analysed linked English primary (CPRD Gold), secondary care (HES APC), imaging (HES DID), and national cancer registry (NCRAS) data on patients aged 30-99 from a random sample with lung cancer (2007–2018). We examined when all consultations, and with selected symptoms, and chest imaging rates increased in the 12 months pre-diagnosis by diagnostic route (emergency, routine or urgent referral), comparing route-specific rates and inflection points using Poisson regression, adjusting for patient factors.

Results: A total of 4,473 lung cancer patients were identified. Among emergency-diagnosed (n=1,491; 33%) patients, over 98% had at least one primary care consultation for any reason, with rates increasing 5 months prior to diagnosis. Rates increased at the same time or closer to diagnosis for emergency-diagnosed compared to routinely or urgently referred patients across healthcare use types. Referred patients had more cough consultations than emergency-diagnosed patients (adjusted Incidence Rate Ratio [aIRR]: 1.90 for routine referrals, 1.94 for urgent referrals). Referred patients had more chest X-rays, occurring 4-6 months prior to diagnosis compared to emergency-diagnosed patients (aIRR: 1.91 for routine, 1.77 for urgent referrals).

Conclusion: Emergency-diagnosed patients had lower rates of consultations for any reason, for cough, and fewer chest X-rays compared to urgently and routinely referred patients. This may reflect differences in tumour characteristics, signs and symptoms patients present with and reduced imaging opportunities. Improving referral pathways after non-specific symptom presentations and follow-up after imaging may help diagnose cancer earlier across all routes.

Title **Code** 180

LIVER CANCER BURDEN IN EUROPE WITH A FOCUS ON HISTOLOGICAL SUBTYPE PATTERNS

Authors Names

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Theme

Social inequalities and cancer

Abstract

Objectives: Liver cancer is the sixth most common cause of cancer death in Europe, showing high geographical variability and increasing trends. We performed a preliminary analysis to estimate liver cancer burden in Europe by histological subtype.

Methods: We analysed data provided to the European Cancer Information System (ECIS) by 84 population-based cancer registries affiliated to the European Network of Cancer Registries (ENCR) from 20 European countries. We focused on the following liver carcinoma subtypes: intrahepatic cholangiocarcinoma (ICC), hepatocellular carcinoma (HCC). We calculated age-standardised cancer incidence rates (ASIRs), adjusting for the European standard population 2013, by sex and carcinoma subtype on the period 2017-2019. We also estimated country-specific time trends of cancer incidence by pooling together regional cancer registries where needed.

Results: Liver cancer ASIRs were higher in men (median value 19 per 100,000) than in women (6 per 100,000) with a male-to-female sex ratio varying from 2 to 6 across registries. ASIRs showed great variability across European registries: almost fourfold (from 8.7 to 37.5) in men and fivefold (from 3.3 to 18.4) in women. HCC showed higher incidence than ICC mainly in men (10.3 and 3.4 in men and 2.6 and 2.4 in women), being HCC rates up to 8 times higher than ICC rates across registries in men, and up to 5 times in women. Liver cancer subtypes showed different trend patterns, being ICC rates generally stable or increasing over time, while HCC rates generally stable or decreasing, with some exceptions.

Conclusion: Liver cancer burden presents high geographical, sex and histological subtype variations attributable to the effect of several factors including alcohol consumption, obesity, liver diseases and social determinants, plus hepatitis B and C infections and hepatitis B vaccination mainly on HCC trends. These disparities need more efforts for tailored prevention and healthcare policies.

Title

Code 182

SURVIVAL IN ADOLESCENTS AND YOUNG ADULTS WITH CANCER COMPARED WITH CHILDREN AND ADULTS IN EUROPE: A EUROCARE6 STUDY

Authors Names

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Theme

Survival

Abstract

Objectives: In Europe, cancer survival rates are high and improving for children (0-14 years) and adolescent and young adults (AYAs: 15–39 years). However, AYAs often have worse outcomes than children but better than adults. Using EUROCARE data, this study analyses 5-year relative survival (RS) across age groups, highlighting age-specific differences and survival trends over time to address persistent disparities.

Methods: Data were collected from 95 European population-based cancer registries, covering 57% of the European population. Analyses included malignant cancers diagnosed between 2006 and 2013. Five-year RS was estimated using the period approach for follow-up between 2010 and 2014. Comparisons between AYAs, children, and adults (40-69 years) were conducted using the Z test for absolute differences. Changes in survival trends over time were analysed from 2004 to 2013 using the Average Annual Percentage Change (AAPC).

Results: AYAs had lower 5-year RS than children for hematologic cancers, particularly acute lymphoblastic leukaemia (61% vs. 90%) and Ewing sarcoma (51% vs. 69%). Survival gaps were smaller for central nervous system tumours, germ cell tumours, and thyroid carcinoma. Compared to adults, AYAs had higher 5-year RS for most cancers, except breast, colon, and prostate cancers. Over time, 5-year RS improved across all age groups, with AYAs showing faster improvement than children but slower progress compared to adults for certain cancers.

Conclusion: Age-specific disparities in cancer survival persist despite overall improvements. Tailored treatment approaches, specialised AYA oncology programs and collaboration between paediatric and adult oncologists are crucial to bridging survival gaps and improving outcomes for this population.

Title **Code** 184

THE OMOP COMMON DATA MODEL AS A FACILITATOR FOR FAIRIFICATION OF POPULATION-BASED CANCER REGISTRIES

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Theme

New methods innovation and AI applications

Abstract

Objectives: Population-based cancer registries (PBCR) have highly recognized expertise in data standardization and harmonization for comparable epidemiological parameters (e.g. incidence, mortality, survival). Numerous PBCR also collect high-resolution data on diagnosis and treatment. The OMOP (Observational Medical Outcomes Partnership) Common Data Model (CDM) is an open community framework aiming to facilitate secondary use for observational research. By harmonizing data across different classification systems (e.g. ICD-O-3, ICD-10, SNOMED-CT), the model enables analyses across different sources without need for data centralization. We investigated the feasibility and added value of the adoption of OMOP-CDM by PBCR.

Methods: Five PBCR mapped breast cancer data (patient/tumor characteristics, diagnostics, treatment, outcome) to the OMOP-CDM. Mapping was performed using OHDSI open-source tools in combination with in-house tools. Next, we executed comparative analyses for breast cancer indicators across the PBCR in a federated manner leaving data at the place of origin.

Results: Mapping PBCR data to the OMOP-CDM requires a short term time investment but is feasible. The data conversion led to improved and harmonized data quality, resulting in more robust and consistent analyses. By facilitating research without central data collection, the model increases data confidentiality and security in compliance with regional regulations and access rules. OMOP-isation of PBCR may be a boost towards international research that includes OMOP-data such as IDEA4RC, EUCanScreen and DARWIN EU. However, the maintenance of the OMOP infrastructure and the need for regular updates make it resource-intensive.

Conclusions: The OMOP-CDM can facilitate FAIRification of PBCR to generate Real-World Evidence. As PBCR data may be complex and require specific knowledge to be understood correctly, mapping should preferably be done by the cancer registries themselves, provided necessary resources.

Title **Code** 200

POPULATION ATTRIBUTABLE FACTORS RELATED TO CANCERS INCIDENT IN LUXEMBOURG: A RELIANCE PILOT STUDY

Authors Names

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Theme

Epidemiological clinical use of cancer registry data

Abstract

Introduction: Cancer is a major global health concern, contributing to over a fifth of all deaths caused by non-communicable diseases. Furthermore, lung cancer accounts for nearly one-fifth of all cancer-related fatalities, with colorectal cancer ranking closely behind. This study investigates into population attributable factors (PAF) related to smoking and to body mass index (BMI) on lung and colorectal cancer, respectively, as well as the influence of air pollution on each cancer type, in Luxembourg.

Methods: Lung, colorectal and all cancers cases incident in 2019 were extracted from the National Cancer Registry of Luxembourg, as well as smoking habits, height and weight, and commune of residence at diagnosis. Population level prevalence of smoking and BMI were obtained from the 2019 wave of the European Health Information System conducted in Luxembourg. Population size estimates (ages 15+, and 18+) were obtained from STATEC at Luxembourg commune level. Additionally, air pollution levels, assessed through the average concentration of PM2.5, were calculated for each commune to determine their respective air quality index.

Results: In 2019, 304 incident lung cancer cases (age 15+) include 113 cases from patients with a smoking history, resulting in a PAF for current smoking of 36.79%. Among 311 colorectal cancer cases (age 18+), 65 were diagnosed in patients with a BMI > 30 resulting in a PAF of 11.13%, while 149 patients had a BMI > 25 leading to a PAF of 20.79%.

Conclusion: Within Luxembourg, smoking behavior and higher values of BMI may be related to a substantial proportion of lung and colorectal cancer. While our findings are based solely on data from 2019, they highlight the importance of reinforcing tailored prevention efforts, particularly in smoking cessation and the promotion of healthy eating and sufficient physical activity. Nonetheless, longer observation periods are necessary to assess trends and better understand how these factors evolve over time.

Title **Code** 202

INEQUALITIES IN CANCER RISK AMONG MIGRANT POPULATIONS IN A REGION OF SOUTHEASTERN SPAIN

Authors Names

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Theme

Social inequalities and cancer

Abstract

Objectives: Cancer Murcia Registry has participated as a cancer registry pilot in RADAR Cancer Project, which aims the quantification the cancer risk by migrant population in Europe. In this communication are shown some of the results obtained in Region of Murcia (RM), about cancer risk by United Nation (UN) subregion of origin.

Methods: Data come from the population-based cancer registry of RM. (World) age-standardized rate ratio compared with host population (ASIRR), (World) Age-Standardized Incidence Rate Ratio compared to the national incidence from GLOBOCAN (ASIRR_glonat) and (World) Age-Standardized Incidence Rate Ratio compared to EU27 incidence (ASIRR_gloeu27), were calculated for breast, cervical, colorectal, lung, stomach, liver and all cancers, by UN subregion of origin and sex, for the periods 2003-2007, 2008-2012 and 2013-2017. Analysis was made with Cancer RADAR project R package.

Results: A significant ASRR of cervical cancer is highlighted in women from Eastern Europe (EE) of 4.33, 3.83, and 3.44 and in those from Latin America (LA) of 3.19, 2.91, and 1.79, in the successive periods respectively and of lung cancer in women from Northern Europe (NE) in 2013-2017 (1.96). ASIRR of less than 1 is observed in women from LA, NE and North Africa for all cancers, breast and colon in two last periods. In men, an ASIRR of less than 1 is noted for most tumors. Similar results of ASIRR_glonat and ASIRR_gloeu27 for cervical cancer are seen in women from EE and LA, and in men for most of cancers studied.

Conclusions: Cervical cancer risk in women from EE and LA has been 4 and 3 times higher resp. than the one in RM, nevertheless this ratio has decreased throughout the periods studied. This may be due in part to a lower access to cervical cancer screening, which at that time was opportunistic in RM. High lung cancer risk in women may be related to smoking habit, More actions to reduce inequalities in cancer prevention and care are necessary.

Title **Code** 205

THE IMPACT OF THE COVID-19 PANDEMIC ON CANCER INCIDENCE, SURVIVAL, STAGE AND HEALTHCARE OUTCOMES IN SWITZERLAND

Authors Names

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Theme

Epidemiological clinical use of cancer registry data

Abstract

Objectives: The COVID-19 pandemic disrupted healthcare systems worldwide. This raised concerns about delays in cancer diagnosis and treatment, with potentially worse patient outcomes. The aim of this nationwide, population-based cohort study was to investigate the impact of the COVID-19 pandemic on cancer incidence, stage distribution, one-year survival, time between diagnosis and start of treatment, received treatments and detection by organized screening programs in Switzerland.

Methods: We used national cancer registry data from 2017-2021 of the National Agency for Cancer Registration in Switzerland, including all except three cantons due to incomplete data before 2020. The analyses were performed for all cancers and separately for female breast cancer, colorectal cancer, lung cancer, melanoma, and prostate cancer. Results were analyzed descriptively.

Results: We included 218,736 cancer cases diagnosed between 2017 and 2021. Annual incidence counts of all cancer cases increased in 2020 (2.1%) and 2021 (7.3%) compared to the mean of 2017-2019. The observed and relative one-year survival for all cancers and individual cancer types was similar in 2020 and slightly higher in 2021 compared to 2017-2019. We found no clear shift in stage distributions across 2017-2021. The time from diagnosis to surgery, chemotherapy and radiotherapy for all cancers was the shortest during the lockdown in March and April 2020 (median: 8, 29 and 68 days, respectively) compared to other time periods in 2020 and 2021, but the number of patients treated was the lowest. The proportions of breast and colorectal cancer diagnosed in screening programs were lower in 2020 than in 2021 but higher compared to 2019.

Conclusions: This nationwide study suggests that the pandemic had no major negative effect on short-term cancer patient outcomes, treatment and cancer screening in Switzerland. These findings are of importance for policy makers and the public health system regarding future pandemics.

Title **Code** 210

CAUSES OF DEATH IN SURVIVAL ANALYSIS OF CANCER PATIENTS

Authors Names

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Theme

Epidemiological clinical use of cancer registry data

Abstract

Objectives: Cancer survivors are a vulnerable population group for several reasons (treatments, shared risks factors, genetic), therefore they are a population with a higher risk of dying from other diseases compared to the general population. Our aim is to analyse causes of death (CoD) in cancer patients information and compare cancer-specific with relative survival for ten adult cancers.

Methods: We analysed 1,813,356 first primary tumours diagnosed in patients aged 15-79, from 1998 to 2013 and followed-up to 31/12/2014, from 17 selected registries with >89% completeness of CoD from EUROCARE-6. We compared the observed deaths not attributed to the diagnosed cancers with the expected deaths calculated from the population life table probabilities by sex, age class and calendar year.

Results: RR of non-cancer death greater than 2 compared to the general population were found for H&N (2.1) and for female lung (2.6) cancers. Values between 1 and 2 were observed for stomach (1.3 in males and 1.5 in females), male lung (1.9), cervix (1.6), ovary (1.6), kidney (1.1 and 1.3) and bladder (1.3 and 1.4). RR lower than 1 were estimated for prostate (0.8), and female breast (0.9) cancers. Most tumours showed a systematic decrease by age of RR of death from other causes. Head and neck cancer patients had the highest differencesbetween cancer specific and relative survival, with the former being at 10-years 7-11 % points above the latter. Lower differences (2 - 6 % points), were observed for bladder, stomach, lung, cervix, ovary, and kidney cancers.

Conclusion: Separating deaths due to cancer progression from those due to other causes, including other independent cancers, has an impact on patients follow-up and quality of life. Cancer registries usually collect CoD data from official sources and only sporadically check their quality using other available information. Validation and improvement of CoD information should enter into the main objectives of cancer registries.

Abstracts

Poster

Title

Code 1

EPIDEMIOLOGICAL DYNAMICS OF ESOPHAGEAL CANCER IN KAZAKHSTAN: INSIGHTS FROM A POPULATION-BASED CANCER REGISTRY

Authors Names

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Theme

Epidemiological clinical use of cancer registry data

Abstract

Although numerous studies on esophageal cancer (EC) in Kazakhstan exist, most are outdated and provide limited evaluations of the disease's trends and survival outcomes. This study aims to address these gaps by analyzing EC incidence, prevalence, mortality, DALYs and survival trends using data from the national population-based cancer registry.

The study cohort included adults diagnosed with EC in Kazakhstan between 2014 and 2023. Data from the Electronic Cancer Patients Registry were analyzed using descriptive statistics, Cox proportional hazards regression, and Kaplan-Meier survival methods. Risk factors were assessed through the Unified Nationwide Electronic Health System (UNEHS). The average age at diagnosis was 66.9 years, with the highest incidence and mortality in patients aged 75 and older. Squamous cell carcinoma accounted for 72.4% of cases. Advanced-stage diagnoses were associated with high mortality, particularly at stage IV, with 721 deaths per 1,000 person-years.

Kaplan-Meier survival analysis revealed sharp declines in survival with increasing age and advanced disease stages, with a median survival of 217 days. Temporal trends highlighted rising prevalence alongside stable mortality, suggesting underdiagnosis and late-stage detection. These findings emphasize the urgent need for targeted prevention strategies to improve detection, survival and address the substantial burden of EC.

Title **Code** 2

CHILDHOOD CANCER IN MOROCCO ACCORDING TO CASABLANCA CANCER REGISTRY

Authors Names

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Theme

Epidemiological clinical use of cancer registry data

Abstract

Objectives: Childhood cancer is a spectrum of different malignancies occurring in younger less than 20 years of age. These cancers represent a multitude of rare diseases and a significant cause of death among children and adolescents worldwide, both in developed and developing countries. The aim of this work is to estimate the childhood cancer incidence rate and describe the most common sites.

Methods: Casablanca cancer registry is a population-based cancer registry established in 2004 and covers more than 4 million inhabitants in the Greater Casablanca region. Data collection is done actively by registrars trained in different health services in the public and private sectors. IARC standards are adopted and Canreg 5 is used to enter data. In this work, we analyze data from 2013 to 2017.

RESULTS: A total of 494 cases were registered among children aged between 0 and 14 years, this corresponds to an overall crude rate of 93.1 per 1 million. This rate is slightly higher in males compared to females with a crude rate of 104.0 and 81.8 per million respectively. The most common type of cancer was hematological malignancies, accounting for 32.5% of the total registered cases in children, with a crude rate of 38.4 and 20.1 per 1 million among boys and girls, respectively. The other common types of cancer were brain and central nervous system, kidney, and urinary tracts then thyroid and other endocrine Glands with a proportion of 21%, 12.3%, and 9.8% respectively in both males and females.

CONCLUSION: Childhood cancers remain a public health issue especially in low- and middle-income countries due to the significantly lower survival rates compared to high-income countries.

Title

Code 3

EVOLUTION OF SMOKING, INCIDENCE AND MORTALITY OF LUNG CANCER IN BRAZIL (2000-2020)

Authors Names

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Theme

Epidemiological clinical use of cancer registry data

Abstract

Introduction: Lung cancer is one of the most common forms of cancer and a leading cause of death from the disease in both men and women in Brazil and worldwide. Smoking, the primary risk factor, is responsible for about 80% of lung cancer deaths in the country, underscoring the importance of smoking prevention and control strategies.
Objective: The study aims to present information on smoking and lung cancer incidence and mortality trends in Brazil, its Regions, Capitals, and the Federal District, stratified by sex.

Method: Data on smoking were obtained from three main sources: the 2019 National Health Survey (PNS), the 2019 National School Health Survey (PeNSE), and the Vigitel system, with data from 2006 to 2020. Lung cancer incidence rates were calculated using data from the Population-Based Cancer Registries (RCBP) in Brazil from 2000 to 2019. Mortality rates were calculated using data from the Brazilian National Mortality System. Trend analyses were conducted using the Joinpoint regression model, with age adjustments and statistical analyses carried out using the Joinpoint, R, and Epi Info software.

Results: In Brazil, the highest prevalence of adult smokers was found among men (16%), with the Southern Region showing the highest percentage of adult smokers. Overall, the incidence of lung cancer has decreased among men during the analyzed period; however, an increase in the disease rates among women is still observed. The pattern of evolution of lung cancer mortality rates in Brazil, between 2000 and 2022, was characterized by a decline among men and stability among women from 2015 onwards.

Conclusion: The results highlight the urgency of intensifying and adjusting tobacco control policies, with special focus on youth and women, in order to preserve public health in Brazil.

Title **Code** 4

IMPACTS OF SMOKING: BEYOND LUNG CANCER

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Theme

Epidemiological clinical use of cancer registry data

Abstract

Introduction: Cancer is the second leading cause of death in Brazil, with 239,000 deaths in 2022 and an estimated 704,000 new cases for 2024. The types of cancer analyzed in this study account for 17.2% of the estimated cases. Although smoking is automatically associated with lung cancer, it is also linked to other tobacco-related cancers.
Objective: To describe information on the incidence, mortality, and lethality of seven types of smoking-related cancers, excluding lung cancer.

Method: The selection of tumors was based on the magnitude of disease incidence and attributable fraction. The selected cancers include oral cavity (C00-10), esophagus (C15), stomach (C16), colorectal (C18-21), larynx (C32), cervix (C53), and bladder (C67). Age-adjusted incidence rates were obtained from the National Cancer Institute and Brazilian PBCR, and mortality rates from the Online Mortality Atlas. Estimated lethality was calculated using the mortality-to-incidence ratio (M:I). Analyses were stratified by Brazil and its regions.

Results: In Brazil, cancer lethality is high for these types analyzed: oral cavity (43% in men, 28% in women), esophagus (over 80%), stomach (71%), colon and rectum (40%-60%), and larynx (48%-88%). For cervical and bladder cancer, the highest lethality was recorded in the Northern region, at 53% and 61%, respectively.

Conclusion: The elimination of smoking and the regulation of electronic devices, such as e-cigars or vapes, are global public health priorities. While traditional tobacco use remains one of the leading preventable causes of chronic diseases and premature deaths, vapes - popular among both young people and adults - bring uncertainties regarding their long-term impacts. In this context, Brazil has a successful history of implementing robust measures aimed at reducing smoking initiation and promoting cessation through its National Tobacco Control Policy, but these new devices signal a warning that requires continuous monitoring and regulation.

Title **Code** 5

CHALLENGES IN IMPLEMENTING THE PBCR IN NITERÓI-BRAZIL: ALTERNATIVE STRATEGIES FOR INCIDENCE ESTIMATION

Authors Names

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Theme

Results from new cancer registries

Abstract

Introduction: Population-Based Cancer Registries (PBCR) are crucial for epidemiological surveillance, providing more accurate cancer incidence estimates. In Brazil, despite the mandatory cancer notification law from 2018, the lack of regulation and the restrictions of the General Data Protection Law (LGPD) hinder the inclusion of private sector data, leading to underreporting. The PBCR in Niterói aims to gather comprehensive data on all cancer cases in the municipality but faces challenges requiring alternative strategies for more accurate estimates.

Objective: To describe and estimate cancer incidence in Niterói during 2022 and 2023.

Method: Incident cases were obtained from both public and private healthcare facilities. Data collection began with public units, while integration of private facilities is ongoing due to complex registration processes. To address the lack of private sector data, the proportion of private healthcare beneficiaries was applied to Niterói's population. The crude incidence rate was calculated based on this distribution.

Results: The initial phase of cancer case collection in Niterói was successfully completed, with data obtained from public-affiliated healthcare units. The application of the proportion of private healthcare beneficiaries proved to be a viable approach. The most common cancer types, excluding non-melanoma skin cancer, were prostate, colon, and bladder in men, while breast, cervical, and colon cancer were the most frequent among women.

Conclusion: While the PBCR in Niterói is advancing, the lack of regulation for compulsory notification and LGPD restrictions limit private sector participation, affecting data completeness. Using the National Supplementary Health Agency (ANS) proportion is a viable alternative for estimating cancer incidence but does not replace the need for complete data access. Expanding and strengthening the registry is critical to improving cancer surveillance in the municipality.

Title

Code 7

RECORDING PROSTATE CANCER RECURRENCE AND PROGRESSION - NEW ENCR GUIDELINES FOR POPULATION-BASED CANCER REGISTRIES

Authors Names

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Theme

Epidemiological clinical use of cancer registry data

Abstract

Objectives: Prostate cancer (PCa) can be indolent and grow slowly or aggressive and spread quickly. Internationally consistent, valid and reproduceable data on recurrences and progression at population level may help define these types. We describe the new recommendations on registering PCa recurrence and progression and identify areas for further work.

Methods: A European Network of Cancer Registries (ENCR) Working Group of 29 members after 15 meetings prepared a protocol on recording cancer recurrence, progression and transformation episodes for solid and haematological malignancies. The official protocol reviewed by the ENCR Steering Committee is available at https://www.encr.eu. Additional, specific work on PCa is being undertaken including reviewing the scientific literature, the latest WHO classification on prostate tumours, the UICC Control TNM Classification of Malignant Tumours, 8th ed. and the latest guidelines from the European Association of Urology, American Urological Association and the National Comprehensive Cancer Network.

Results: The ENCR guidance indicates that after initial cancer registration of a primary tumour and post tumour reductive treatment a raised prostate-specific antigen (PSA) requires clinical or other evidence to be considered recurrence or progression. For this work active surveillance is not considered tumour reductive treatment. While most PCa cases can be registered using the ENCR protocol on cancer recurrence and progression, there are some specific PCa features that need further consideration, such as castration-resistant PCa, number and location of metastases, and treatment-related transformation into neuroendocrine PCa.

Conclusions: The PCa guidelines can facilitate collection of standardized data that allow valid international comparisons, better disease management and help differentiate indolent from aggressive types. This will help to develop specific health care policy, and new artificial intelligence algorithms.

Title

Code 8

CHANGING PATTERNS OF CLINICOPATHOLOGIC CHARACTERISTICS OF COLORECTAL CANCER IN THE PROVINCE OF BEJAIA, ALGERIA, 2004-202

Authors Names

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Theme

Epidemiological clinical use of cancer registry data

Abstract

Background: Colorectal cancer (CRC) is a major public health problem in Algeria, however, little is known about its clinical and pathological characteristics. We carried out an analysis to describe the clinical and pathological profile of CRC patients, diagnosed in the province of Bejaia, Algeria, over a 20-year period.

Methods: The information on CRC patients was extracted from medical records and pathology reports. We described the clinical and pathological characteristics of cancers of the colon and the rectum, separately.

Results: Between 2004 and 2023, 1 272 new CRC cases were diagnosed, among which 772 (60,7%) were located in the colon. The male-to-female sex-ratio was 1,36:1 for colon cancer and 1,54:1 for rectal cancer. The mean age at diagnosis was 60,1±14,0 for colon cancer and 61,1±14,1 for rectal cancer. The first symptoms were dominated, for colon cancers, by abdominal pain (29,2%), transit disorders (19,9%) and rectal bleeding (19,4%), and for rectal cancers by rectal bleeding (50,6%), transit disorders (26,8%) and abdominal pain (26,4%). About 33% of colon cancers and 17,0% of rectal cancers were diagnosed following emergency surgery, dominated by acute intestinal obstruction (28,2% and 14,8%). Ulcerating, infiltrating and stenosing features accounted for 64,2% and 73,1%, 50,9% and 44,2%, 50,3% and 42,2%. Vascular embolism and perineural neoplastic invasion were observed in 17,8% and 9,8%, and 12,0% and 8,0% of cases respectively. Stage III and IV accounted for 60% of colon cancers and 68,2% of rectal cancers. Metastases were present in 31,7% of colon cancers and 39,1% of rectal cancers, with liver (22,0% and 23,0%) and lung (7,1% and 11,8%) being the most frequent sites.

Discussion: Our study confirms the need to set up CRC organized screening program.

Title **Code** 9

COMORBIDITY AND COLORECTAL CANCER : A POPULATION-BASED STUDY IN ALGERIA

Authors Names

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Theme

Epidemiological clinical use of cancer registry data

Abstract

Introduction: Since the mid-1980s, Algeria has undergone an epidemiological transition marked by a continuous increase in the prevalence of non-communicable diseases (NCDs). Colorectal cancer (CRC) is a major public health concern, but no studies so far have described NCDs associated with CRC. We conducted an analysis to estimate the prevalence of NCDs in patients diagnosed with CRC, in the province of Bejaia, Algeria, during 2004-2023.

Methods: Data were collected retrospectively from medical records and pathology reports. We estimated the prevalence of NCDs associated with CRC, in men and women, and for colon and rectal cancers.

Results: Between 2004 and 2023, 1 272 CRC cases were diagnosed, of which 772 (60,7%) were located in the colon. The mean age at diagnosis was 60,1±14,0 for colon cancer and 61,1±14,1 for rectal cancer. For colon and rectal cancers, the NCDs most frequently observed were arterial hypertension (23,5% and 21,6%; p=0,45), and type 2 diabetes (T2D) (15,2% and 17,4%; p=0,29). The prevalence of polymorbidity was 17,7% and 17,6%; respectively; p=0,90). Over the studied period, the prevalence of arterial hypertension increased from 12,8% to 29,3% (p=0,002) for colon cancer and from 9,1% to 28,0% (p<0,001) for rectal cancer, while the prevalence of T2D rose from 6,4% to 20,2% (p<0,001) and from 8,0% to 24,0% (p<0,001). The prevalence of polymorbidity also increased (8,5% to 21,1% (p=0,06), and 4,5% to 22,1% (p=0,03)). The prevalence of arterial hypertension rose from 10,0% to 24,0% in men (p=0,01), and from 15,8% to 35,0% in women (p<0,001), and that of T2D from 2,0% to 20,2% (p<0,001) in men, and from 10,5% to 23,8% (p=0,06) in women.

Discussion: The prevalence of arterial hypertension and T2D in CRC patients exceeds that estimated in the Algerian general population. Such findings highlights the need to raise public awareness to adopt a healthy lifestyle in order to prevent the proportion of NCDs attributable to modifiable risk factors.

Title **Code** 10

COLORECTAL CANCER INCIDENCE AND TRENDS BY SEX, AGE AND ANATOMIC LOCATION, IN THE PROVENCE OF BEJAIA, ALGERIA, 2009-2023.

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Theme

Epidemiological clinical use of cancer registry data

Abstract

Introduction: The incidence of colorectal cancer (CRC) has increased dramatically in Algeria over the past several years. We estimated CRC incidence and annual percent change (APC) in the province of Bejaia, over the period 2009-2023.

Methods: We used the Bejaia population-based cancer registry to estimate CRC standardized incidence rates (SIR) with the direct method, expressed per 100 000, and APCs, for colon and rectal cancers separately.

Results: Between 2009 and 2023, 1 911 new CRC cases were recorded, of which 772 (60,7%) were located in the colon. SIR was 8,6 for colon cancer and 5,7 for rectal cancer. SIRs significantly increased over the study period (0,1 to 9,5 for colon cancer (APC: +8,9%; p<0,05), and 0,1 to 9,6 for rectal cancer (APC: +10,8%; p<0,05)). The most marked increases were observed in individuals aged ≥ 50 years (0,1 to 40,0 for colon cancer (APC: +10,4%; p<0,05) and 0,3 to 38,7 for rectal cancer (APC: +11,7%, p<0,05)). Stage III and IV accounted for 60,0% of cancers of the colon, and 68,2% of those of the rectum, with SIR of 18,1 and 14,7 (APC: +10,5% and +8,6%) for colon cancer, and 12,8 and 12,3 (APC: +16,7% and +7,9%) for rectal cancer. Synchronous metastases were diagnosed in 198 (17,3%) patients with colon cancer (SIR: 14,7), and 164 (21,6%) patients with rectal cancer (SIR 12,4). The most frequent metastatic sites were the liver (79,8%), and lungs (26,8%) for colon cancer (SIR: 11,9 and 3,9), and the liver and lungs (68,5%, SIR: 8,6 and 34,5%, SIR: 4,3) for rectal cancer.

Discussion: Our study confirms the upward trends for CRC observed in other regions of the country, as well as in most regions of the world. This increase in incidence rates and the late stage at CRC diagnosis highlights the urgent need to set up a screening program.

Title

Code 11

RESULTS OF THE EFFECT OF A MOBILE UNIT ON PARTICIPATION AND SOCIAL INEQUALITIES IN ACCESS TO BREAST CANCER SCREENING

Authors Names

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Theme

Screening

Abstract

Objective: To assess the increase in participation resulting from using a mobile mammography unit in the French populations remote from the radiology offices (RO), and its effect on social inequalities in participation in breast cancer screening.

Methods: We use data from a prospective randomised cluster trial conducted between March 2022 and October 2023 in 4 departments in the Normandy region (France) in areas distant (more than 15 minutes) from the RO. This population health intervention research project included 87,449 women aged between 50 and 74. These women were eligible for organised breast cancer screening and lived in areas randomised for the study: 178 Control areas including 49067 women and 142 Intervention areas including 38382 women. In intervention areas, the intervention consisted of offering an appointment at the mobile unit, in addition to the usual screening appointment. Women retained their choice of screening location. Participation rates were calculated by area, level of social disadvantage and age, then compared between the two arms and according to the deprivation quintiles in each arm.

Results: Our findings show that the intervention of the Mammobile significantly increases the participation rate in screening in the targeted areas. The increase was 8% for all Intervention zones, ranging from 8% to 13% depending on the department. The intervention had a significant effect on social inequalities, which seems to be more reduced in these areas, the social gradient in participation in screening between deprivation quintiles is more attenuated.

Conclusion: Following these results on the increase in raw participation in screening, we will conduct multivariate modelling of individual participation. This analysis will allow us to consider possible confounding factors and highlight possible interactions with contextual elements to evaluate the effectiveness of the Mammobile better.

Title **Code** 12

TEMPORAL TRENDS AND SPATIAL DISTRIBUTION OF LIP, ORAL CAVITY, AND PHARYNGEAL CANCER IN SERGIPE, BRAZIL

Authors Names

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Theme

Epidemiological clinical use of cancer registry data

Abstract

Objectives: Lip, oral cavity, and pharyngeal (LOCP) cancer represent a public health concern in low- and middle-income countries (LMIC). Despite advances in cancer control, disparities persist due to uneven healthcare access and late-stage diagnoses. This study aims to assess temporal trends and geographic patterns of LOCP cancer incidence and mortality in Sergipe, Brazil, characterized by socioeconomic disparities, to identify regional variations and gaps in cancer control.

Methods: This retrospective, population-based study used data from the Aracaju Cancer Registry and the Mortality Information System. Age-standardized incidence and mortality rates were calculated for 1996–2017 (incidence) and 1996–2022 (mortality). Joinpoint Regression analyzed time trends by calculation of Annual Percent Change (APC) and Average Annual Percent Change (AAPC). Spatial distribution was evaluated by Empirical Bayesian Kriging to detect high-risk clusters. The Mortality-to-Incidence Ratio (MIR) was used as a simple measure for inferring survival and cancer control effectiveness.

Results: 1,130 incident cases and 313 deaths were recorded. Incidence rates declined among women (AAPC: -2.2%; 95% CI: -3.9 to -0.4); mortality rates increased in men, with the highest burden among older adults (75+ years). Geographic disparities were observed, with higher incidence rates clustered in urbanized regions and higher mortality rates in under-resourced areas. The MIR increased over time, pointing insufficient early detection and disparities in treatment accessibility.

Conclusions: The findings underscore persistent regional and gender-based disparities in LOCP cancer outcomes, demanding equitable cancer control strategies. Targeted interventions should include enhanced early detection programs, HPV vaccination expansion, and policies to reduce tobacco and alcohol use. Strengthening cancer registries and surveillance is crucial for refining prevention policies and improving survival rates in LMIC.

Title

Code 14

CANCER MORBIDITY AND MORTALITY AMONG ADOLESCENTS AND YOUNG ADULTS (AYA) IN POLAND IN 1999-2022

Authors Names

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Theme

Age and cancer

Abstract

Objectives: Cancer in adolescents and young adults is an underestimated social problem due to its relative rarity. The aim of the study is to assess the incidence and changes in cancer over time in this age group in Poland.

Methods: Data for period 1999-2022 comes from the Polish Cancer Registry. The AYA group was assumed to be people aged 15 to 39 years. Incidence and mortality rates are presented in the following age groups: teenagers: 15-19, adolescents: 20-29, and young adults: 30-39.

Results: In Poland, in 2022, 8,674 cancer cases were diagnosed in the group of adolescents and young adults (4.8% of all cancer cases). Cancers in this group occur more frequently among women (5,668 cases) than among men (2,922 cases). Deaths are slightly more frequent in the population of men than in women (602 vs. 588). In the group of teenage men, the most common was Hodgkin lymphoma (22%) and testis cancer (13%). Among adolescents, testicular cancer was dominant - almost 40%. Among young adults, testicular cancer also dominated (28%). In the group of women in teenagers, thyroid cancer dominated (29%). Among adolescents thyroid cancer was still dominant (26%).Among young adults, breast cancer dominated (25%). The incidence among adolescents and young adults is on the rise, which is particularly visible among women. Morbidity rates among men increased by 60% in the period 1999-2022, while among women it doubled. In Poland, a 30% decrease in the cancer mortality rate was observed in the years 1999-2022 among adolescents and young adults. The largest decrease in the mortality rate concerns the group of adolescents (by 50% among men and by 40% among women).

Conclusions: About 5% of cancers in Poland occur in AYAs. A different trend in morbidity (increase) and mortality (decrease) is observed. The growing number of cases in AYA creates new challenges for healthcare, e.g. the need to ensure the preservation of fertility in young patients, secondary cancers in adulthood after undergoin

Title

Code 15

LONG-TERM CANCER INCIDENCE TRENDS IN AYA IN GREATER POLAND.

Authors Names

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Theme

Age and cancer

Abstract

Objectives: This study aims to analyse cancer incidence trends for the five most common sites in the Adolescents and Young Adults (AYA) in Greater Poland (GP) from 1999 to 2022.

Methods: Data were obtained for 15–39 age group from the Poland National Cancer Registry collected by the Greater Poland Cancer Registry. The five most common cancer sites were identified based on 2022 incidence statistics. Accordingly, these are: in female (F) C50, C73, D06, C81, C56, in male (M): C62, C81, C73, C43, C71. Linear trend values and statistical significance for age-standardised incidence rate (ASW) were calculated based on linear regression analysis and slope tests. Average Annual Percentage Change (AAPC) was estimated for cancers with a statistically significant increasing trend.

Results: A statistically significant increasing trend was observed for cancers in breast ($p<0.0001$ F), thyroid ($p<0.0001$ F), cervix (in situ) ($p=0.00035$ F), testis ($p<0.0001$ M) and thyroid ($p=0.0019$ M). The AAPCs were as follows: breast cancer (F) +3.81% per year, thyroid cancer (F) +4.26%, (M) +5.38%, cervical carcinoma in situ +7.15%, testicular cancer +3.42%.

Conclusions: The analysis highlights significant changes in the structure and dynamics of malignant cancer incidence among AYA in the GP. The strong increase was observed for cervical carcinoma in situ, breast and thyroid cancer in women and thyroid and testicular cancer in men. In case of Hodgkin's lymphoma (HL) in women the trend was also increasing but did not reach statistical significance. The trend for ovarian cancer was the only one showing a slight decline, which was also not significant. In men an increasing trend, though not significant, was noted for melanoma. In contrast, for HL and brain tumours the trends showed a decline, but the changes were not significant. These findings may serve as a foundation for further research on risk factors and the effectiveness of prevention and treatment strategies in AYA.

Title

Code 20

CHANGING BURDEN OF ADULT EARLY-ONSET CANCERS: A POPULATION-BASED STUDY IN SWITZERLAND

Authors Names

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Theme

Age and cancer

Abstract

Objectives: Adult early-onset cancers, that is, diagnosed before the age of 50, appear to be on the rise in many countries, raising fear in the population and putting pressure on policymakers to intervene. However, there is confusion between trends in absolute numbers, crude rates and age-standardized rates. Further, comparison with trends in later-onset cancers is often lacking, making it impossible to know whether the observed trends in early-onset cancers are age-specific. We aim to describe trends in absolute number of cases and deaths, and crude and age-standardized incidence and mortality rates of adult early- and later-onset cancers between 1982 and 2021 in Switzerland.

Methods: We will conduct a population-based study in Switzerland on cancer cases diagnosed between 1982 and 2021. Data will be obtained from the National Institute for Cancer Epidemiology and Registration. All primary invasive malignant cancer cases will be included, except non-melanoma skin cancer. Adult early-onset cancers will be defined as a diagnosis or death between 20 and 49 years. Later-onset cancers will include diagnosis or death over 50 years. Data will be further stratified by cancer types, 5-year age group and sex. The outcomes will include absolute number of cases and deaths, crude and age-standardized incidence and mortality rates per 100'000 and annual percentage changes.

Expected results: We expect an increase in the absolute numbers of cases and deaths of adult early-onset cancers and an increase in crude incidence and mortality rates. We expect age-standardized rates to be relatively stable. Comparison with trends in later-onset cancers will highlight potential age-specific differences.

Conclusions: The findings will enable healthcare professionals and policymakers to assess if interventions targeting early-onset cancers are needed. Clarifying key statistics in adult early-onset cancer epidemiology is essential and may help address public confusion and anxiety on this issue.

Title **Code** 21

INCIDENCE AND SURVIVAL OF METASTATIC BREAST CANCER IN THE CANTON OF BERN, SWITZERLAND (2014-2022)

Authors Names

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Theme

Epidemiological clinical use of cancer registry data

Abstract

Objectives: Metastatic breast cancer (MBC) is an incurable disease with symptom reduction as the main treatment goal. We aimed to describe the incidence and survival of MBC in the canton of Bern, Switzerland, and identify patient- and tumour-related factors associated with survival.

Methods: We included all patients with an MBC diagnosis (ICD-10 C50) from 2014-2022 registered in the population-based Cancer Registry of Bern. MBC was defined as Stage IV according to the International Cancer Control's TNM classification of malignant tumours. We calculated yearly age-standardized incidence rates (ASR) per 100'000 persons. Relative survival was estimated with the Ederer II method using Swiss population life tables. We used Cox regression models adjusted for age at diagnosis to identify factors associated with the risk of dying.

Results: Our study included 602 MBC cases (7.9% of all BC cases). The median age at diagnosis was 71.0 years. Yearly ASRs ranged between 6.9 and 10.6 per 100'000 persons. Most MBCs were ductal carcinomas (67.9%), hormone-receptor-positive (78.4%) and her2-receptor negative (79.9%). The most common metastatic site was bones (70.9%). Relative one-year survival was 82.5% (95%-CI: 79.1-85.6) and 5-year survival was 39.8% (95%-CI: 34.9-44.7). The risk of dying increased with older age at diagnosis (≥75 years vs <50 years; HR=2.3, 95%-CI: 1.6-3.3), lobular carcinoma compared to ductal carcinoma (HR=1.3, 95%-CI: 1.0-1.7), and liver metastases at diagnosis (HR=1.7, 95%-CI: 1.3-2.1). A lower risk of dying was observed among more recently diagnosed patients (2020-2022 vs. 2014-2016; HR=0.6, 95%-CI: 0.5-0.8), those with other nationality than Swiss (HR=0.6, 95%-CI: 0.4-0.9), hormone-positive tumours (HR=0.6, 95%-CI: 0.5-0.8), and her2-positive tumours (HR=0.7, 95%-CI: 0.5-0.9).

Conclusions: Advancements in tumour characterization and corresponding use of targeted therapies may contribute to improve the prognostic outlook of MBC patients in the future.

Title **Code** 24

CLUSTER ANALYSIS OF MORTALITY RATES OF SELECTED CANCER IN POLAND, 2022

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Theme

Social inequalities and cancer

Abstract

Objectives: Regional differences in cancer incidence are common. The aim of our study was to assess the occurrence of cancer mortality clusters in Poland.

Material and methods: The age-standardised cluster analysis for selected cancer (all, lung, colorectal, breast, prostate) mortality rates (ESP2013) was performed using the local Getis-Ord Gi* statistic at the county level (NUTS4). This method enabled the identification of statistically significant areas with elevated (hot spots) and reduced (cold spots) Gi* values, corresponding to regions with above average or exceptionally low mortality compared to their surroundings.

Results: Spatial analysis revealed significant regional differences in overall mortality from malignant neoplasms across Poland. Eastern Poland stands out with low mortality rates, whereas the western, northern and southern parts of the country exhibit significantly higher rates. Among men, a small area in western Poland shows a cluster of low mortality rates. Central Poland, due to its heterogeneity, requires more detailed analysis to determine the prevailing health trends.

Conclusions: The differences between the regions shown should serve to guide policymakers in taking action to identify the causes of regional differences. These actions should cover all areas that affect public health: primary prevention,, secondary prevention and access to health care.

Title

Code 27

ESTIMATION OF COLORECTAL CANCER THERAPEUTIC WAITING TIME USING DATA ROUTINELY COLLECTED BY A FRENCH CANCER REGISTRY

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Theme

Epidemiological clinical use of cancer registry data

Abstract

Objectives: With over 47,000 incident cases per year, colorectal cancer is the second most common cancer in men and the third in women in France in 2023. Our objectives were to describe the evolution of the Therapeutic Waiting Time (TWT) for patients residing in Vendée at the diagnosis of a colorectal cancer and to estimate factors associated with long TWT.

Methods: A random sample of 2590 patients (≥20 yo) registered in the Loire-Atlantique/Vendée cancer registry and diagnosed with colorectal cancer in 2009-2019 were included. TWT was defined as the number of days between date of incidence and date of first treatment. The thresholds for TWT was defined according to French recommendations: 42 days (colon) and 56 days (rectum).

Results: For colon cancer, long TWT (≥ 42 days) rose from 16% to 27% between 2009 and 2019. Factors associated with long TWT were: chemotherapy (versus surgery as first treatment), travel time to first-line cancer treatment facility ≥ 45 minutes. Inversely, private hospitals were associated with shorter TWT. We found no association between TWT and gender, age, rural/urban status, stage at diagnosis, access to primary care and French European deprivation index.

For rectal cancer, long TWT (≥ 56 days) rose from 15% to 48% over the same period. Factors associated with long TWT were: stage III (versus stage I), radiotherapy (versus surgery as first treatment), travel time to first-line cancer treatment facility ≥ 30 minutes. Inversely, young patients (20-49 yo), private hospitals and an intermediate level of French European deprivation index were associated with shorter TWT. We found no association between TWT and gender, rural/urban status and access to primary care.

Conclusions: A worrying increase of long TWT was observed in rectal cancer. Identifying key factors related to TWT delay is essential to guide the implementation of targeted actions by stakeholders. Registry databases are therefore accurate tools to routinely evaluate waiting times.

Title **Code** 29

TRENDS IN THE FRACTION OF CANCER ATTRIBUTABLE TO ALCOHOL IN THE UK AND ITS CONSTITUENT NATIONS, 2003-2023.

Authors Names

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Theme

Epidemiological clinical use of cancer registry data

Abstract

Background and objectives: Cancer remains a major cause of morbidity and mortality in the United Kingdom (UK) and across the world. It is vital to understand the role and extent of theoretically modifiable risk factors to inform public health policy and prevent future cancer cases. The study aimed to estimate the number and proportion of cancer cases attributable to alcohol in England, Scotland, Wales, Northern Ireland, and the UK, in 2003, 2013 and 2023.

Methods: Population attributable fractions (PAFs) and number of attributable cases were calculated for cancer types with internationally recognised evidence of a causal association with alcohol. Relative risk estimates were sourced from meta-analyses. Alcohol exposure prevalence was obtained from nationally representative population surveys. Cancer incidence data for 2003 and 2013 were extracted from national data releases and projected for 2023 using an age-period-cohort model. PAFs were calculated by age, sex, and cancer type, and then aggregated to provide national estimates.

Results: The estimated proportion of UK cancer cases attributable to alcohol has remained relatively stable over the past two decades, from 2.2% in 2003 to 2.4% in 2023. The estimated proportion of alcohol-attributable cancer cases in 2023 was lower in males (2.2%) than females (2.5%), and highest within the UK nations in Scotland.

Conclusions: This is the first study to estimate the burden of cancer attributable to alcohol through time for the UK and its constituent nations. Time-trends and levels of exposure to alcohol vary by sociodemographic characteristics, and thus cancer risk is not equal across the population. Epidemiological analysis like this is dependent on the regular collection of alcohol exposure prevalence data, which should remain a priority for the UK Government and devolved administrations.

Title

Code 32

TRENDS IN THE FRACTION OF CANCER ATTRIBUTABLE TO MODIFIABLE RISK FACTORS IN THE UK AND CONSTITUENT NATIONS, 2003-2023

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Theme

Epidemiological clinical use of cancer registry data

Abstract

Objectives: Cancer remains a major cause of morbidity and mortality in the United Kingdom (UK) and across the world. It is vital to understand the role and extent of modifiable risk factors to inform public health policy and prevent future cancer cases.

The study aimed to estimate the number and proportion of cancer cases attributable to theoretically modifiable risk factors in England, Scotland, Wales, Northern Ireland, and the UK, in 2003, 2013 and 2023.

Methods: Population attributable fractions (PAFs) and number of attributable cases were calculated for 12 risk factors with internationally recognised evidence of a causal association with specific cancer types. Where possible, relative risks were sourced from meta-analyses of cohort studies, and risk factor exposure prevalence was obtained from nationally representative population surveys. Cancer incidence data for 2003 and 2013 were extracted from national data releases and projected for 2023 using an age-period-cohort model. PAFs were calculated by nation, age, and sex, for each cancer type-risk factor pairing, and then aggregated.

Results: A substantial proportion of cancer cases in the UK could be prevented. The estimated number of cases attributable to modifiable risk factors has increased over the past two decades, and trends in the attributable proportion vary according to risk factor, sex, and UK nation. Smoking remains the leading cause of cancer across the UK, contributing 14% of all cancer cases in 2023.

Conclusions: This is the first study to estimate the burden of cancer attributable to risk factors through time for the UK and its constituent nations. Changes over time reflect changes in cancer incidence and exposure to risk factors, both of which vary by sociodemographic characteristics. Epidemiological analysis like this is dependent on the regular collection of risk factor exposure prevalence data, which should be a priority for the UK Government and devolved administrations.

Title

Code 33

TRENDS IN THE FRACTION OF CANCER ATTRIBUTABLE TO TOBACCO IN THE UK AND ITS CONSTITUENT NATIONS, 2003-2023

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Theme

Epidemiological clinical use of cancer registry data

Abstract

Objectives: Cancer remains a major cause of morbidity and mortality in the United Kingdom (UK) and across the world. It is vital to understand the role and extent of theoretically modifiable risk factors to inform public health policy and prevent future cancer cases.

The study aimed to estimate the number and proportion of cancer cases attributable to tobacco in England, Scotland, Wales, Northern Ireland, and the UK, in 2003, 2013 and 2023.

Methods: Population attributable fractions (PAFs) and number of attributable cases were calculated for 16 cancer types with internationally recognised evidence of a causal association with tobacco. Relative risk estimates were sourced from meta-analyses of cohort studies where possible. Tobacco exposure prevalence was obtained from nationally representative population surveys. Cancer incidence data for 2003 and 2013 were extracted from national data releases and projected for 2023 using an age-period-cohort model. PAFs were calculated by age, sex, and cancer type, and then aggregated to provide national estimates.

Results: The estimated proportion of UK cancer cases attributable to tobacco has decreased over the past two decades, from 17% in 2003 to 14% in 2023. The estimated proportion of tobacco-attributable cancer cases in 2023 was higher in males (16%) than females (13%), and highest within the UK nations in Scotland.

Conclusions: This is the first study to estimate the burden of cancer attributable to tobacco through time for the UK and its constituent nations. The decrease in the PAF since 2003 is primarily due to the falling smoking prevalence in the UK. Time-trends and levels of exposure to smoking vary by sociodemographic characteristics, and thus cancer risk is not equal across the population. Epidemiological analysis like this is dependent on the regular collection of tobacco exposure prevalence data, which should remain a priority for the UK Government and devolved administrations.

Title **Code** 34

LINKING CANCER REGISTRY AND COHORT DATA TO ASSESS THE EFFECT OF WORKING CONDITIONS ON BREAST CANCER

Authors Names

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Theme

Epidemiological clinical use of cancer registry data

Abstract

“Objectives: Breast cancer is the most commonly diagnosed cancer in women worldwide. While unhealthy lifestyle behaviors have been linked to an increased risk of breast cancer, the effect of working conditions remains underexplored. However, assessing the effect of working conditions requires detailed information across the life course. Leveraging cancer registry data linked to a large cohort, we examined the role of working conditions—physical activity and long working hours—on breast cancer risk.

Methods: Data came from the UK Biobank and included 161,673 women aged 40-69 years without breast cancer at baseline (2006) and followed until the end of 2016. Self-reported information on working conditions (heavy physical/manual work, walking/standing work, and working hours per week) were collected. Incident breast cancer cases were verified through linkage with cancer registries. Cumulative risk differences and ratios of breast cancer were calculated, adjusted for age, education, history of illnesses, and number of live births.

Results: Over the 9-year follow-up, 5,092 women were diagnosed with breast cancer. Heavy physical/manual work led to 680 (95% CI: 281 to 1054) fewer breast cancer cases per 100’000 women compared to no heavy physical/manual work, corresponding to a risk ratio (RR) of 0.79 (95% CI: 0.67 to 0.95). Walking/standing work led to 325 (95% CI: 77 to 596) fewer breast cancer cases per 100’000 women compared to not walking/standing work (RR: 0.90; 95% CI: 0.79 to 0.98). Negligible differences in breast cancer risk were found for working hours.

Conclusions: Heavy physical/manual and walking/standing work were associated with a reduced breast cancer risk in UK Biobank participants, contrasting with the higher cardiovascular disease risks linked to occupational physical activity. These findings highlight the importance of integrating occupational factors into cancer registry analyses.”

Title

Code 37

INCIDENCE RATES OF LIPOSARCOMAS: A POPULATION-BASED STUDY IN THE PROVINCE OF GIRONA, SPAIN (1994-2021)

Authors Names

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Theme

Cancer Etiology

Abstract

Objectives: Soft tissue sarcomas are a heterogeneous group of mesenchymal tumors, of which liposarcomas (LPS) represent one of their most common histotype. LPS is a category of eight histological entities –being the 'well-differentiated liposarcoma, not otherwise specified' (WDLPS, NOS) and the 'dedifferentiated liposarcoma' (DDLPS) one of the most frequent subtypes.

Methods: All invasive primary cases of LPS diagnosed during 1994-2021 in the province of Girona were retrieved. Cases were coded using the 3rd edition of the International Classification of Diseases for Oncology (codes: 8850–8858) and classified according to the WHO 2022 Tumor Classification. Age-standardized incidence rates (using the 2013 European Standard Population) (ASRe) were calculated and expressed by 1,000,000 person-years, by sex, age group, tumor location and histotype.

Results: A total of 161 cases (65.2% men, median age at diagnosis of 62 years) were included. The most frequent histological subtype was WDLPS, NOS (32.3%), followed by mixoid LPS (25.5%) and DDLPS (20.5%). The most frequent tumor location was soft tissue (60.9%), followed by peritoneum and retroperitoneum (25.5%).
The overall ASRe was 9.25 [95% confidence interval (CI) 7.81-10.69]. ASRe were higher in men compared to women: 12.70 [95%CI: 10.24-15.25] and 6.26 [95%CI: 4.62-7.91], respectively. Incidence rates were higher at older age groups. WDLPS, NOS reported the highest Are by histotype (3.04 [95%CI: 2.21-3.87]), followed by mixoid LPS and DDLPS (2.21 [95%CI: 1.53-2.90] and 1.93 [95%CI: 1.27-2.60], respectively).

Conclusions: This is the first population-based analysis that presents accurate and up-to-date data on the incidence of LPS and its histotypes in Spain, which can help contribute to the better understanding of the epidemiology of these neoplasms.

Funding: The study has been funded by Fundació Institut d'Investigació Biomèdica de Girona Dr. Josep Trueta, through an unrestricted grant from Boehringer Ingelheim, Spain

Title

Code 38

SURVIVAL OF HEPATOCELLULAR CARCINOMA: A POPULATION-BASED STUDY IN THE PROVINCE OF GIRONA, SPAIN (2010-2021)

Authors Names

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Theme

Survival

Abstract

Objectives: Hepatocellular carcinoma (HCC) is the most frequent primary tumor of the liver and has a poor prognosis. At a population level, there are few studies describing the survival of this neoplasm and there is no data regarding the Spanish population. Therefore, the aim of this study is to describe the observed survival (OS) of HCC in the province of Girona (2010-2021), according to sex, age and period of diagnosis.

Methods: All primary cases of HCC coded using the 3rd edition of the International Classification of Diseases for Oncology (codes: 8170–8180) diagnosed during 2010-2021 in the province of Girona were retrieved. Patient follow-up was until December 31, 2023. Survival at 1, 3, 5-years since diagnosis was calculated by sex, age (<50, 50-64, 65-79 and ≥80 years), and period of diagnosis (2010-2013, 2014-2017 and 2018-2020) using Kaplan-Meier estimator.

Results: A total of 679 cases (79.6% men, median age at diagnosis 67 [interquartile range (IQR): 59-75]) were included. The majority of cases were diagnosed by imaging test (62.6%), and the remaining had a microscopically verified diagnosis. Four cases (0.6%) were diagnosed with HCC combined with cholangiocarcinoma. At the end of the follow-up, 507 patients (74.6%) had died, with a median follow-up of 1.2 years [IQR: 0.2-3.4].

Survival at 1, 3 and 5 years was 55%, 33% and 22% respectively, with no statistically significant differences according to sex and period of diagnosis. However, OS varied considerably from 3 years onwards according to age group, being at 5 years 41% in the <50 years group and 8.9% in the ≥80 years group.

Conclusions: The survival of HCC at a population level remains low, although age is a determining factor in the medium-term prognosis. No improvement in survival has been observed in the last decade, reflecting the need for more resources to treat this neoplasm.

Title **Code** 40

IMPACT OF COVID-19 PANDEMIC ON CHILDHOOD CANCER INCIDENCE AND STAGE IN FRANCE - A NATIONAL REGISTRY-BASED STUDY

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Theme

Epidemiological clinical use of cancer registry data

Abstract

Objectives: COVID-19 pandemic has considerably affected access to healthcare resources. Despite the messages for maintaining childhood cancer care, the decline in cancer care activities observed in 2020 may have affected childhood cancer care. This national study aimed to assess a possible impact of the pandemic on the management of pediatric cancer cases.

Methods: All cases 0 to 17 years old and recorded in the French National Registry of Childhood Cancer between January 1, 2016 and December 31, 2020 were included. Taking the year 2020 for the COVID-19 period and the period 2016-2019 as the reference period, we first analyzed incidence rate and monthly number of cases. Secondly, we studied the proportion of advanced/metastatic stage using the Toronto Pediatric Cancer Stage Guidelines. Finally, we compared the time to treatment initiation calculated as the difference in days between the date of diagnosis and the date of treatment initiation.

Results: Based on 2,250 cases included in 2020 and 9,208 cases in 2016-2019, age-standardized incidence rates of overall pediatric cancer were similar in 2020 (161.4 cases per million*year) and in 2016–2019 (162.4 cases per million*year). They were also similar by sex, age group, region, and cancer type. We did not observe any significant differences in stage at diagnosis or median time to treatment.

Conclusion: Our nationwide population-based study suggests that pediatric cancer management was not substantially altered in 2020, despite the challenges induced by the COVID-19 pandemic and associated lockdown.

Title **Code** 42

DATA PREPARATION CHALLENGES IN ANALYSIS OF RECURRENCE-FREE SURVIVAL IN BREAST CANCER USING SAXONY-ANHALT REGISTRY DATA

Authors Names

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Theme

Survival

Abstract

Objectives: Breast cancer can recur at various times after diagnosis, making recurrence-free survival an essential measure that provides valuable insights into prognosis and treatment effectiveness.

The reporting of recurrence and progression can be facilitated in the German Standardized Oncological Basic Data Set (oBDS) through various reporting events. These include pathology follow-up reports with new UICC staging, clinical reports of new metastases or remission, or therapy reports targeting specific tumor parts. Determining the timepoint of recurrence is challenging due to the necessity of identifying a prior complete remission. However, the absence of such data may be mitigated by conditional supplementation of information from other reporting events.

Methods: For 48,598 breast cancer patients diagnosed between 1993 and 2022 194,565 follow-up reports have been documented in 461,677 person-years. Following an exploration of database dependencies, deterministic rules for cross-validation of different reporting events will be established. These rules are of particular importance in cases where multiple reports contain contradictory information (e.g., complete remission following a UICC IV pathological report or surgery shortly after complete remission report). Survival analyses will be conducted using the Kaplan-Meier method and the Cox proportional hazards model.

Results: The establishment of robust rules for conditional supplementation is expected, leading to more accurate outcome determination. This will increase the reliability of recurrence-free survival analysis and reduce the proportion of missing values in registry data.

Conclusions: The established conditional supplementation rules will improve the reliability of recurrence-free survival analyses using cancer registry data. This approach will improve the usability of cancer registry data and support better clinical decision-making and research in breast cancer management.

Title

Code 43

PATIENT AND REGIONAL FACTORS CONTRIBUTING TO DELAYS IN ADJUVANT CHEMOTHERAPY FOR STAGE III COLON CANCER IN GERMANY

Authors Names

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Theme

Social inequalities and cancer

Abstract

Objectives: Delayed initiation of adjuvant chemotherapy for stage III colon cancer is associated with worse survival. This study aims to identify patient- and region-specific factors contributing to delays in chemotherapy initiation among patients with stage III colon cancer following R0 resection, with a focus on socio-economic disparities across urban and rural regions in Germany. Specifically, the study will examine how regional socio-economic characteristics (such as healthcare access, education levels and median income), interact with patient factors, including age and clinical variables, to influence treatment timelines.

Methods: We will analyse data from two regional cancer registries in Germany – Saxony-Anhalt (ST) and Brandenburg-Berlin (BB) – which collectively identified 11299 (ST: 4094, BB: 7205) patients diagnosed with stage III colon cancer and treated with R0 resection (2000-2023). Of these, 2333 (57%) from ST and 3804 (53%) from BB received adjuvant chemotherapy. We will assess the temporal trends in chemotherapy delays (≥ 8 weeks post-surgery) and their impact during the study period.

Results: Generalized regression models will be employed to calculate effect sizes with 95% confidence intervals to assess the association between patient- and region-specific factors and delays in chemotherapy initiation. Further, subgroup analyses will explore differences in chemotherapy delay patterns between urban and rural areas to highlight regional disparities.

Conclusions: Understanding and addressing factors that contribute to delayed chemotherapy initiation is essential for reducing treatment delays. This research may provide valuable insights to understand and improve healthcare strategies and outcomes for patients with stage III colon cancer across different socio-economic backgrounds in Germany.”

Title

Code 44

USE OF TARGETED THERAPY IN NON-SMALL-CELL LUNG CANCER PATIENTS IN RURAL AND URBAN AREAS OF SAXONY-ANHALT (2010-2023)

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Theme

Epidemiological clinical use of cancer registry data

Abstract

Objectives: Over the past two decades, numerous targeted therapies (TT) have been integrated into routine non-small-cell lung cancer (NSCLC) treatment in Germany. This study aims to assess regional disparities in the utilization of TT for NSCLC in Saxony-Anhalt, a predominantly rural region, where access to treatment may be affected by distance to major clinical centers.

Methods: Cancer registry in Saxony-Anhalt collects data on all curative and palliative systemic treatments. TT were identified according to the ENCR recommendations on recording treatment data and classified according to the Anatomical Therapeutic Chemical Classification System levels. Rural areas were defined as counties with a low urbanity index of the Central Research Institute of Ambulatory Health Care (Zi).

Results: This study included 13,379 NSCLC patients from rural areas and 4,504 from urban areas, diagnosed between 2010 and 2023. From 2010 to 2014, epidermal growth factor receptor tyrosine kinase inhibitors (N=192, 35%) and vascular endothelial growth factor inhibitors (N=179, 33%) were the most commonly used TT. Programmed cell death protein 1/death ligand 1 inhibitors were the most commonly used TT group from 2015 to 2019 (N=1,625, 62%), and this increase continued from 2020 to 2023 (N=2,253, 81%). Overall, the utilization of TT increased over time, with an increase observed both for patients residing in rural areas (2010-2014: 10%, 2015-2019: 41%, 2020-2023: 50%) and in urban areas (2010-2014: 9%, 2015-2019: 38%, 2020-2023: 41%). Similar disparities were observed in both early-stage (UICC I-III: urban: 17% vs. rural: 23%) and advanced NSCLC (UICC IV: urban: 45% vs. rural: 53%).

Conclusions: Despite concerns regarding healthcare access in rural areas, the utilization TT for NSCLC in Saxony-Anhalt has increased over time, in both rural and urban areas. Future research should examine referral patterns, treatment timeliness and survival outcomes to better understand these trends.

Title **Code** 45

CONDITIONAL SURVIVAL FOR FEMALES WITH BREAST CANCER IN CENTRAL AND SOUTH AMERICA USING SURVCAN-3: POPULATION-BASED STUDY

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Theme

Survival

Abstract

Objectives: Conditional survival provides a dynamic view of survival by showing the probability of surviving cancer after the patient has survived a certain period from diagnosis. We aimed to estimate the conditional survival for women with breast cancer in Central and South American countries using population-based cancer registry (PBCR) data from SURVCAN-3.

Methods: We included data for women with breast cancer diagnosed between Jan 2008 and Dec 2012, from 18 PBCRs across 10 countries in central and south America, with follow-up until Dec 2014. Age-standardized net survival was estimated at 3 years using Pohar-Perme estimators. For women who survived for 1 year post-diagnosis, conditional net survival was estimated at 3 years using the same method. Survival estimates were further stratified by age at diagnosis (<50 and ≥50 years).

Results: All countries showed an improved 3-year survival for women with breast cancer who had survived 1 year after diagnosis compared to the 3-year survival estimated at diagnosis. While 3-year net survival in 10 countries ranged between 85.5% and 91.8%, conditional survival at 3 years reached more than 90% in Peru (96.2%), Costa Rica (91.8%), Ecuador (91.3%), Puerto Rico (90.8%), and Argentina (90.2%). Five out of 10 countries showed at least 3% increase in their conditional survival when compared to net survival at diagnosis, with the highest improvement seen in Peru (92.6% vs. 87.4%) and Colombia (86.5% vs. 82.4%). When stratified by age, the improvement in survival was limited to women older than 50 years.

Conclusion: The findings show the improvement in survival in particular for women with breast cancer aged older than 50 years if they survive beyond 1 year from diagnosis, highlighting the potential benefits of early care and treatment adherence on breast cancer survival over time.

Title

Code 47

TRENDS IN THE FRACTION OF CANCER ATTRIBUTABLE TO OVERWEIGHT AND OBESITY IN THE UK AND ITS CONSTITUENT NATIONS 2003-2023

Authors Names

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Theme

Epidemiological clinical use of cancer registry data

Abstract

Objectives: Cancer remains a major cause of morbidity and mortality in the United Kingdom (UK) and across the world. It is vital to understand the role and extent of modifiable risk factors to inform public health policy and prevent future cancer cases. The study aimed to estimate the number and proportion of cancer cases attributable to overweight and obesity in the UK and its constituent nations, in 2003, 2013 and 2023.

Methods: Population attributable fractions (PAFs) and number of attributable cases were calculated for cancer types with internationally recognised evidence of a causal association with excess weight. Relative risk estimates were sourced from meta-analyses of cohort studies where possible. Excess weight prevalence was obtained from nationally representative population surveys. Cancer incidence data for 2003 and 2013 were extracted from national data releases and projected for 2023 using an age-period-cohort model. PAFs were calculated by nation, age, sex, and cancer type, and then aggregated.

Results: The estimated proportion of UK cancer cases attributable to excess weight has increased over the past two decades, from 5.2% in 2003 to 7.2% in 2023. The estimated proportion of overweight and obesity-attributable cancer cases in 2023 was lower in males (5.2%) than females (9.3%), and highest within the UK nations in Scotland.

Conclusions: This is the first study to estimate the burden of cancer attributable to excess weight through time for the UK and its constituent nations. The increase in the PAF since 2003 is primarily due to increasing obesity prevalence in the UK. Time-trends and levels of exposure to excess weight vary by sociodemographic characteristics, and thus cancer risk is not equal across the population. Epidemiological analysis like this is dependent on the regular collection of overweight and obesity prevalence data, which should remain a priority for the UK Government and devolved administrations.

Title

Code 49

SOCIAL DEPRIVATION IN PATIENTS WITH BLADDER CANCER IN THE SOMME REGION (FRANCE): A SPATIAL ANALYSIS STUDY

Authors Names

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Theme

Social inequalities and cancer

Abstract

Objectives: Bladder cancer is one of the most common cancers in France, with incidence and mortality influenced by socio-economic factors. Disparities in access to care and treatment have been observed based on levels of social deprivation. The studied region exhibits notable socio-economic inequalities, with a poverty rate higher than the national average. The aim of this study was to assess the impact of socio-economic status, measured by the European Deprivation Index (EDI), on the incidence of bladder cancer and on the survival of affected patients in the Somme region.

Methods: Data from patients diagnosed between 2010 and 2015 were extracted from the Somme Cancer Registry. Each tumor was geolocated according to the residential IRIS (statistical area) and classified into EDI quintiles. Incidence was calculated and age-standardized to the world population structure, and overall survival was estimated using the Kaplan-Meier method. Cox models were adjusted to assess the risk of death (Hazard Ratio (HR)) based on age, gender, socio-economic status, tumor stage, and grade.

Results: Among the 1276 recorded cases, 660 (51.7%) exhibited behavior 3. The world-standardized incidence rate was 14.8 for men and 2.1 for women per 100,000 person-years, respectively. Patients from the most deprived quintiles (Q4-Q5) accounted for 67% of the cases. The median survival was 3.9 years, with a significantly higher risk of death in patients with invasive tumors (HR = 2.10 [1.79-2.46]). No significant association was found between EDI level and mortality, although a trend was observed in the mortality risk maps.

Conclusion: This study highlights the considerable incidence of bladder cancer in the Somme region, with a strong impact of tumor stage on survival. No direct relationship was demonstrated between deprivation level and overall mortality. Other unstudied determinants may influence patient survival. Further studies are needed to refine and better understand these results.

Title

Code 50

HEALTH BEHAVIORS AND SOCIOECONOMIC FACTORS ASSOCIATED WITH PAP SMEAR SCREENING AMONG FRENCH WOMEN LIVING IN MARTINIQUE

Authors Names

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Theme

Screening

Abstract

Objectives: To assess the impact of social, cultural and economic factors on the uptake of cervical cancer screening among women living in Martinique.

Methods: We used a mixed method design to adapt the data collection in the French West Indies context. This method, entitled 'Exploratory Sequential Mixed Method Design', combines qualitative (individual/collective interviews) and quantitative studies (administration of a general population questionnaire). Weighted logistic models were used to identify factors associated with not being up to date.

Results: In the quantitative phase, 952 women were included, and the final weighted analyses were carried out on 891 women. The mean age of women was 46.5 years (SD = 11.0). 78.7% of women reported being up to date with their Pap smear screening. Factors associated with being up to date with smear screening were: having a high income (AOR 1.56 [1.04-2.33]), having at least one child (AOR 2.65 [1.67; 4. 19]), having consulted a GP in the last 12 months (AOR 1.75 [1.06 ;2.89]), and having efficient health literacy (AOR 2.08 [1.43 ;3.04]). In the qualitative phase, 53 iterative individual interviews were conducted (19 women and 2 men), added by 2 gendered focus groups (14 women and 11 men). Thematic analysis showed that social vulnerability, limited access to the healthcare system and violence interact to influence cervical pap smear screening behaviour.

Conclusions: This original combined study, has enabled us to better understand the importance of pap smear screening for cervical cancer in the French West Indies. Interventions are required to promote the active management of women's health, in particular through better information on screening and, more generally, by promoting access for all women concerned to healthcare resources. Gender-based and sexual violence are factors to be integrated within medical interventions to improve access to care and strengthen prevention policies in the French West Indies.

Title **Code** 51

EARLY DETECTION OF LUNG CANCER: A FEASIBILITY STUDY LINKING CANCER REGISTRY AND PRIMARY CARE DATA

Authors Names

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Theme

New methods innovation and AI applications

Abstract

Background: In spite of recent advances, lung cancer still has poor survival prognosis in the Netherlands (5-year overall survival at 26% for diagnoses in 2015-2022) with about half of the patients being diagnosed at advanced stage (IV). The goal of this study is to evaluate the feasibility of predicting lung cancer up to 6 months prior to actual diagnosis in the general practitioner's office (GP), based on early disease signs, using linked primary care and cancer registry data.

Methods: From a cohort of linked cancer and primary care data, a total of 6,106 patients diagnosed with lung cancer (SCLC and NSCLC) were selected and matched (1:1) to lung cancer-free controls on gender, birth year, general practitioner (GP) practice and follow-up period. Prescribed medication, GP physical examinations, GP recorded episodes and number of GP visits from the GP database of the PHARMO Data Network, as well as age at the end of follow-up and gender from the Netherlands Cancer Registry (NCR) were used as input to four prediction models: (i) Cox model, (ii) Random Forests, (iii) Support Vector Machines and (iv) XGBoost. Data from 10 years to 6 months prior to lung cancer diagnosis were used.

Results: Exploratory analyses indicated differences between the cancer and the control group across diagnostics and medications. The XGBoost model showed best overall performance with an f1 score of 64.8%. For the cancer cases precision was 70% (i.e., the proportion of correct responses when the model made a cancer prediction) and the recall was 54.11% (i.e., the proportion of actual cancer cases the model captured). For the non-cancer cases, the precision was 62.52% and the recall was 76.49%.

Discussion: Although the cancer class recall was non-random, even the best model showed poor results. Several crucial factors related to data quality, availability and coverage are discussed. Innovations to improve data availability are essential to support early cancer detection.

Title **Code** 52

BURDEN OF CERVICAL CANCER IN LATIN AMERICA AND THE CARIBBEAN: UPDATED DATA FROM THE FRENCH WEST INDIES (2012-2021)

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Theme

Epidemiological clinical use of cancer registry data

Abstract

Objectives: To provide an updated overview of the burden and trends of cervical cancer in a French Caribbean region between 2012 and 2021, including environmental data and Chlordecone soil contamination.

Methods: This retrospective study included all cases registered by the Martinique Population-Based Cancer Registry of cervical cancer diagnosed between 2012 and 2021. Data were recorded strictly according to international standards set by the International Agency for Research on Cancer, French and European Network of Cancer Registries. A descriptive epidemiological analysis, a survival analysis and a geographical study for invasive cases were performed.

Results: Over the study period, 1,196 in situ tumors and 202 invasive cases were diagnosed. 45.0% of women were aged 65 and over, and 67.3% received chemotherapy and/or radiotherapy. Most invasive cases were diagnosed with locally advanced stage (43.1%) and were squamous cell carcinomas (75.2%). Trends in standardized incidence and mortality rates were globally constant at 6 per 100,000 and 3 per 100,000 person-years, respectively. Overall survival at 5 years was 51.4%, and at 10 years, 41.8%. Survival was associated with locally advanced stage (HR: 3.5 [1.4; 8.9]), metastatic stage (HR: 7.8 [3.0; 20.3]), and palliative care (HR: 9.3 [1.0; 83.8]). Regarding Chlordecone soil contamination, in the high contamination area a 19% lower relative risk was found.

Conclusions: In this retrospective cohort study, data from a qualified cancer registry comprehensively described the burden of cervical cancer in a Caribbean region. A Limited number of epidemiological studies are available in the Latin America and Caribbean region. These findings have significant implications are essential for planning, monitoring, and evaluating the ongoing impact of the national vaccination, screening, and treatment measures required to drastically reduce cervical cancer in these particularly high-burden regions.

Title

Code 53

SURVIVAL ESTIMATES OF LIPOSARCOMA IN THE PROVINCE OF GIRONA, SPAIN (1994-2021)

Authors Names

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Theme

Survival

Abstract

Objectives: Soft tissue sarcomas are a heterogeneous group of aggressive neoplasms, characterized by a wide range of histotypes, being liposarcomas (LPS) one of their most frequent subtype. LPS is a subfamily of different histological entities, such as the 'well-differentiated liposarcoma, not otherwise specified' (WDLPS, NOS) and the 'dedifferentiated liposarcoma' (DDLPS), with a varying range of survival rates. The main goal is to estimate survival of LPS by histotype in the province of Girona during the period 1994-2021.

Methods: All malignant primary cases of LPS diagnosed during 1994-2021 in the province of Girona were retrieved. Cases were coded using the 3rd edition of the International Classification of Diseases for Oncology and classified according to the WHO 2022 Tumor Classification. Patient follow-up was until December 31, 2023. Observed survival (OS) at 1, 3, 5-years since diagnosis was calculated by histotype, age group, sex, and tumor location using Kaplan-Meier estimator.

Results: A total of 161 cases (65.2% men, median age at diagnosis of 62 years) were included. The most frequent histotype was WDLPS, NOS (32.3%), followed by Mixoid LPS (25.5%).
Overall, the OS at 5-years was 66.9% [95% confidence interval (CI) 59.7-74.9]. The histotype that had the highest survival estimate was WDLP, NOS with an OS at 5-years of 89.8% [95%CI: 81.8-98.7], as opposed to DDLPS with the lowest estimate of 35.8% [95%CI: 22.2-57.7].

Conclusions: This is the first population-based analysis that provides accurate and up-to-date data on the OS of LPS and its histotypes in Spain, thereby improving the understanding of these less commonly described neoplasms.
Funding: The study has been funded by Fundació Institut d'Investigació Biomèdica de Girona Dr. Josep Trueta, through an unrestricted grant from Boehringer Ingelheim, Spain.

Title

Code 54

BRIDGING POLICY AND PRACTICE: MAKING CANCER REGISTRY DATA FAIR AND ACCESSIBLE IN THE EHDS ERA

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Theme

Epidemiological clinical use of cancer registry data

Abstract

With health data scattered across platforms, formats, and legal frameworks, cancer registries stand out with population-based, structured, and longitudinal data. They are essential for policy-making, quality control, healthcare planning, prevention, innovation, and research. However, many European registries struggle to make their data FAIR—Findable, Accessible, Interoperable, and Reusable—while meeting the growing demand for timely, high-quality cancer data.

The EHDS regulations introduce new obligations for data holders, including cancer registries. We need to explores and learn from ongoing projects and strategies to enhance FAIR cancer data within the obligations and frames of the EHDS.

Challenges exist at multiple levels. Some countries are still struggling to establish and keep the funding for cancer registries, while others struggle with data completeness and workflow optimization. Data processing should follow harmonized rules and recommendations, and all registries need to include comprehensive metadata covering variables, values, provenance, and quality.

Access should follow an ""as open as possible, as closed as necessary"" principle, balancing GDPR, national laws, and ethics. Therefore, different access models are needed, from anonymous web-based statistics and self-service tools to distributed and federated analyses. Secure environments allow for controlled access to pseudonymized individual data when necessary. Interoperability requires standardized data models—such as the "call for data" for ECIS and CI5, or overarching models like FHIR, and OMOP. Reusability of data needs to be enhanced through metadata on content, quality, and legal aspects.

Projects like CancerWatch, EUCanScreen, BlueBerry, IDEA4RC, and QUANTUM are tackling these challenges. By leveraging these efforts, we can ensure cancer registry data plays a key role in EHDS, benefiting patients, researchers, and policymakers

Title

Code 55

TRENDS IN PANCREATIC CANCER INCIDENCE AND SURVIVAL IN ZURICH (SWITZERLAND)

Authors Names

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Theme

Epidemiological clinical use of cancer registry data

Abstract

Objectives: The aim of the present study was to analyse incidence and survival of patients diagnosed with malignant pancreatic cancer in the cancer registry of the cantons of Zurich, Zug, Schaffhausen and Schwyz.

Methods: Population-based cancer registry data of the canton of Zurich from 1981 to 2021 were used to calculate age-standardized incidence rates per 100 000 person-years and net survival. Time trends were investigated with joinpoint regression analysis and net survival was estimated with the Pohar-Perme method.

Results: The incidence rate of pancreatic adenocarcinomas remained stable until 2000 (annual percentage changes [APC] 1981-2000: -0.9 [95% CI: -4.0 to 0.4]) after which it increased (APC 2000-2021: 2.5 [95% CI: 1.6 to 4.4]). The incidence of pancreatic neuroendocrine tumours increased over the whole period (APC 1981-2021: 3.4 [95% CI: 2.7 to 4.6]) while the incidence of pancreatic cancers not histologically or cytologically confirmed decreased (APC 1981-2021: -1.1 [95% CI: -1.7 to -0.3]). Three-year net survival was highest for pancreatic neuroendocrine tumours (0.65 [95% CI: 0.60 to 0.71]) and low for pancreatic adenocarcinomas as well as pancreatic cancers not histologically or cytologically confirmed (0.08 [95% CI: 0.07 to 0.09] and 0.03 [95% CI: 0.02 to 0.04]). Survival for pancreatic adenocarcinomas was higher among younger age groups, less advanced stages and recent diagnosis years.

Conclusions: Over the past 40 years, the incidence of pancreatic adenocarcinoma and neuroendocrine tumours increased, whereas pancreatic cancers not histologically or cytologically confirmed decreased. One-year net survival was poor except for pancreatic neuroendocrine tumours.

Title **Code** 56

THE CHANGING EPIDEMIOLOGY OF HEAD AND NECK CANCERS IN IRELAND

Authors Names

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Theme

Epidemiological clinical use of cancer registry data

Abstract

Objectives: Head and neck cancers (ICD10 C00-C14, C30-C32) accounted for 3.3% of all invasive cancers (excluding non-melanoma skin cancers) in Ireland in 2020-2022. They were the 5th most common cancer in men and 15th most common cancer in women. In light of changes in the prevalence of several of the most important risk factors for head and neck cancers (such as smoking, alcohol and Human Papilloma Virus infection) the objective of this study was to describe the current epidemiology of head and neck cancers in Ireland and identify changes in age-standardised incidence and mortality rates over time.

Methods: The National Cancer Registry collects data on all new primary cancers diagnosed in Ireland. Age-standardised incidence rates (ASR) were calculated using the 2013 European standard population. Age-standardised 5-year net survival was calculated using Pohar-Perme method.

Results: The annual average ASR of head and neck cancers 2020-2022 was 29.1/100,000 in men and 9.1/100,000 in women.
The ASRs for both men and women are increasing significantly (annual percentage change of 1.1% per year 2001-2022 and 1.3% per year 1994-2022 respectively).
5-year net survival has improved from 51% in 1994-1998 to 56% in 2014-2018 for men, and from 49% in 1994-1998 to 58% in 2014-2018 for women. Survival varies by age group with younger ages tending to have better survival and larger increases in survival over time.
Age-standardised mortality rates in both sexes show a significant decreasing trend over time.

Conclusions: Head and neck cancers are currently suboptimally controlled at a population level as incidence is on the increase. They are a diverse group of cancers, showing variation in incidence, survival and mortality by site, sex, and age group. Current epidemiological trends underpin the requirement to continue advocacy of high uptake of HPV vaccination in order to counter this increase.

Title **Code** 57

DATA-DRIVEN INSIGHTS FOR THE RIGHT TO BE FORGOTTEN IN SWITZERLAND: A STUDY ON CANCER SURVIVORS' CHALLENGES

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Theme

Social inequalities and cancer

Abstract

Background: The Right to Be Forgotten (RTBF) protects cancer survivors from financial discrimination by allowing them to withhold their medical history after a remission period when applying for loans or insurance. While several European countries have adopted RTBF laws, Switzerland has not yet implemented such policies. Given the increasing number of cancer survivors and their financial challenges, data-driven insights are needed to inform policy discussions and assess RTBF's potential applicability.

Objectives: This study aims to establish a scientific basis for RTBF in Switzerland by assessing when cancer survivors; mortality risk aligns with that of the general population and identifying their financial difficulties.

Material and Methods: A retrospective cohort study using data from the Geneva Cancer Registry and the Swiss national cancer database (NICER) will estimate when cancer survivors reach mortality parity with the general population using cure models and conditional survival analysis. To investigate financial challenges, a scoping literature review will summarize existing evidence, qualitative data will be collected through patient associations, and a survey will compare financial access between cancer survivors and a control group.

Expected Results: This study will provide an epidemiological foundation for RTBF in Switzerland by defining the timeframe at which cancer survivors no longer experience excess mortality. It will also map financial barriers, strengthening the evidence base for policy discussions.

Conclusions and Perspectives
The absence of RTBF in Switzerland may contribute to financial discrimination against cancer survivors. This study will provide key data to support equitable financial access, ensuring that survivors are not indefinitely penalized for their medical history.

Title **Code** 58

CANCER INCIDENCE AND MORTALITY IN VOLCANIC AREAS: A SUGGESTION FOR VOLCANIC ASH POLLUTION CORRELATION.

Authors Names

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Theme

Cancer Etiology

Abstract

Objective: Several studies demonstrate the correlation between atmospheric pollutants, both anthropogenic and natural, and the onset of tumors. Etna is an active volcano that producing a series of particulates, namely fine dust, gases and various elements dispersed in the air and in the environment.

The aim of our study was to evaluate the incidence of tumors in Catania and in the neighboring provinces located on the slopes of Etna in relation to the fallout of volcanic ash which preferentially heads towards the eastern part of the Sicilian coast.

Methods: Data was extracted from the Cancer Registry of CT-ME-EN in the period 2003-2020. Incidence data was expressed in incident cases for 100.000 residents per year. There were calculated standardized incidence rates (STDI) and standardized mortality ratio (STDM) based on the European population census of 2013, and their relative confidence intervals at 95%.

For analysis, 46 towns of the CT province were selected and thus divided: west zone (to the left of the volcano), central zone (around the volcano) and east zone (on the sea).

Results and Conclusions: STDI were more high in the east zone both for men (469.3 95% CI=462.4 - 476.2, x 100.000/year) and for women (368.9 95% CI=363.1-374.7, x 100.000/year). STDM were more high in the east zone both for men (220.7 95% CI=216 – 225.4, x 100.000/year) and for women (130.3 95% CI=126.8-133.7, x 100.000/year).

For the top three cancers STDI of bladder is more high in men in the east zone and STDI for breast is more high in women in the east zone. For the top three cancers STDM of lung is more high in men in the east zone and STDM of breast is more high in women in the east zone.

These data are suggestive of an involvement of the volcanic ash pollution in the genesis of the tumors in the east area of the Etna Volcano.

Of course, to be confirmed with certainty, the data must be further investigated with more in-depth studies.

Title **Code** 60

RISK OF CANCER AFTER PRESENTING WITH ONE OF 9 NON-ALARM SYMPTOMS IN PRIMARY CARE: A UK POPULATION COHORT STUDY

Authors Names

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Theme

Epidemiological clinical use of cancer registry data

Abstract

Objectives: Describe the age-sex-specific risk of cancer within 12 months of presenting in primary care with any of 9 non-alarm symptoms.

Methods: We analysed English primary care electronic health records data (CPRD Gold) on patients aged 30-100 years in 2007-2017, identifying cancer diagnoses from the national cancer registry. For each patient, we included the earliest relevant symptom within each calendar year. We defined a new-onset symptom if the patient had no history of that symptom within the previous 12 months. We modelled cancer risk within 12 months using sex-stratified generalised estimating equations with a logistic link and an exchangeable correlation structure.

Results: A total of 612,054 men and 849,881 women presented with at least one of the 9 studied non-alarm symptoms between 2007 and 2017. As examples, we present the results for women with abdominal bloating or cough. 22.2% (N = 9,930) of women with abdominal bloating (52.4% (N = 243,685) with cough) had multiple presentations (median of 2 presentations per patient among patients with abdominal bloating and 3 in cough; median follow-up 4.5 and 5.2 years, respectively). For women at age 65, the 12-month cancer risk post-abdominal bloating presentation was 3.7% (95% CI 3.34 – 4.06%) for new-onset and 2.2% (95% CI 1.74 – 2.79%) for subsequent presentations. The corresponding 12-month cancer risk for women after cough presentation was 1.6% (95% CI 1.56 – 1.67%) for new-onset and 1.7% (95% CI 1.63 – 1.79%) for subsequent presentations.

Conclusions: The added value of our results is the detailed age-sex-specific quantification of cancer risk for a broad range of non-alarm but cancer-relevant symptoms. Our results are helpful for informing the design of new guideline recommendations for symptomatic diagnosis of cancer focusing on the large proportion of patients who present with non-specific symptoms, supporting the identification of patients at highest risk for further investigation or referral.

Title **Code** 61

IMPLEMENTATION OF THE TORONTO STAGING SYSTEM IN A PEDIATRIC CANCER HOSPITAL REGISTRY IN BRAZIL: FEASIBILITY AND BENEFITS

Authors Names

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Theme

Epidemiological clinical use of cancer registry data

Abstract

Introduction: Childhood cancer lacks a universal staging guideline, which hampers data comparability across different institutions. The Toronto Staging System was originally developed for population-based cancer registries, but its adoption in hospital-based cancer registries (HBCRs) could enhance standardization and survival analysis. This study assesses the feasibility of implementing the Toronto Staging System in the routine operations of an HBCR at a pediatric oncology referral center in Ceará, Brazil - the Hospital Infantil Albert Sabin/Centro Pediátrico do Câncer (HIAS/CPC).

Methodology: A total of 306 pediatric cancer cases recorded in the HBCR in 2022 and 2023 were analyzed, with the latter year still partial due to ongoing data collection. Staging was conducted by trained registrars who extracted information directly from patient medical records. All cases involving patients aged 0 to 19 years were included, except for 15 cases that could not be staged due to insufficient information.

Results: The implementation of the Toronto Staging System in HBCRs proved to be feasible, with most cases successfully staged. Training the registrars was essential to ensure data retrieval and standardization. The use of this method enables greater comparability between healthcare units and enhances the quality of survival analyses for pediatric oncology patients.

Conclusion: The implementation of the Toronto Staging System in the HBCR of a pediatric oncology referral unit proved to be both feasible and beneficial. The lack of standardization in hospital-based registries compromises comparability, and this study highlights the importance of incorporating a uniform staging system. Furthermore, we demonstrated that the routine collection of this information is possible, provided that professionals receive adequate training. The adoption of this method can contribute to improving epidemiological surveillance and informing public policies aimed at childhood cancer.

Title

Code 62

CAN WE RELIABLY REPORT ON PATIENTS RECEIVING ‘CURATIVE’ TREATMENTS FROM EXISTING DATA?

Authors Names

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Theme

Data quality

Abstract

Objectives: To interrogate existing national datasets within NHS Scotland to determine if ‘curative’ treatment can be reliably captured. If so, to check whether the proportion of patients given ‘curative’ treatment can be measured accurately over time.

Methods: We explored various national datasets and determined that the Scottish Cancer Registry (SCR) was the most comprehensive and appropriate source to provide high-quality recording of curative treatment. Examination of completeness and accuracy of several potential data variables led to the use of the ‘therapy objectives marker’ to measure the ‘curative’ intent of the therapy. This is assigned to the patient’s registration record once full clinical/ pathological staging is known. Consistency of coding of this marker was explored for different stages, treatment combinations and over time.

Results: More than half the patients received treatments classified as ‘curative intent’ for 16 types of cancers combined. Generally, use of therapies of curative intent decreased with increasing stage at diagnosis. For example, treatments were more likely to be curative for the majority in Stages I&II (~80%), reducing to ~60% for Stage III and <10% for Stage IV. There were, however, considerable differences by cancer type: for example, for Stage I breast cancer, ~92% of patients were given curative treatment compared with ~23% of patients with Stage I pancreatic cancer.

Conclusions: Generally, ’curative’ intent can be captured consistently using the SCR’s ‘therapy objectives marker’. However, we showed that registration guidelines may lead to a different treatment intent for some cancer types to that determined from a clinical point of view. Furthermore, whether a patient receives a ‘curative’ treatment depends on stage at diagnosis and availability of suitable treatments. Due to the variability in treatment intent across different cancer types and stages, the proportion given ‘curative’ intent must be presented separately.

Title

Code 63

TRENDS IN HAEMATOLOGICAL MALIGNANCIES (HMS) IN THE REPUBLIC OF IRELAND

Authors Names

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Theme

Epidemiological clinical use of cancer registry data

Abstract

Objectives: Classification of HM is complex and international comparison between cancer registries challenging due to changes in coding recommendations and interpretation over time. We aimed to examine HM burden in Ireland and facilitate international comparison.

Methods: All HM cases (paediatric and adult) registered during 1994-2021 were included. Incident HM cases were classified using ICD-O-3 and grouped according to the HAEMACARE scheme. Age-standardized incidence and mortality rates were calculated per 100,000 person years. Five-year net-survival was for each HM subset diagnosed during 1994-2007 and 2008-2021. Joinpoint regression was used to determine annual percentage change (APC) over 1994-2021.

Results: HM comprised 10% of all invasive cancers (excl. NMSC) during 2019-2021. Male cases outnumbered females by 35%. Deaths due to HM accounted for 8.5% of all cancer deaths. ALL/LL was the most commonly diagnosed HM (57%) in children (<15 years) during 2012-2021, followed by HL, which was the predominant HM in adolescents (15-19 years) and young adults (20 to 39) (53% and 50% of all HMs, respectively). From age 40+, the five most common HMs were multiple myeloma (18%), DLBCL (15%), CLL/SLL (13%), MDS (10%), and FL (8%). For HM overall, the incidence rate was stable in males during 2005-2019 (APC=+0.1%) but increased during 1994-2019 in females (+0.9%). The mortality rate declined significantly from year 1999 in males (-1.3%) and from year 2000 in females (-1.5%). For all HM cases diagnosed, a 14-percentage point improvement was observed for survival with net survival at 67% 2008-2021 compared to 53% in 1994-2007.

Conclusions: We provide important data on the burden of HM in Ireland - which in general is in line with European counterparts. Advances in diagnosis and treatment are reflected in favourable trends overall, but more focus is needed where trends are less favourable.

Title **Code** 65

BREAST CANCER STAGE AT DIAGNOSIS AND SURVIVAL IN WOMEN RECEIVING ANTIDEPRESSANTS, ANXIOLYTICS AND ANTIPSYCHOTICS IN N.I.

Authors Names

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6. Patient Representative

Theme

Epidemiological clinical use of cancer registry data

Abstract

Objectives: This study examined stage at diagnosis and breast cancer-specific mortality in a population-based cohort of breast cancer patients in Northern Ireland (NI) prescribed medications for mental health conditions before their breast cancer diagnosis.

Methods: Women newly diagnosed with breast cancer from 2011-2021 were identified from the NI Cancer Registry. The primary outcome was time to breast cancer-specific mortality. Secondary outcomes included stage at diagnosis. We identified prescribed medications used for mental health conditions, including anxiolytics, antidepressants, and antipsychotics, in the year before breast cancer diagnosis. Adjusted hazard ratios (aHR) and 95% confidence intervals for cancer-specific mortality by use of medication were calculated with Cox regression models.

Results: We included 13,846 women with breast cancer, with 31.5%(4,361/13,846) prescribed antidepressants, 12.7% anxiolytics and 3.5% antipsychotics in the year before diagnosis. We found little evidence of late-stage disease presentation in women with mental health conditions, but a higher proportion receiving antipsychotics had unknown stage (15% v 4%). No difference in breast cancer-specific mortality was found for those prescribed anxiolytics (aHR=1.06(0.93-1.20)) compared to a small increase for those prescribed antidepressants (aHR=1.11(1.00-1.22)) and a moderate increase for those prescribed antipsychotics (aHR=1.45(1.17-1.81)).

Conclusions: Although breast cancer patients with pre-existing mental health conditions were not diagnosed with later-stage disease, those receiving antidepressants, and especially antipsychotics, had higher breast cancer-specific mortality. Support for women with mental health conditions after breast cancer diagnosis may improve survival outcomes. However, further research into the causes of poorer outcomes is warranted, particularly for women receiving antipsychotics.

Study supported by Breast Cancer Now (Charity number: 1160558).

Title

Code 66

THE ASSOCIATION OF HOUSE VALUE WITH STAGE AT DIAGNOSIS AND SURVIVAL IN BREAST CANCER PATIENTS FROM NORTHERN IRELAND.

Authors Names

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Theme

Social inequalities and cancer

Abstract

Objectives: House value of residence has been shown to be a useful measure of individual-level socio-economic status in the UK, particularly in older adults. We aimed to examine stage at primary diagnosis and breast cancer-specific mortality in a population-based cohort of breast cancer patients by house value of residence at primary diagnosis.

Methods: A cohort of women first diagnosed with primary breast cancer (BC) from 2011 to 2021 were identified using the population-based Northern Ireland Cancer Registry. House value (of residence at primary BC diagnosis) was determined from Valuation and Lands Agency property valuation data. The primary outcome was time to breast cancer-specific mortality up to March 2023. Secondary outcomes included stage at diagnosis. Cox regression models were used to calculate adjusted hazard ratios (HR) and 95% confidence intervals (95%CIs) for cancer-specific mortality by house value category, adjusting for confounders.

Results: The final cohort included 12,766 women with breast cancer. Women living in properties with the lowest value (under £75,000), compared with the highest value (over £200,000), were more likely to be diagnosed with stage 4 disease (7.5% versus 4.1%; $P<0.001$). Women living in properties with the lowest value, versus the highest value, had a 90% increase in mortality (unadjusted HR=1.90 95% CI 1.59, 2.27). This association was slightly attenuated after adjustment for confounders including age, year, comorbidities and deprivation (adjusted HR=1.63 95% CI 1.34, 1.99) and additionally for stage (adjusted HR 1.50 95% CI 1.20, 1.86).

Conclusions: House value was strongly associated with breast cancer outcomes and may provide useful individual-level information on potential inequalities to complement traditional area-based socio-economic and deprivation measures (e.g. Northern Ireland Multiple Deprivation Measure).

Study supported by Breast Cancer Now (Charity number: 1160558).

Title **Code** 70

RISK AND SURVIVAL OF THIRD PRIMARY CANCERS IN A POPULATION-BASED COHORT OF PROSTATE CANCER SURVIVORS

Authors Names

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Theme

Epidemiological clinical use of cancer registry data

Abstract

Objectives: To estimate the long-term risk and survival of third primary cancers (TPCs) among prostate first primary cancer (FPC) survivors.

Methods: A population-based cohort of 13,222 males with a prostate FPC diagnosed between 2000 and 2009, registered by the North Region Cancer Registry of Portugal, was followed until 2021 for TPCs and vital status. We estimated the cumulative incidence of TPCs, and the risk of death among TPCs. TPCs were compared to matched patients with a second primary cancer (SPC) only (1:1, by age-group, time between FPC and SPC, and SPC site) for risk and adjusted hazard of death.

Results: For a period of up to 22 years after PC diagnosis, 169 TPCs were identified, predominantly, in digestive, intrathoracic and urinary tract organs; this corresponds to 15- and 20-year cumulative incidences (95% confidence interval [CI]) of 1.2% (1.0–1.4%) and 1.5% (1.2–1.8%), respectively, among the FPCs, and 9.1% (7.6–10.5%) and 12.0% (8.2–15.9%), respectively, among the SPCs. The 15-year all-cause cumulative mortality was 88.2% (82.2–94.3%) among TPCs and 75.7% (69.6–81.7%) among SPC only patients; the corresponding age-adjusted hazard ratio (95% CI) was 1.79 (1.37–2.34).

Conclusion: Among males with a prostate FPC that are diagnosed with an SPC, just over 10% are expected to be diagnosed with a TPC within 20 years, and these have a nearly two-fold higher death hazard than those with an SPC only.

Title **Code** 71

CHARACTERISTICS AND MORTALITY OF PATIENTS WITH CANCER DIAGNOSED WITH SARS-COV-2 IN NORTHERN PORTUGAL

Authors Names

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Theme

Epidemiological clinical use of cancer registry data

Abstract

Objectives: Patients with cancer have been found to be at higher risk of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection, which may negatively affect their prognosis. This study aimed to compare sociodemographic and clinical characteristics, as well as mortality, between cancer patients with and without SARS-CoV-2 infection.

Methods: Patients with tumors of the esophagus, stomach, colon and rectum, pancreas, lung, skin-melanoma, breast, cervix, non-Hodgkin lymphoma, and leukemia diagnosed between March 2019 and March 2021, and followed at the Portuguese Oncology Institute of Porto (IPO-Porto) were identified. Patients with SARS-CoV-2 infection between March 2020 and September 2021 were compared to patients without infection. Vital status was assessed up to March 2024. Cox proportional hazards regression was used to estimate crude, age- and stage-adjusted hazard ratios (HRs) and 95% confidence intervals (95% CIs) for mortality.

Results: During follow-up, one-third of patients who had SARS-CoV-2 died (vs. one-fourth), corresponding to an adjusted HR (95%CI) of 1.39 (1.03-1.88). Significantly higher adjusted HRs were observed for residents outside Porto's Metropolitan Area (HR=1.94, 95%CI=1.22-3.09), patients with lung cancer (HR=2.02, 95%CI=1.12-3.66) and patients with surgery as the first cancer treatment received at IPO-Porto (HR=2.00, 95%CI=1.08-3.74).

Conclusion: Cancer patients with SARS-CoV-2 infection had higher mortality compared to those without infection, and specific subgroups of patients at higher risk were identified.

Title

Code 74

ADVANCING ARCHIVAL CANCER DATA: A SEMI-AUTOMATED APPROACH IN POLISH ONCO-HAEMATOLOGY REGISTRY (PROH)

Authors Names

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Theme

Data quality

Abstract

Objectives: Frequent updates in medical classifications, particularly ICD and ICD-O, have the greatest impact on malignancy coding. Delays in adopting new standards heighten the risk of miscoding, compromising data comparability and the reliability of epidemiological trends. This study aims to identify and correct misclassified cases in the PROH.

Methods: A combined manual and automated approach was applied to enhance the accuracy of archival data in the database of the Polish National Cancer Registry. Manual verification was conducted using a structured decision tree to assess the dataset consistency. Automated quality checks were performed using JRC-ENCR Quality Check Software to detect discrepancies. In the final step, a process that incorporates natural language processing (NLP) was used to analyse unstructured text data, to identify information that could help improve cancer case classification.

Results: Our novel approach proved to be an effective strategy for improving cancer registry data, significantly enhancing classification accuracy, and reducing historical coding inconsistencies. In particular, the revised methodology altered observed epidemiological trends, particularly in diffuse large B-cell lymphoma, mantle cell lymphoma, and chronic lymphocytic leukemia. A significant number of cases - mostly diagnosed before revolutionary advances in molecular diagnostics—had to be reclassified using less specific codes due to insufficient pathological details.

Conclusions: Cancer registries should leverage all available methods to ensure high-quality data, including IARC/ENCR tools, NLP, and AI-driven solutions. While automation streamlines processes and improves accuracy, human oversight remains crucial for validating complex cases. It is essential to update registry data meticulously, ensuring that no categories and values are artificially altered or introduced, thereby preserving the integrity of epidemiological analyses.

Title

Code 75

AGE-PERIOD-COHORT ANALYSIS OF LARGE B-CELL LYMPHOMA INCIDENCE IN SPAIN (1994-2018): A POPULATION-BASED STUDY

Authors Names

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3. Spanish Network of Cancer Registries (REDECAN)

Theme

Cancer Etiology

Abstract

Objectives: Large B-cell lymphomas (LBCL) are a family of mature B-cell lymphomas that comprise one-third of all non-Hodgkin's lymphomas. Their incidence increases with age, thus being predominantly considered a disease of the elderly. In the absence of clear etiological factors, this study aims to analyze incidence trends, distinguishing between the effects of age, period and birth cohort.

Methods: All primary cases of LBCL diagnosed between 1994 and 2018 coded using the ICD-O-3 (morphological codes: 9678–9680, 9688, 9712, 9735, 9737, 9738) were retrieved from the Spanish Network of Cancer Registries database, covering 25% of the population. Age-standardized rates per 100,000 person-years (using the 2013 European Standard Population) (ASRe) were calculated. An Age-Period-Cohort analysis in the framework of a Poisson generalized linear model was conducted, expressing age effects as incidence rates, and period and cohort effects as rate ratios relative to their references (first value).

Results: A total of 13,566 cases (46.9% women, median age at diagnosis 67 years) were diagnosed. Most cases were classified as the histotype 'diffuse LBCL, not otherwise specified' (97.3%); and located at lymph nodes (55.4%). The ASRe was 5.75 [95% confidence interval (CI):5.65;5.85].
Age-Period-Cohort modelling revealed dramatic age effects; the rate increased up to 80 years (26.4 [95%CI: 20.8;33.5]), followed by a 2.1-fold decrease at older ages. Period effects depicted increased rate ratios that peaked at the most recent year of diagnosis (1.72 [95%CI:1.61;1.83]). Cohort effects showed lower rate ratios for birth years 1914-1944, 1969-1984 and 1994-1999.

Conclusions: This study presents real-world data that enhances the understanding of the effects of age, period of diagnosis and birth cohort in LBLC. Given that LBCL is mainly diagnosed in older individuals and that the Spanish population is aging, continuous monitoring is essential for public health authorities and clinicians.

Title **Code** 76

DIFFERENCES IN SURVIVAL AFTER GASTRIC ADENOCARCINOMA SURGERY BETWEEN HIGH- AND LOW-VOLUME HOSPITALS, SLOVENIA 2016–2020

Authors Names

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Theme

Survival

Abstract

Objectives: Short-term outcomes of gastric cancer surgery are highly dependent on hospital surgical volume, while studies on long-term survival show conflicting results. This study investigates the impact of surgical volume on long-term survival of patients undergoing gastric cancer surgery in Slovenia.

Methods: A retrospective cohort analysis was conducted using data from the Slovenian Cancer Registry. Patients diagnosed with gastric adenocarcinoma cancer between 2016 and 2020 who underwent surgery were divided into high and low surgical volume hospitals. Survival analysis was performed using the Pohar-Perme estimator for net survival, with additional analyses by age, sex, tumour stage, systemic therapy and neoadjuvant therapy.

Results: Of 652 patients, 498 (76.4%) were operated on in two Slovenian hospitals with high patient volumes - the university medical hospitals in Ljubljana and Maribor. The 5-year net survival rate was higher in high-volume hospitals (55.2%) than in low-volume hospitals (45.4%), although the 95% confidence intervals are wide (50.1–60.8% and 36.6–56.3%, respectively). Subgroup analyses showed that the significant survival benefits persisted in analyses by age, stage and neoadjuvant therapy, with the exception of localized stage diagnosed in patients aged 18–54 years.

Conclusions: The extent of surgical intervention has a significant impact on survival in gastric cancer in Slovenia, supporting centralization efforts. Future interventions should aim to balance the benefits of centralization with patient access and equity concerns.

Title

Code 78

50-YEAR INCIDENCE TRENDS OF THE MOST FREQUENT CANCER IN HUMANS: BASAL AND SQUAMOUS CELL CARCINOMAS OF THE SKIN

Authors Names

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Theme

Epidemiological clinical use of cancer registry data

Abstract

Objectives: Nonmelanoma skin cancer, the most common cancer worldwide, primarily encompassing basal cell carcinoma (BCC) and squamous cell carcinoma (SCC), causes substantial morbidity and high economic burden. Despite its increasing challenge for healthcare services and reported rises in incidence, reliable population-based series are limited due to the excessive number of cases to register. This study examines long-term incidence trends of nonmelanoma skin cancer (BCC and SCC) and its determinants in Switzerland using data from two cancer registries spanning nearly five decades.

Methods: We used all first diagnosed malignant BCC and SCC (Vaud: 1974-2019/1974-2022; Neuchâtel-Jura: 1974-2023). We calculated annual age-standardized incidence rates by sex, broad age group, subsite and canton. Changes in incidence rates were identified and estimated annual percent change (EAPC) were computed using the joinpoint regression model.

Results: For BCC, we observed an upward trend from 1974 that levelled off since 2000 (EAPC 2000-2019: 1.6%; 95% CI: 1.1-2.0). For SCC, the increase fluctuated more and was overall larger than for BCC, with a BCC/SCC incidence ratio decreasing from 4 to 2.5 throughout the time period. Gender disparities narrowed over time, with the only age group showing higher BCC incidence in females being those under 50. The highest SCC increases occurred at older ages, whereas BCC incidence rose most steeply in younger individuals, particularly for intermittently sun-exposed areas like the trunk and limbs. Recent SCC increases were most pronounced for the head.

Conclusions: Results support different sun exposure patterns in the etiology of BCC and SCC, and suggest some positive effects of changes in sun exposure. The large increase in BCC under age 50 stresses the need to strengthen primary prevention efforts to mitigate its future impact on healthcare services.

Title **Code** 79

CANCER INCIDENCE TRENDS IN ADOLESCENTS AND YOUNG ADULTS (AYA) IN BASQUE CONTRY (BC) (2001-2019)

Authors Names

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Theme

Age and cancer

Abstract

Objectives: This study aims to analyze cancer incidence among young people (under 50 years) in the Basque Country (BC) during 2015-2019 and to examine trends in adolescents and young adults (AYA, ages 15-49) from 2001 to 2019, in light of increasing cancer rates reported in international studies.

Methods: Data on malignant tumors (excluding non-melanoma skin cancers) were collected from the BC Cancer Registry, focusing on 25 sites of epidemiological interest as per the ICD-10 classification. The study utilized the Basque Country census population, calculating the number of incident cases and both crude and age-adjusted rates using the 2013 European standard population. Tumor groups with fewer than 50 cases in the last five years for each sex were excluded from trend analysis. A log-linear regression model (Join point regression) was employed to assess the annual percentage change (APC) in incidence rates.

Results: From 2015 to 2019, an average of 1,370 new malignant tumors were recorded annually in the AYA population of BC. The crude incidence rates were 105.2 per 100,000 in males and 189.6 in females. Notably, the overall incidence in male AYAs decreased by 1.6% per year from 2001 to 2019, while female rates increased by 0.7% per year. The most common tumors among AYA women were breast cancer, thyroid cancer, colorectal cancer, and cutaneous melanoma. In AYA men, the leading cancers were testicular cancer, colorectal cancer, non-Hodgkin's lymphoma, and kidney cancer. The age-group specific rates are much higher in women than in men, particularly due to breast cancer cases in those aged 40-49.

Conclusions: The cancer burden in AYA men is not increasing in the Basque Country, whereas there is a concerning increase in AYA women, primarily driven by rising breast cancer rates in the 40-49 age group.

Title

Code 81

DATA QUALITY ASSURANCE WITHIN THE SCOTTISH CANCER REGISTRY

Authors Names

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Theme

Data quality

Abstract

Objective: To determine if the Scottish Cancer Registry's (SCR) in-house Quality Assurance programme is successful.
The SCR combines system validation built into the registry's data collection system, SOCRATES, and manual checks.

Methods: SOCRATES runs over 500 validation checks per record before it is available for analysis. This is supported by regional team leaders manually quality assuring data weekly.
SOCRATES validations are a combination of both errors and queries. Errors for example, would include impossible combinations of ICD10/ ICDO and must be corrected before a registration can be confirmed. Queries prompt team leads to manually check records ensuring accuracy and that no training issues need to be addressed.
Quarterly Quality Assurance is undertaken and covers areas such as new data items recommended by ENCR, data items which feed into the UKIACR Performance Indicators such as checks on records with non-specific morphologies or any known areas of concern with completeness.
Ongoing investigations linking SCR to other relevant datasets such as screening data provides the opportunity to prevent quality issues.

Results: Due to the rigorous Quality Assurance of the SCR, in a 2020-2021 independent assessment carried out by Public Health Scotland (PHS), the overall level of accuracy was 98.45% with only 2 data items scoring lower than 95%. UKIACR Performance Indicators also reflect the high level of completeness.

Conclusion: The success of the SCR data quality assurance programme is reflected in the timeliness of data completion and publications. The result of quality assurance activities is fed back to staff to ensure continual improvement and provide a strong basis for training new staff. This ensures that the quality assurance cycle is frequent, repeated and standards are consistent and maintained.

Title

Code 85

INCIDENCE OF CHILDHOOD AND ADOLESCENT CANCER IN THE CITY OF SÃO PAULO, BRAZIL: A TIME-SERIES ANALYSIS

Authors Names

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Theme

Epidemiological clinical use of cancer registry data

Abstract

Introduction: Childhood and adolescent cancers, though rare, are the leading cause of disease-related death in this age group in Brazil and worldwide. For 2023–2025, Brazil expects 7,930 new cases. OBJECTIVE: To describe the incidence and analyze temporal trends in cancer incidence rates among children and adolescents (0–19 years) in São Paulo from 1997 to 2015.

Methodology: This time-series study used data from the São Paulo Population-Based Cancer Registry (RCBP-SP). All confirmed cancer cases in residents aged 0 to 19 years, classified according to the International Classification of Childhood Cancer (ICCC-3), from 1997–2015 were included. Crude and age-standardized incidence rates were calculated by sex and age group. Temporal trends in standardized incidence rates, stratified by major diagnostic group and sex, were analyzed using Joinpoint regression models.

Results: Childhood and adolescent cancers in São Paulo had a high incidence rate (189.6/million), with higher rates observed in males (205.3/million) and in the 15–19 age group (233.8/million). Leukemias were the most common type (42.9/million), followed by lymphomas (26.6/million) and central nervous system tumors (23.0/million). Solid tumors accounted for 63.3% of the cases. Malignant epithelial neoplasms and melanomas were notable among females (24.3/million). Overall, incidence rates remained stable (1997–2015). Leukemia rates declined (1997–2006, APC = -4.60) and stabilized (2006–2015). Lymphomas (APC = -1.63) and central nervous system tumors (APC = -3.46) showed decreasing trends.

Conclusion: Lymphomas' prominence aligns with patterns in low- and middle-income countries despite São Paulo's high Human Development Index, possibly reflecting socioeconomic disparities. The multifactorial etiology of observed trends underscores the need for continuous cancer surveillance, early diagnosis, and the vital role of population-based registries in public health planning.

Title **Code** 86

INCIDENCE OF CHILDHOOD CANCER IN MATO GROSSO, BRAZIL: RESULTS FROM POPULATION BASED CANCER REGISTRY

Authors Names

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Theme

Epidemiological clinical use of cancer registry data

Abstract

Objective: To describe the epidemiological profile and incidence rate patterns of childhood and adolescent cancer in Mato Grosso, Brazil from 2001 to 2017.

Method: Childhood and adolescent cancer data (0 to 19 years) were extracted from the Population-Based Cancer Registry of Mato Grosso from 2001 to 2017, and absolute and relative frequencies were described, as well as specific incidence rates by age (ASR), crude rates (CR), and age-standardized rates using the world standard population (WSR) were calculated and expressed per million person-years at risk.

Results: A total of 1,912 new cases were registered, with a higher frequency in males (51.9%; n= 993). From 2001 to 2017, the WSR for all combined tumors in the 0-19 age group was 163.9. The most frequent diagnoses were leukemia (WSR of 24.7), central nervous system neoplasms (WSR of 13.9), and lymphoma (WSR of 13.4). The ASR for all combined tumors in the 15-19 age group was 117.4, with the highest rate being leukemias (ASR of 40.1) in the 0-4 age group.

Conclusion: Childhood and adolescent cancer in Mato Grosso (2001–2017) showed higher incidence in boys, with leukemia being the most common diagnosis. The results reinforce the importance of early diagnosis and effective public strategies for disease control and health service planning.

Title **Code** 87

HOSPITAL-BASED CANCER REGISTRIES IN CENTRAL-WEST BRAZIL: PROFILE AND COMPLETENESS OF INFORMATION ON CHILDHOOD CANCER

Authors Names

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Theme

Data quality

Abstract

Objective: To characterize childhood cancer and verify the completeness of information in the hospital-based cancer registries (HBCRs) database in the geographic region of the Central-West of Brazil from 2000 to 2022.

Method: Observational, retrospective study of secondary basis, with a quantitative approach. The sample comprised 4,650 cases registered in different cancer registries, contained in the Integrating Module of hospital-based cancer registries of the National Cancer Institute, with information on children and adolescents aged 0 to 19 years.

Results: Childhood cancer was more prevalent in males (53.7%; n=2,458), in children between 0 and 4 years old (30.8%; n=1,630), and residents in Distrito Federal (DF) (33.5%; n=1,557). The hematopoietic and reticuloendothelial system was most affected (26.5%; n=,1,232) and chemotherapy was the most administered therapy (46.2%; n=2,149). In 79.4% (n=3,693) of cases, specialized services have met the legal deadline for starting cancer treatment. Most of the variables were classified as excellently completed, however, 20% were considered poorly completed, with the State of Goiás being the one with the greatest incompleteness of information.

Conclusion: Neoplasms of the hematopoietic and reticuloendothelial systems were the most frequent, affecting mainly younger children and males, showing excellent completion for most of the variables analyzed.

Title

Code 88

CAPACITY BUILDING IN DIGITAL GEOPOLITICS OF CARIBBEAN SYSTEMS: A LEVER FOR POTENTIAL RESILIENCE

Authors Names

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Theme

New methods innovation and AI applications

Abstract

Objectives: Within the framework of the INTERREG VI Caribbean program and based on the international expertise of the Martinique Cancer Registry, we develop an innovative concept to support and coach the development of skills in data-driven innovation and research: the SAVOIR concept. The aim is to create and consolidate a common space for massive data in the Caribbean zone, and to provide multi-disciplinary answers.

Methods: Structured around a partnership with the Martinique Clinical data Warehouse, a Colombian Hospital Registry and the IACR Caribbean Cancer Registry Hub, the SAVOIR concept will offer a continuum to cooperative activities, capitalizing on the implementation of operational tools within an institutional regulatory framework. The project will use new sources of multilingual, massive and heterogeneous data (clinical surveillance, climatic, environmental, epidemiological and socio-demographic data, etc.), which are currently under-exploited, to develop epidemiological preparedness in the Caribbean.

Results: Through this project, we will be able to: (i) to follow the lifecycle of digital projects in line with our ecosystems, (ii) to build capacities integrated into a process of institutional development (iii) to provide in our insular territories a major lever for digital research and innovation in situations of disruption and resilience (iv) to encourage, around communities of expert practice, the debate of innovative ideas and opportunities

Conclusion: SAVOIR is expected to launch new scientific challenges and contribute to structuring research communities, in order to achieve scientific breakthroughs and the emergence of disruptive technologies within the next ten years for the territories of the Caribbean zone. It will generate a high level of activity in terms of research, international relations and scientific and cultural promotion of digital technologies.

Title

Code 91

TEMPORAL TRENDS AND SPATIAL DISTRIBUTION OF PROSTATE CANCER INCIDENCE AND MORTALITY IN SERGIPE, BRAZIL (1996-2022)

Authors Names

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Theme

Epidemiological clinical use of cancer registry data

Abstract

Objectives: Prostate cancer has become a pressing health concern worldwide following the adoption of PSA screening since early 1990s. This led to a surge in prostate cancer diagnoses, particularly in high-income countries, and later in middle- and low-income regions. Our study set out to explore how prostate cancer incidence and mortality have evolved in Sergipe, Brazil, while also examining the geographical distribution of cases to identify areas needing public health focus.

Methods: Data from the Aracaju Cancer Registry and Mortality Information System were analyzed for four periods: 1996-2005, 2006-2012, 2013-2017, and 2018-2022. Incidence and mortality rates were age-standardized, and 95% confidence intervals calculated. Trend analyses used the Joinpoint Regression Program to determine Annual Percent Change (APC) and Average Annual Percent Change (AAPC). Spatial distribution was examined using QGIS and TerraView.

Results: A total of 10,103 cases and 2,798 deaths were analyzed. Incidence rates rose significantly from 1996 to 2006 (APC: 12.9%) but slightly declined from 2006 to 2017 (APC: -1.5%). The highest incidence was observed in men aged 65 and older. Mortality rates also increased until 2006 (APC: 15.1%) before stabilizing, with men aged 75 and above showing the highest rates. The Mortality-to-Incidence Ratio (MIR) indicated improved data quality and survival, though survival estimates slightly declined recently. Spatial analysis revealed uneven incidence and mortality distributions, identifying high-risk municipalities in need of targeted health efforts.

Conclusions: In Sergipe, prostate cancer trends reveal a significant rise in cases and deaths initially, followed by a plateau in recent years. Mapping geographical disparities underscores the importance of focused strategies to enhance early detection and healthcare accessibility for those in underserved areas.

Title

Code 92

CANCER KNOWS NO SPECIES: BUILDING THE FIRST GLOBAL AI-ENHANCED ANIMAL CANCER REGISTRY AND ITS IMPORTANCE FOR ONE HEALTH.

Authors Names

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Theme

Epidemiological clinical use of cancer registry data

Abstract

Animal cancer registries have emerged and faded since 1955, lacking the sustained integration needed to generate robust evidence, as seen in human oncology with GLOBOCAN. While several countries have initiatives and others wish to establish them despite financial constraints, no international system integrates animal cancer data across different nations, particularly those without structured registries or trained registrars. This gap hinders our understanding of cancer patterns in animals and their relevance to human oncology. The Global Initiative for Veterinary Cancer Surveillance (GIVCS) aims to address this issue by developing an AI-powered, open-access platform to standardize and harmonize animal cancer data collection worldwide.

Objectives: Funded by CNPq – Brazil, this project seeks to establish the Global Initiative for Animal Cancer Registries (GIACR), leveraging AI to enhance data classification, improve standardization, and facilitate comparative oncology research. Inspired by IARC's CanReg5 software, GIACR will enable seamless integration of cancer data from veterinary institutions worldwide.

Methods: Building on GIVCS's work, which developed Vet-ICD-O-Canine-1 for canine tumors, this project will implement AI algorithms to automate diagnosis categorization, reduce human error, and enhance interoperability between veterinary oncology data sources. A CanReg5-based software will be developed to receive harmonized data through AI algorithms

Results: This two-year pilot project will collect data from at least three countries, creating an international repository for data analysis, epidemiological reports, and dashboards to support research in animal and comparative oncology worldwide.

Conclusions: Establishing a global AI-powered animal cancer registry is a major step forward in veterinary and comparative oncology, strengthening global cancer surveillance and One Health initiatives.

Title **Code** 93

CANCER MORTALITY BY DEPRIVATION IN THE UK

Authors Names

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Authors Affiliations

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Theme

Social inequalities and cancer

Abstract

Objectives: Cancer is the UK's biggest killer. It is also associated with socioeconomic deprivation, with higher incidence and mortality rates in more deprived areas for most cancer types. This analysis examines the relationship between deprivation and cancer mortality in the UK and its constituent countries, comparing cancer mortality rates in the most versus least deprived areas and estimating the total number of cancer deaths associated with deprivation.

Methods: Population and cause of death data were obtained for each UK nation stratified by deprivation quintile, age, and gender.
Three-year average age-standardised and age-specific mortality rates were calculated for each nation by gender, cancer site, and deprivation quintile.
Deprivation-associated deaths were calculated by subtracting from the observed number of deaths, the number of expected deaths if the entire population had the same age-specific mortality rate as the least deprived.

Results: It is estimated that around 28,400 cancer deaths each year in the UK are linked with deprivation. Age-standardised cancer mortality rates are 55% higher in the most versus the least deprived quintile in the UK, and a similar deprivation gradient is evident across all four UK nations.
Almost half (47%) of deprivation-associated cancer deaths in the UK are from lung cancer. In the UK, age-standardised mortality rates for all broad cancer types are significantly higher in the most versus least deprived quintile.

Conclusion: Around 28,400 cancer deaths each year in the UK could in theory be avoided if the entire population had the same age-specific cancer mortality rates as the least deprived. There is a clear deprivation gradient in cancer mortality across the UK. The reasons for this are complex and run across the entire cancer pathway. They may include higher prevalence of key risk factors including smoking and obesity, as well as an increased likelihood of being diagnosed later, and with more comorbidities.

Title

Code 94

INCIDENCE TRENDS AND SURVIVAL OF PULMONARY NEUROENDOCRINE NEOPLASMS BASED ON GERMAN REGISTRY DATA FROM 2008 TO 2023

Authors Names

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Theme

Epidemiological clinical use of cancer registry data

Abstract

Objectives: Our aim was to provide an epidemiologic analysis of pulmonary neuroendocrine neoplasms (NEN) assessing main tumour characteristics, incidence and survival in a large European cancer registry.

Methods: Pulmonary NENs diagnosed between 2008 and 2023 were identified in the database of the cancer registry North Rhine-Westphalia. NENs were classified as typical carcinoid (NET-T), atypical carcinoid (NET-A), small cell lung cancer (NEC-SC), large cell lung cancer (NEC-LC), NEC combined with other morphology (NEC-MIX) or unspecified NEC (NEC-NOS). Age-standardised incidence rates (ASR) were calculated using the old European standard population. 5-year relative survival (RS) for the calendar period 2019-2023 was estimated using period analysis.

Results: Among all NENs (n = 39,083), the most frequent morphology was NEC-SC (77.7%) followed by NET-T (5.6%) and NEC-LC (5.5%). The ASR of NEN among women was 8.0 per 100,000 and increased over time. For men, the ASR was 10.7 and remained stable. The ASR of NEC-SC increased among women and decreased among men. The ASR of NET-T, NET-A and NEC-LC increased in both sexes. The 5-year RS for women was 13.1% and 21.5% for men. Increasing age, higher grading and UICC stages were strongly associated with worse survival. The 5-year RS for NETs was higher than for NECs (NET-T: 81.5%, NET-A: 53.9%, NEC-SC: 9.7%, NEC-LC: 19.3%, NEC-NOS: 13.1%, NEC-MIX: 17.6%). Women had a higher RS than men in all morphology groups.

Conclusion: Small cell cancer was the dominant NEN in the lung. The ASR of NETs has increased, while the incidence trend of NEC-SC was positive for women and negative for men. Changes in risk factors such as smoking, diagnostic procedures as well as the challenging classification of these morphology groups could have all influenced the observed incidence trends. The degree of differentiation of pulmonary NENs has a huge impact on the survival.

Title

Code 96

25-YEAR TRENDS IN EARLY ONSET CANCER INCIDENCE AND MORTALITY IN THE UNITED KINGDOM, 1993-2019.

Authors Names

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Theme

Age and cancer

Abstract

Objectives: Cancer incidence is rising globally. In the UK, the apparent rise in early-onset cancers - defined as cancers diagnosed in adults under the age of 50 - has become a topic of much interest. Here, we use registry data provided by each of the UK nations to examine trends in cancer incidence and mortality between 1993 and 2019, for adults aged 20-49, across cancer sites.

Methods: Cancer incidence and mortality data were provided by national cancer registries and public health and statistical bodies, providing complete population coverage since 1993. We used Poisson regression to model age-standardised (AS) incidence and mortality rates as a function of year of diagnosis/death, for each combination of cancer site, age group, and gender. The estimated annual percentage change (EAPC) in AS rate was estimated from model slopes. AS rates are presented as three-year rolling averages for 1993-1995 and 2017-2019 to smooth yearly variation.

Results: Between 1993-1995 and 2017-2019, AS cancer incidence rates for all cancers combined in people aged 20-49 in the UK increased by 23.7%, more than in any other age group. This represents an EAPC of 1.02% (95% CI: 0.91-1.14) in females and 0.92% (95% CI: 0.8-1.04) in males. Incidence rates increased for most cancer sites, with particularly large increases for prostate (EAPC 7.63; 95% CI: 6.81-8.47), thyroid (5.61; CI: 5.21-6.01), and kidney cancers (3.60; CI: 3.16-4.05) in males and thyroid (5.85; CI: 5.50-6.21), small intestine (4.22; CI: 3.45-4.99), and kidney cancers (3.29; CI: 2.87-3.71) in females. By contrast, mortality rates decreased by 36.3% between 1993-1995 and 2017-2019, an EAPC of -2.10% (95% CI: -2.26- -1.95) in females and -1.88% (95% CI: -2.05- -1.72) in males.

Conclusions: Since the early 1990s, cancer incidence rates have increased more in adults aged 20-49 than in any other age group, though with considerable variation across cancer site. Further work is needed to determine the causes of this trend.

Title **Code** 102

DYNAMICS OF CHANGES IN CANCER INCIDENCE AND MORTALITY IN A FRENCH WEST-INDIES TERRITORY (2016-2020)

Authors Names

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Theme

Social inequalities and cancer

Abstract

Objectives: To describe the dynamics of changes in cancer incidence and mortality in a French West-Indies territory over the period 2016-2020.

Methods: Data on the 18 most frequent cancer sites were collected from the Martinique Population Based Cancer Registry, coded in strict compliance with international standards set by International Agency for Research on Cancer. We calculated standardized incidence rates and temporal trends for deaths using the global population standard, by sex. Mortality rates were obtained from the French Epidemiology Center on Medical Causes of Death (CépiDc).

Results: Between 2016 and 2020, 9,110 new cases of cancer were recorded (all sites combined). Among men (60% of the new cases), the most common cancer was prostate cancer (55.2%), followed by colorectal cancer (10.7%) and stomach cancer (4.8%). For women, the most frequent cancer was breast cancer (35.7%), followed by colorectal (14.4%), corpus uteri (6.7%) and stomach (3.3%) cancers. Over the period, 4,187 cancer deaths were recorded in Martinique (55% in men). The most common sites involved in cancer deaths in men were prostate (24.1%), followed by colorectal (12.3%) and lung (9.9%). In women, it was breast cancer (18.2%), then colorectal cancer (12.3%) and pancreatic cancer (8.9%).

Conclusions: The evidence-based results will be used to share epidemiological findings in the field of oncology in the overseas regions, through the development of observation systems and knowledge of population health in the Caribbean. The incidence (all sites combined), lower in Martinique than in mainland France, is expected to change unfavorably with the aging of the population, as well as the increasing prevalence of lifestyle-related risk factors. In addition, the role of infectious agents and specific environmental factors in the Caribbean area would help identify other possible risk factors for this epidemiological transition in this specific high-burden area

Title

Code 104

REPRESENTATIVENESS OF A REAL-LIFE COHORT ON LYMPHOMA AND POPULATION-BASED CANCER REGISTRY DATA IN FRANCE

Authors Names

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Theme

Epidemiological clinical use of cancer registry data

Abstract

Objectives: To evaluate representativeness (R) of the study population between a prospective cohort entitled “”REal world dAta in LYmphoma and Survival in Adults”” (REALYSA) and Population-based cancer registry (PBCRs) data, for years 2020 and 2021.

Methods: We compared data from the real-life cohort REALYSA to Population data from PBCRs. REALYSA aims at identifying newly diagnosed lymphoma patients with clinical, biological, genetic, epidemiological and tumoral prognostic factors. The study included 6,015 newly diagnosed patients with lymphoma all over France (35 centers; 7 most frequent lymphoma subtypes diagnosed 2018 to 2023). The R of the REALYSA was assessed for two years: 2020 and 2021, in areas covered by PBCRs representing almost the half of the cases included in REALYSA (46%). We compared matched cases by age, sex and histological subtypes.

Results: During 2020 and 2021, we included 803 patients in REALYSA while 4,637 incident cases were collected in PBCRs (exhaustiveness: 17.2% overall, from 8.5% in Loire-Atlantique County to 34.6% in Haute-Vienne County). There was no heterogeneity by sex (Male cases represented 18% of incident cases expected in the PBCRs and female 17%). REALYSA patients were younger compared to PBCR’s patients. Median of age was 64y and 69y old respectively. The proportion varied drastically by subtypes (12.3% for T-NHL, 12.5% for Burkitt L., 20% for Follicular L., 21% for Diffuse large B-cell, 23.8% for Hodgkin L. and 25.3% for Mantle-Cell L.). We didn’t find major discordances in subtypes between cohort and PBCRs.

Conclusions: Assessed on half of REALYSA study population, by design, this evaluation shows a relatively good representativeness of lymphoma cases between the cohort and PBCRs, knowing that it was assessed during COVID years when two lock-down prevented any inclusion in 2020. The most important difference is, as expected, the lack of inclusion of older old lymphoma cases except for Hodgkin lymphoma. Representativeness by

Title

Code 105

TRAJECTORIES OF BMI CHANGES AND THEIR ASSOCIATION WITH OVERALL SURVIVAL IN BREAST CANCER PATIENTS IN LIMOGES, FRANCE

Authors Names

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Theme

Epidemiological clinical use of cancer registry data

Abstract

Introduction: The variation in body mass index (BMI) after breast cancer diagnosis and its relationship with patient survival remain poorly explored. This study aims to analyze the association between post-diagnosis BMI changes and overall survival in the context of breast cancer.

Method: This retrospective cohort study in Limoges, France, used the Haute-Vienne Cancer Registry to identify women aged ≥18 with histologically confirmed invasive breast cancer (2014–2018). Clinical data were extracted from Limoges University Hospital records, including weight measurements at diagnosis and follow-up for BMI trajectory analysis. Follow-up continued until December 31, 2021, death, or last contact. A joint model, integrating mixed-effects and Cox models, assessed BMI evolution and overall survival, adjusting for prognostic factors and confounders.

Results: A total of 531 patients diagnosed with breast cancer were included in the study, with a median follow-up of 6.3 years. At diagnosis, the mean BMI was 28.7 ± 3.2 kg/m², and 16.2% of patients had died by the end of the follow-up period. The linear mixed-effects model revealed a significant change in BMI over time ($p < 0.0001$), with a slight increasing trend following diagnosis. Regarding survival, after adjusting for age, stage, presence of metastases, and recurrences, BMI did not show a significant protective effect against mortality (HR = 0.96, 95% CI [0.92 – 1.01], $p = 0.0808$). The joint model identified a significant association between BMI trajectory and overall survival ($p < 0.0001$). Specifically, patients with a higher BMI had a lower risk of mortality (HR = 0.51, 95% CI [0.45 – 0.57]). The estimated association parameter ($\alpha = -14.9$, $p < 0.0001$) suggests a strong inverse relationship between BMI and survival.

Conclusion: These findings suggested that BMI evolution over time significantly influences breast cancer survival. Further research is needed to elucidate the underlying mechanisms of this protective effect.

Title

Code 106

CANCER OF UNKNOWN PRIMARY SURVIVAL TRENDS IN SCOTLAND AFTER 2010: THE IMPACT OF TUMOUR TOPOGRAPHY

Authors Names

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Theme

Survival

Abstract

Objectives: Cancer of unknown primary (CUP) is a heterogeneous metastatic cancer with relatively low survival in Scotland. Improvements in overall cancer and the most common primary in CUP (lung) after 2010, alongside improvement in CUP survival trends in other countries, prompted us to investigate whether CUP survival improved in Scotland. We aimed to assess trends in CUP survival in Scotland after 2010, and the impact of tumour topography changes on overall survival.

Method: Population-based descriptive study using Scottish Cancer Registry data for Scotland 2000-2019 with follow-up until 2021. Patients with CUP were defined based on ICD-10 classification: C26, C39 and C76-C80. CUP survival was examined before and after 2010 (from 2000-2009 to 2010-2019). Median survival was calculated using the Kaplan-Meier and net survival was calculated using Pohar-Perme method.

Results: Median survival of patients improved from 5.7 [5.4, 5.8] in 2000-2009 to 6.2 [6.1, 6.4] weeks in 2010-2019. The survival of CUP patients with lymph node involvement has increased from 40.4 [34.5, 52.8] to 92 [66.2, 134] weeks. Overall survival of CUP patients with multiple metastatic sites increased from 4.4 [4.1, 4.7] weeks to 5.4 [5.1, 5.5] weeks. The 1-year net survival increased from 8.8% [8.3, 9.3] to 9.9% [9.3, 10.6].

Conclusion: The increase in observed survival (~4 days) and 1-year net survival statistically supports the improvement in CUP survival. Although the improvement was clinically small, CUP has one of the worst prognoses, so even these small changes may be important. Survival improved by 1 year in CUP patients with lymph node involvement, but this group accounted for ~5% of patients. Conversely, survival improved by 1 week in CUP patients with multiple metastatic sites, accounted for ~52% of patients. Thus, the overall survival improvement may be partially driven by better outcomes in patients with lymph node and multiple metastatic site involvement.

Title

Code 108

PRIMARY LIVER CANCER SURVIVAL BY SUBTYPES IN SCOTLAND: POPULATION-BASED CANCER REGISTRY OF 9092 CASES FROM 2000-2019

Authors Names

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Theme

Survival

Abstract

Objectives: The survival rate of primary liver cancer (PLC) has been reported to be increasing in many European countries in recent decades. We aimed to report how PLC survival has been affected by PLC subtypes in Scotland between 2000 and 2019.

Method: Individual-level data were accessed from 2000 to 2019 and followed up by the end of 2022 from the Scottish Cancer Registry, a nationwide, population-based registry. PLC patients (n=9092) were defined as ICD-O-3 C22 with all morphological codes. Hepatocellular carcinoma (HCC) patients were defined as ICD-O-3 C22 with 8170-8175, 8180 morphological codes and ICD-O-3 C22.0 with 8010, 8140 morphological codes. Intrahepatic cholangiocarcinoma (iCCA) patients were defined as ICD-O-3 C22 with 8160-8161 morphological codes and ICD-O-3 C22.1 with 8010, 8140 morphological codes. The median survival was calculated by the Kaplan-Meier estimator. Joinpoint regression analysis was applied to examine the survival trend.

Results: PLC median survival was calculated annually in Scotland in 2000-2019. Two turning points of PLC median survival, which were 2008 and 2012, were selected by applying the Joinpoint regression analysis. PLC median survival increased from 3.4 months [(3.1, 3.8), n=2640] in 2000-2007 to 7.1 months [(6.6, 7.6), n=4981] in 2012-2019. HCC median survival increased from 3.8 months [(3.3, 4.3), n=1308, 53.2% of PLC] in 2000-2007 to 11.1 months [(10.3, 12.1), n=3283, 65.9% of PLC] in 2012-2019. iCCA median survival did not change from 3.9 months [(3.3, 4.7), n=795, 32.3% of PLC] in 2000-2007 to 3.8 months [(3.6, 4.3), n=1519, 30.5% of PLC] in 2012-2019.

Conclusion: PLC and HCC survival increased in Scotland between 2000 and 2019, while iCCA survival did not change. The proportion of HCC among PLC increased from 2000-2007 to 2012-2019 and PLC survival has mainly driven by HCC survival in Scotland. HCC and iCCA survival were almost similar in 2000-2007. However, iCCA survival was the poorest in 2012-2019.

Title

Code 109

INCIDENCE AND SURVIVAL ANALYSIS OF GASTRIC CANCER BY SUBGROUPS BASED ON NORTH-RHINE WESTPHALIA CANCER REGISTRY DATA

Authors Names

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Theme

Epidemiological clinical use of cancer registry data

Abstract

Objectives: Gastric cancer is a common cancer with a poor prognosis. While it is more prevalent in Asian countries, most studies focus on these populations. This study examines the epidemiology of gastric cancer with a focus on the effects of different subgroups.

Methods: This analysis is based on data from 2010 to 2023 from the Cancer Registry North Rhine-Westphalia. Age-standardized incidence rates (ASR) were calculated (old European Standard). Additionally, 5-year relative survival (RS) was estimated using period analysis, and Annual Percentage Change (APC) was determined.

Results: ASR in 2023 is 13.5 per 100,000 py for men and 7.6 for women. Over the observed period, APC is -2.6% in men and -2.3% in women. The most common tumour location in men is the cardia (m: 33.1%, w: 15.2%), and the corpus ventriculi in women (w: 20.3%, m: 14.9%). Histological subtypes include adenocarcinoma (ADC: m = 76.9%, w = 66.5%), gastrointestinal stroma tumours (GIST: m = 7%, w = 10%), neuroendocrine tumours and carcinoma (NET: m = 2.5%, w = 5.2%; NEC: m = 0.7%, w = 0.4%), and squamous cell carcinoma (SCC: m = 0.5%, w = 0.3%). While ADC (both sexes) and SCC (men) incidence declines (APC: m = -3.3%, w = -4.0%; SCC: m = -2.6%), other subtypes are increasing (GIST: m = 3.1%, w = 3.4%; NET: m = 1.0%, w = 2.7%; NEC: m = 2.6%, w = 3.1%; SCC: w = 1.9%). RS is 45.4% in women and 38.7% in men. RS of tumours of the fundus and the lesser/greater curvature is 60.3% and 60.5%/58.8%, respectively, whereas cardia and pylorus show poorer outcomes (32.2%; 29.7%). GISTs and NETs have the best RS (87.5%; 86.9%), while RS of ADC (32.6%), SCC (16.3%), and NEC (10.2%) is worse. Higher stage and grading are associated with poorer survival.

Conclusions: This study confirms that gastric cancer remains a major malignancy with a poor prognosis, strongly depending on sex (men), topography (cardia, pylorus), histology (ADC, SCC, NEC), and stage.

Title

Code 110

EPIDEMIOLOGY OF LUNG CANCER IN NEVER SMOKERS BASED ON CANCER REGISTRY DATA

Authors Names

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Theme

Epidemiological clinical use of cancer registry data

Abstract

Objectives: Lung cancer in never smokers (LCNS) is increasingly recognized as a distinct disease. However, its study is hampered by incomplete smoking data in cancer registries and challenges in determining denominators for never smokers. Here, we provide a comprehensive epidemiologic profile of LCNS, comparing incidence, demographics, and survival with lung cancer in (ever) smokers (LCS).

Methods: We analyzed LCNS for 2005–2021 using Florida Cancer Registry data (US state with 30% Spanish-speakers), where smoking history completeness is ~84%. FCDS was linked with statewide hospital records to identify LCNS-associated conditions. Incidence rates were derived using National Health Interview Survey (NHIS) smoking prevalence, and 5-year age-adjusted cause-specific survival (AACSS) was estimated through passive follow-up to 2021.

Results: Among 275,507 lung cancer cases, 12.2% were LCNS, 71.7% LCS, and 16.1% had unknown smoking status. Median ages were 73, 70, and 72 years, respectively. LCNS ranked as the 11th most common cancer in men and 8th in women. From 2014–2018, LCNS incidence varied slightly by race (~15% range), peaking in Asians and lowest in Latinos. Trends remained stable (AAPC: -2.4%, p=0.16). Sex distribution was similar at younger ages but skewed male in those >65. Asthma prevalence was modestly higher in LCNS (PR: 1.07, 95% CI: 1.01–1.13), but COPD and rheumatoid arthritis showed no association. 5-year AACSS was 37.5% (95% CI: 36.9–38.1%) for LCNS vs. 26.4% (95% CI: 26.2–26.7%) for LCS. Adjusted for age, sex, and race/ethnicity, LCS had a higher mortality risk (HR: 1.25, 95% CI: 1.23–1.27) than LCNS.

Conclusions: LCNS has distinct epidemiological characteristics and better survival than LCS. As smoking prevalence declines and LCNS cases rise, research into its biological and environmental drivers is crucial. Improved smoking history data in cancer registries is essential to refine epidemiologic analysis and enhance early detection strategies.

Title **Code** 111

NEW INSIGHTS INTO ENDOMETRIAL CANCER STAGE DISPARITIES BY HISTOPATHOLOGY.

Authors Names

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Theme

Epidemiological clinical use of cancer registry data

Abstract

Objectives: Endometrial cancer (EC) is the 4th most common cancer among U.S. women. Non-Latino Black (NLB) women are diagnosed at more advanced stages compared to non-Hispanic White (NLW) women. However, tumor stage disparities stratified by the heterogeneous histopathologic spectrum (low-grade endometrioid, high-grade endometrioid, and non-endometrioid) remain poorly understood.

Methods: We analyzed all EC cases from 2005–2021 in Florida's cancer registry (30% Spanish-speaking). Logistic regression estimated odds of advanced-stage diagnosis across racial-ethnic groups, stratified by histopathologic type, adjusting for age and other covariates.

Results: Among 52,499 cases, 52.4% were low-grade endometrioid, 18.2% non-endometrioid, and 9.6% high-grade endometrioid. Compared to NLW women, Latino women showed no significant stage disparities, but NLB women had significantly higher odds of advanced-stage diagnosis for high-grade endometrioid (OR: 1.20, 95% CI: 1.02–1.42) and non-endometrioid (OR: 1.33, 95% CI: 1.20–1.48) tumors. Asian women had significantly higher odds for low-grade endometrioid (OR: 1.37, 95% CI: 1.09–1.71) and non-endometrioid (OR: 1.44, 95% CI: 1.06–1.97) tumors.

Conclusions: NLB and Asian women are disproportionately diagnosed at advanced EC stages, particularly for non-endometrioid histologies. Despite this, survival statistics (SEER & Florida) reveal average survival for Asian women but significantly worse survival for NLB women, suggesting disparities in treatment quality and access. Limited access to high-quality care and inadequate early symptom evaluation (e.g., postmenopausal bleeding) contribute to diagnosis delays. Public health initiatives must prioritize earlier EC detection and improved survival for vulnerable populations.

Title

Code 112

SURVIVAL OF PATIENTS WITH INVASIVE BREAST CANCER ACCORDING TO MOLECULAR AND HISTOLOGICAL SUBTYPES

Authors Names

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Theme

Epidemiological clinical use of cancer registry data

Abstract

Using molecular biology for the identification of the intrinsic subtype present in invasive breast cancer (IBC) has determined differences in prognosis and response to treatment using targeted therapy. We assess the association between survival of IBC and pathological characteristics of tumor.

Methods: We obtained clinical and pathological data from females >18 years, diagnosed with IBC in a high-level-complexity treatment center in Cali-Colombia 2015–2020. Tumors were classified per International Classification of Diseases for Oncology_V3. The biomarkers estrogen receptor (ER), progesterone receptor (PR), Ki-67 proliferative index and human epidermal growth factor receptor-2 (HER2) were evaluated by immunohistochemistry (St-Gallen-International-expert-consensus). Correlation was evaluated by Chi-square test. We estimated 3-year overall survival (OS-3y) using Kaplan-Meier and we used logistic regression to estimate association (RR).

Results: 330 patients, aged 18–95 years with IBC were identified, 50% were 40–59year. 85% were non-special-type carcinomas. The mean tumor size was 5.42±4cm, 59% had advanced-stage disease (III–IV). The most frequent molecular subtypes (MS) were Luminal-B (L-B) 53% followed by Triple Negative (TN) 23%, Luminal-A (L-A) 14%, and HER2-enriched 10%. We found association between MS and histological grade (HG) (p<0.001), lymph vascular invasion (LVI) (p<0.001) and lymph node metastasis (LNM) (p=0.03). TN subtype had a higher risk of death (RR2.1, p<0.001) compared to L-A subtype (RR0.52, p<0.001). OS-3y for the cohort was 82%, higher among patients with L-A/B tumors 91-89% than with non-Luminal HER-2-enriched-TN 74-66%, (p<0.001).

Conclusions: L-B was the most frequent IBC. HER-2-enriched and TN subtypes were associated with HG, LVI, LNM, a higher risk of death. This study provides epidemiological data that supports capacity of molecular markers as an accurate tool to establish prognosis and a tailored therapeutic strategy in patients with IBC

Title **Code** 116

PANCREOS: A NETWORK OF REGISTRIES ON PANCREATIC CANCER

Authors Names

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Theme

Epidemiological clinical use of cancer registry data

Abstract

Objectives: Pancreatic cancer (PC) is the only cancer with rising mortality in both sexes and the 4th leading cause of cancer death in Europe. PC registries are essential both for advancing PC research and for enabling Member States to fulfill their commitments to effective cancer control. We aim to implement a European network of PC registries under the umbrella of the PancreOS project.

Methods: PancreOS builds upon existing population- and hospital-based registries, as well as specific pancreatic cancer registries. As the first step (phase I), we collected summarized pathological confirmed pancreatic ductal adenocarcinoma (PDAC) and adenocarcinoma non-otherwise specified (NOS) data from each registry by using the REDCap web application.

Results: Currently, out of the 26 registries that have already expressed their interest in the project, 9 of them have provided the data. Initial findings indicate significant differences in PC diagnostics across Europe, the use of imaging techniques, and tumor sample collection. Variations in tumor characteristics gathering, such as location, grade, and staging criteria, were also observed across registries, necessitating standardized data collection protocols. Additionally, treatment approaches varied considerably across registries, impacting patient outcomes. Survival rates at three years ranged from 6% to 25%, highlighting discrepancies in data recording methodologies and patient follow-up practices.

Conclusions: The PancreOS initiative represents a necessary and beneficial tool that promises to advance our understanding of PC patient management in Europe. By fostering collaboration among registries and facilitating the standardization of data collection, the project aims to enhance the PC quality of care and improve patient outcomes across the continent. This way, PancreOS bridges registry activities with the broader PC research and medical community, driving progress against this devastating disease.

Title

Code 118

BREAST CANCER’S IMPACT IN EUROPE: FIRST RESULTS FROM THE ELISAH PROJECT

Authors Names

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Theme

Epidemiological clinical use of cancer registry data

Abstract

Objectives: To estimate breast cancer impact in European countries through incidence, mortality and prevalence.

Methods: We used IARC database of Cancer Incidence in Five Continents (XII edition) to estimate age-standardized rates and age-specific rates on European population 2013. Thirty European countries participated to IARC’s call with 133 Cancer Registries. We used the r/R index to highlight geographical variations within countries.
We also estimated age-standardized rates and age-specific rates through data from Global Burden of Disease 2021 for 48 European countries. These data were also used to estimate age-standardized and age-specific mortality rates and the number of prevalent cases in 2021. We also analyzed the mortality-to-incidence ratio (MIR) for all European countries.

Results: Breast cancer incidence rates tended to be higher in many Northern and Western European countries, while the lowest rates were observed in Eastern and transcontinental Asian regions. Mortality rates were highest in Georgia and parts of Balkan Europe, and lowest in Asian and Eastern Europe. However, MIRs showed higher values in Eastern and Asian Europe. Many of these countries also showed a lower percentage of prevalent cases in 2021. There were also very different age-specific patterns among Nations in both incidence and mortality rates.
The data were also discussed using international databases for the assessment of certain risk factors, screening levels and with a detailed focus on demographic fertility indices.

Conclusions: This first phase of the study highlighted important differences in the impact of breast cancer in terms of incidence and mortality, reaffirming the importance of prevention. However, our findings emphasized the role of Cancer Registries as a very important source of information. The lack of access to more precise territorial details did not allow a better assessment of the differences within countries.

Title

Code 119

INCIDENCE, TREATMENT PATHWAY AND SURVIVAL OF CENTRAL NERVOUS SYSTEM TUMORS BY HISTOTYPE IN THE VENETO REGION, ITALY

Authors Names

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Theme

Epidemiological clinical use of cancer registry data

Abstract

Objectives: The aim of our study was to evaluate incidence, treatment pathways, and survival of malignant central nervous system (CNS) tumors in the Veneto Region (North-eastern Italy), with a focus on the most common histologic types.

Methods: We included all incidence cases of CNS tumors in adults registered by the Veneto Cancer Registry (VCR) between 2016 and 2020. Since tumor grade is not recorded for this type of tumor, a specific algorithm has been developed to extract it from textual diagnosis of pathology reports. The most frequent cancer types have been analyzed in terms of surgical procedures, cancer treatments (chemotherapy or radiotherapy) and survival, using healthcare administrative data.

Results: Between 2016 and 2020, 2,824 cases of malignant CNS tumors and meningioma (grade 2-3 according to the WHO 2016 classification) were recorded in the Veneto Region, with a higher incidence in men and most cases being diagnosed in patients over 70 (45.2%). The most common tumor types were glioblastoma (n 1,056), meningioma (n 298), and anaplastic astrocytoma grade 2-3 (n 154). Incidence rate in 2016-2020 is 12.5 per 100,000 inhabitants: 5.2 for glioblastomas, 0.8 for astrocytomas and 1.5 for meningiomas. About half of glioblastoma and astrocytomas cases underwent surgery and treatment; percentages were lower for and meningioma (12.4%), which undergoing only surgery in 54.7% of the cases. Combined chemotherapy and radiotherapy were used in more than half of glioblastomas and astrocytomas, while in 41.9% of oligodendrogliomas. Five-year relative survival was 5.7% for glioblastoma, 45.8% for anaplastic astrocytoma and 82.5% for meningioma.

Conclusions: Despite the growing focus on oncology, the scientific evidence on the follow-up and survival of CNS tumors by histotype is limited. Our study contributes to a deeper understanding of the challenges faced by CNS tumor patients and offers valuable insights into improving their management and long-term care.

Title

Code 120

LONG-TERM SURVIVAL OF ALL BREAST CANCER IN WOMEN OF A MEDITERRANEAN REGION IN SPAIN

Authors Names

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Theme

Survival

Abstract

Objectives: Breast cancer 5-year survival has improved but, what happened afterwards? The objective is to know prognosis of BC at 10-year from diagnosis by period and stage in the Region of Murcia.

Methods: From Murcia population based cancer registry have been selected BC incident cases in women between 1990 and 2000 (ICD10-C50). Variables: age at diagnoses, year of incidence, stage at diagnoses, vital status and date of vital status. Stage based on TNM: Localized T1, T2, T3, N0, M0: L00; Node involvement (any T/N+/M0): N+; Advanced M+; Unknown TX/NX/MX. The end of follow-up was 12/31/2022 with an average of 9.7 years. Observed survival (OS) has been estimated using Kaplan–Meier, with 95%CI. SO was calculated at 10 years for cases diagnosed in 1990–1999, 2000–2009 and 2010–2020, and by cancer stage. The OS was directly standardized by age (OS-AS) with the weights of ICSS.

Results: Between 1990 and 2020, 18,653 cases of BC were diagnosed (190 DCO excluded) including 18,463 in. Loss to follow-up accounted for 0.2%. L00 in 2010–2020 was 47%, in 2000–2009 42.6% and 1990–1999 25.6%. Total M+ accounted for 4.9%. Unknown stage was 6.5% in 2010-2020 and 42.2% in 1990-1990. Overall OS-AS at 10y was 47% (95%CI 45-49), 60% (95CI% 59-62), and 65 (95CI% 64-67), in 1990-1999, 2000-2009 and 2010-2020 respectively. For localized BC, OS-AS has improved from 66.2% in the first period to 75.8% in the last one. For the lymph node-positive stage, the OS has increased from 43% in 1990–1999 to 65% in 2010–2020. In M+ the 10-year OS-AS has improved from 6% in the first period to 11% in the last one.

Conclusions: Over the last 30 years an improvement of 20 points in OS has been observed. The prognosis for localized BC has improved, being alive at 10 years more than 75% of women in the last more recent period. In metastatic cancer, despite showing improvement, the 10-year survival continues to be low. It is necessary to have long-term survival as a useful tool for knowing the BC results in care

Title

Code 121

ELISAH: TARGETED INTERVENTIONS FOR BREAST CANCER RISK REDUCTION ACROSS EUROPE

Authors Names

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Theme

Cancer Etiology

Abstract

Holistic breast cancer prevention by addressing modifiable risk factors and health inequities.

Objectives: To analyse European cancer plans and risk factors (WP2), determine risk factor prevalence in breast cancer patients (WP3), implement lifestyle interventions (WP4), reduce health inequalities (WP5), improve urban environments (WP6), and ensure effective dissemination (WP7).

Methods: WP2: Gap analysis of national cancer plans, breast cancer rates, and risk factor distribution using databases, identifying disparities. WP3: High-resolution studies using cancer registries in Greece, Italy, Spain, and Ukraine to assess obesity, tobacco, and alcohol prevalence in breast cancer patients. WP4: Web-based interventions for lifestyle changes (diet, physical activity, smoke and alcohol), increased awareness about additives, harmful chemicals in food and cosmetics, ultra-processed foods and minimal advice interventions during mammography, targeting 3000 women each. WP5: Actions addressing health inequalities, including interviews with 1000 IDPs in Ukraine and policy paper development. WP6: Urban environment analysis in selected cities (Milan, Athens, Ivano-Frankivsk) to identify and propose actions to improve built environments. WP7: Dissemination of findings through the Health Policy Platform and stakeholder meetings.

Results: Detailed gap analyses, risk factor prevalence data, intervention feasibility, policy recommendations, improved urban planning, and increased awareness among stakeholders and the public, with a focus on vulnerable populations.

Conclusion: ELISAH will provide actionable data and implement targeted interventions to bridge the gap between research and practice, driving a holistic approach to breast cancer prevention across Europe, with a strong emphasis on addressing health inequalities and vulnerable populations.

Title

Code 122

BREAST CANCER INDICATORS – INITIAL ANALYSIS OF SWISS CANCER REGISTRY DATA FROM 2020–2021

Authors Names

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Theme

Epidemiological clinical use of cancer registry data

Abstract

Objectives: The National Agency for Cancer Registration (NACR) defined a list of indicators designed to assess the cancer incidence, burden, and quality of care in Switzerland. These indicators provide a framework for monitoring trends and developments in cancer incidence and management among adults. This study presents the first assessment of breast cancer indicators using Swiss cancer registry data from 2020 and 2021.

Methods: Data from the National Agency for Cancer Registration in Switzerland, covering all Swiss cantons was used, including all cases of invasive primary breast cancer (ICD-10 C50) diagnosed in 2020 and 2021. This initial analysis focuses on stage distribution (UICC TNM Classification of Malignant Tumours) at diagnosis, treatment decisions by tumour boards, and time from diagnosis to surgery. Additional breast cancer indicators will be presented at the meeting.

Results: Between January 2020 and December 2021, 13,359 cases of invasive breast cancer (ICD-10: C50) were diagnosed in Switzerland. Stage information was available for 12,663 cases, representing 94.8% of all cases. Among these, 5158 (40.7%) were stage I, 5470 (43.2%) stage II, 1050 (8.3%) stage III, and 985 (7.8%) stage IV. Treatment decisions were made at a tumour board for 11041 (82.6%) cases. Among the 8,906 Stage I-III cases, excluding those with neoadjuvant therapy or a palliative treatment goal, 6478 (72.7%) underwent surgery within one month of diagnosis.

Conclusion: This baseline analysis establishes a foundation for future monitoring, enabling the identification of trends and potential improvements in breast cancer diagnosis and treatment in Switzerland. It also facilitates international comparisons.

Title

Code 123

ANALYSIS OF CANCER IN THE ELDERLY (≥70 YEARS) IN THE PROVINCE OF GIRONA, SPAIN (2002-2021): AN AGE-PERIOD-COHORT STUDY

Authors Names

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Theme

Age and cancer

Abstract

Objectives: To analyze the epidemiological effects of aging, period of diagnosis, and birth cohort in cancer diagnoses in elderly adults aged in Girona (2002-2021).

Methods: All invasive primary cases diagnosed during 2002-2021 in the province of Girona were retrieved and coded according to ICD-O-3 codes. Variables included sex, age at diagnosis, birth year, year of diagnosis, and tumor site. Age-standardized rates were calculated using the European standard population (2013). Age-period-cohort (APC) modeling assessed the effects of age, period, and birth cohort.

Results: A total of 63,242 tumors (37,929 men, 60.0%; 25,313 women, 40.0%) were included. Median age at diagnosis was 79 years (interquartile range: 74-84). Skin non-melanoma was the most common cancer in both women (29.7%) and men (23.9%). In men, the second most frequent cancer was prostate cancer (17.6%), while in women, it was breast cancer (13.6%). Descriptive analysis conducted prior to the APC modeling revealed that rates increased with age for both women and men, while a decrease was observed with an increase in both the period and cohort effects for all cancer types, excluding skin non-melanoma. However, results varied across cancer types, such as lung, in which women showed an increase in the incidence in recent periods of diagnosis. The highest period effect was observed in prostate cancer, as men from the same cohort of birth during the period 2002-2010 showed higher incidence rates compared to those diagnosed 2010 and onwards. APC adjusted models will be applied in the next steps.

Conclusions: Cancer patterns in older adults in Girona suggest different effects of age, period and cohort depending on cancer type. These findings highlight the importance of analyzing the incidence in elderly patients to design targeted interventions. For example, the rising lung cancer incidence in women underscores the need for strengthened prevention strategies.

Title **Code** 125

ALLOSTATIC LOAD AND COLORECTAL CANCER RISK IN THE EPIC-GRANADA COHORT: AN ALTERNATIVE WAY TO STUDY THE ROLE OF STRESS

Authors Names

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Theme

Cancer Etiology

Abstract

Objectives. Chronic stress may increase the risk of colorectal cancer (CRC) through several mechanisms, including neuroendocrine activation, immune system disruption, and gut microbiota dysbiosis. However, epidemiological evidence about the relationship between stress and CRC remains inconclusive. Recently, a model focusing on the cumulative biological burden of chronic stress, called ""allostatic load"", has started to be applied in oncology with promising results. The European Prospective Investigation into Cancer and Nutrition (EPIC) cohort, in which cancer incidence is periodically assessed by population-based cancer registries, offers a unique opportunity to investigate the association between allostatic load and CRC risk.

Methodology. We conducted a pilot case-control study embedded in the EPIC sub-cohort recruited 1992-1996 in Granada, Spain (n=7879). Participants answered an extensive interview, underwent physical examination, and donated blood samples. The 141 incident cases of CRC (n=103 colon and n=38 rectum) that occurred until 2018 were matched to 141 controls on age, sex, fasting status, and time since blood draw. An allostatic load index was calculated using a distributional algorithm from 12 neuroendocrine, cardiometabolic, and immune biomarkers.

Results. In a conditional logistic regression, higher allostatic load was associated with higher risk of CRC, with OR=1.26 (95% IC 1.06-1.49) for one-unit increase and OR= 2.75 (1.15-6.55), for Q4 vs. Q1. The allostatic load biomarkers detecting significant differences ($p<.05$) between cases and control included cortisol, DHEA-S, HDL cholesterol, HOMA-IR, albumin, and interleukin-6.

Conclusions. Higher pre-diagnostic allostatic load was associated with higher CRC risk. Allostatic load can help bridge the gap between basic and epidemiological research on stress and CRC, contributing towards personalized prevention strategies.

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Title

Code 126

50 YEARS OF EPIDEMIOLOGY IN THE FRANCHE MARNE-ARDENNES THYROID CANCER REGISTRY

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Theme

Epidemiological clinical use of cancer registry data

Abstract

Background: An increase in the incidence of thyroid cancer has been observed since the 1990s, leading to the notion of overdiagnosis and new recommendations for the management of thyroid nodules (2015).

Objectives: Estimate the impact of these recommendations on the incidence and characteristics of thyroid cancers.

Methods: The Marne-Ardennes thyroid cancer registry exhaustively recorded all cases of histologically documented primary thyroid tumors in patients living in the departments of Marne or Ardennes since 1975. Data were described according to the diagnosis decade (1975-1984, 1985-1994, 1995-2004, 2005-2014, 2015-2024).

Results: 3,605 cases were included over 50 years, with an average of 72 cases per year (min=16; max=151 in 2014). Standardized incidence increased from 5.2 cases/100,000 person-years (PY) in 1975-1984, to 13.7 in 2015-2024, with a peak in 2005-2014 (15.8). Female predominance decreased over time (81.4% women in 1975-1984 vs. 73% in 2015-2024). Average age at diagnosis increased from 50 in 1975-1984 to 53.2 in 2015-2024. Incidental histological findings represented nearly 40% of cases in 2005-2014 but only 25% in 2015-2024. Average size at diagnosis decreased from 29mm in 1975-1984 to 18mm in 2005-2014 and remained stable. Tumors were mainly papillary (58% in 1975-1984; 83% in 2005-2014 and 2015-2024), but incidence trends are similar for all histological types: increase until 2015 then decrease; except for medullary and anaplastic cancers, whose incidence is stable. Survival is excellent with a death rate within one year from diagnosis decreasing from 14% in 1975-1984 to 2% since 2005-2014.

Conclusions: Notion of overdiagnosis and new recommendations for the management of thyroid nodules have led to a decrease in the incidence of thyroid cancers over the last decade. Tumors diagnosed over the last 10 years are less often incidentally discovered; incidence of papillary decresases, but other types (medullary, anasplastic) still increases.

Title

Code 127

DISPARITIES IN ORAL AND PHARYNGEAL CANCER STAGE AT DIAGNOSIS AMONG BLACK AND LATINO POPULATIONS IN FLORIDA

Authors Names

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Theme

Epidemiological clinical use of cancer registry data

Abstract

Objectives: This study investigates the impact of demographic and socioeconomic factors on stage at diagnosis for oral cavity and pharyngeal cancer (OPC) in Florida, where nearly 30% of the population is Spanish speaking, highlighting disparities in early detection.

Methods: We analyzed OPC cases diagnosed between 2005 and 2021 using data from the Florida Cancer Registry. Sociodemographic and clinical factors—including age, gender, race/ethnicity, marital status, OPC site, insurance status, poverty level, and smoking status—were considered. Univariable and multivariable logistic regression examined associations between race/ethnicity and advanced-stage diagnosis.

Results: Among 30,478 OPC patients, odds of advanced-stage diagnosis were similar between Latinos and Whites (aOR: 0.99, 95% CI: 0.89-1.09), but significantly higher among Black patients (aOR: 1.55, 95% CI: 1.39–1.74), current smokers (aOR: 1.34, 95% CI: 1.22–1.46), and residents of high-poverty areas (aOR: 1.24, 95% CI: 1.10–1.40). Medicaid recipients—a state-sponsored insurance program for the most deprived—and uninsured individuals had 1.83 and 1.77 times the odds of late-stage diagnosis compared to those with private insurance. Higher odds were also observed for salivary gland (aOR = 1.6, 95% CI: 1.34–1.90) and pharyngeal cancers (aOR = 1.7, 95% CI: 1.57–1.84) compared to oral cavity cancers. Being married was protective (aOR = 0.78, 95% CI: 0.72–0.85).

Conclusions: Significant disparities in OPC stage at diagnosis persist in Florida, disproportionately affecting Black individuals, those in high-poverty areas, and uninsured or Medicaid patients. These disparities underscore systemic barriers to early detection, including limited healthcare access and delayed medical engagement. Increasing awareness, encouraging timely evaluation of symptoms, expanding screening access, and using telemedicine may reduce diagnostic delays and promote health equity.

Title

Code 131

MAKING CANCER REGISTRY DATA MORE INTEROPERABLE: AN OMOP MAPPING VALIDATION STUDY

Authors Names

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Theme

New methods innovation and AI applications

Abstract

Objectives: The OHDSI Common Data Model (OMOP-CDM) has been developed as an international collaboration to improve interoperability and sharing of medical data. Transforming cancer registry data into the CDM requires extensive mapping of registry data fields (ICD-O, TNM, treatment, vital status) to CDM concepts and running ETL operations. To ensure that CDM-based statistics are reliable and unbiased, we performed a validation against usual registry-based indicators, using breast cancer as a case study.

Methods: We created SQL queries to the ICD-O site ‘C50.x’ (breast) and behaviour ‘3’ (malignant) in the registry data and CDM concepts ID 4112853 (malignant tumor of breast) including descendants and ID 8532 (female gender) in the CDM data. Four queries were tested to ensure that the transformation preserves critical epidemiological indicators: Q1) breast cancer cases by stage over time (N of cases by TNM stage and year, 1990-2021), Q2) breast cancer cases by age and grade (N of cases by 5-year age group and grade, 2000-2021), Q3) the number of the 10 most frequent treatments for breast cancer in 2021, Q4) the number of breast cancer survivors by incidence year, 1974-2021. We ran all queries on the CDM database and checked that ETL process was run correctly.

Results: Minimal discrepancies were observed between ICD-O and CDM queries, confirming high data fidelity. Q1 identified 18,215 ICD-O cases (99.94% of CDM cases, 14 annual stage sums differed by 1-2 cases), Q2 13,598 ICD-O cases (99.96% of CDM cases, 7 annual grades differed by 1-3), Q3 found no difference, and Q4 13,731 ICD-O cases (100.05% of CDM cases, 6 annual numbers differed by 1-2).

Conclusions: Cancer incidence and survival, stratified by clinical factors, can be robustly produced from OMOP-CDM transformed cancer registry data over successive versions of main international cancer coding systems. The validation can be extended to other cancer types assuming that source values are correctly stored in CDM

Title **Code** 132

BREAST CANCER SURVIVAL IN LATINAS AND MOLECULAR SUBTYPES IN FLORIDA

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Theme

Survival

Abstract

Objective: This study investigated racial and ethnic disparities in breast cancer (BC) survival among women in Florida, where approximately 30% of the population is Spanish-speaking. Special attention was given to the four main molecular subtypes defined by hormone receptor (HR+/–; Estrogen/Progesterone) and HER2 status, to understand how tumor biology intersects with sociodemographic factors.

Methods: Data from the Florida Cancer Registry were used to estimate survival among cases diagnosed between 2011 and 2017. Breast cancer-specific survival was assessed using the Kaplan-Meier method and Cox regression, adjusting for age, race/ethnicity, stage at diagnosis, poverty level, insurance status, and tobacco use.

Results: A total of 111,661 women were included, of whom 14.5% were Latina. Black women had the highest prevalence of the aggressive HR–/HER2– (triple-negative) subtype (19.6%), followed by Hispanic (10.5%) and White women (9.0%). Compared to White women, Latina (HR: 1.09; 95% CI: 1.03–1.15) and Black women (HR: 1.46; 95% CI: 1.38–1.54) had significantly higher risks of breast cancer-specific death. Additional elevated risks were observed among the uninsured (HR: 1.49; 95% CI: 1.37–1.63), current smokers (HR: 1.30; 95% CI: 1.23–1.38), and individuals residing in high-poverty areas (HR: 1.30; 95% CI: 1.20–1.40). Those with triple-negative BC had a 3.1-fold (95% CI: 2.9–3.2) higher mortality risk compared to patients with HR+/HER2– tumors.

Conclusion: Significant racial and ethnic disparities in breast cancer survival were observed, particularly among Latina and Black women, who faced a higher burden of aggressive tumor subtypes and worse outcomes. These findings highlight the need to address systemic barriers to care and tailor interventions that account for both social determinants of health and tumor biology. Further research is warranted to explore heterogeneity within Latino subgroups and their unique clinical trajectories.

Title **Code** 134

TUMOUR STAGE AND GEOGRAPHICAL SURVIVAL VARIATION FOR CHILDHOOD CANCER –THE SECOND PHASE OF THE BENCHISTA PROJECT

Authors Names

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Theme

Epidemiological clinical use of cancer registry data

Abstract

Objectives: The BENCHISTA project encouraged population-based cancer registries (CRs) to collect staging data for childhood cancer (CC) according to the international Toronto Stage Guidelines (TG). In its first phase, we observed significant variation in stage distribution across different geographical areas. We also found that differences in 3-year overall survival (OS) could be partially attributed to variations in stage at diagnosis, underscoring the need for further analysis.

Methods: 73 CRs from 27 countries, both within and outside Europe, participated in the first phase of the study. CRs collected TG data at diagnosis for six childhood solid tumours (0-19 years: osteosarcoma, Ewing sarcoma, rhabdomyosarcoma; 0-14 years: Wilms tumour, neuroblastoma, medulloblastoma) diagnosed between 2014-2017 with a minimum of three years of follow-up. In the second phase, we seek to improve data completeness, particularly, optional variables, extend the follow-up to 5 years, increase the number of participating CRs, and test the feasibility of aggregated data from CRs with international data sharing limitations.

Results: Around 20 new CRs have expressed their willingness to participate in the second phase of BENCHISTA, which will expand its coverage. This phase looks to further investigate geographical survival variation focusing on the development of tumour-specific analyses. Non-stage prognostic factors, 5-year OS, and event-free survival will be considered to understand the geographical survival variation in solid paediatric cancers.

Conclusion: BENCHISTA provided the first multinational, population-level comparison of CC survival by TG stage. Our results play a crucial role in healthcare organisation. Expanding participation in this collaborative project is essential for enhancing the understanding of CC survival variation. Continuous cooperation efforts between CRs and clinicians are key to support and develop standardised and sustainable use of TG.

Title **Code** 139

BREAST CANCER IN SERGIPE, BRAZIL: TEMPORAL TRENDS AND SPATIAL DISTRIBUTION ANALYSIS (1996-2022)

Authors Names

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Theme

Epidemiological clinical use of cancer registry data

Abstract

Objectives: The study aimed to analyze the temporal trends and spatial distribution of breast cancer incidence and mortality in Sergipe, Brazil, between 1996 and 2022, highlighting changes across age groups and estimating survival outcomes.

Methods: Data from the Aracaju Cancer Registry and Mortality Information System were analyzed. Age-standardized incidence (1996-2017) and mortality rates (1996-2022) were calculated, using standardization and weights of the Internation Cancer Survival Standards. Trends were assessed using Joinpoint regression to estimate Annual Percent Change (APC) and Average Annual Percent Change (AAPC). Spatial analyses employed Bayesian methods and Moran's Index to evaluate spatial distribution, identifying clusters and hotspots.

Results: The breast cancer incidence rate increased significantly from 56.7 (1996-2005) to 72.5 per 100,000 (2013-2017). Mortality rates also rose significantly from 13.8 (1996-2005) to 26.5 per 100,000 (2018-2022). Significant upward incidence trends were observed in all age groups, notably among women aged 15-39 (APC=2.5%, $p<0.001$) and 50-69 (APC=2.1%, $p<0.001$). Mortality increased sharply post-2009 (APC=7.2%, $p<0.001$). The mortality-to-incidence ratio suggested a decline in five-year survival from 76% (1996-2005) to 64% (2013-2017). Spatial analysis indicated significant geographic variability, with clear clustering of high-incidence and mortality areas, suggesting disparities in healthcare access and effectiveness.

Conclusions: Breast cancer incidence and mortality significantly increased in Sergipe over recent decades, accompanied by declining estimated survival. Spatial disparities underscore the urgent need for targeted public health interventions to enhance screening, early diagnosis, and treatment access, particularly in identified high-risk areas.

Title **Code** 143

TRENDS IN PANCREATIC CANCER INCIDENCE AND HISTOLOGICAL SUBTYPES IN THE REGION OF MURCIA, SPAIN (1983–2018).

Authors Names

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Theme

Epidemiological clinical use of cancer registry data

Abstract

Objectives: Pancreatic cancer (PC) is among the most lethal cancers, with increasing incidence and poor survival worldwide. In addition to overall trends, analyzing histological subtypes dynamics is essential, particularly adenocarcinoma (AC) and infiltrating ductal adenocarcinoma (IDAC), which represent the majority of pancreatic cancer. We examined PC incidence in the Region of Murcia (Spain), including subtype distribution, from 1983 to 2018.

Methods: Descriptive epidemiological study of incidence on data from the Murcia population-based cancer registry. All primary invasive PC cases from 1983 to 2018 were included and classified as pancreatic neuroendocrine tumors (pNETs), non-pNETs, and non-histologically-confirmed tumors. Non-pNETs were further categorized as AC or IDAC. Age-specific and age-standardized incidence rates per 100,000 person-years were calculated, and annual percentage changes (APCs) were estimated using joinpoint regression stratified by sex.

Results: A total of 3819 PC cases were identified. Microscopic verification was performed in 61.4% of all PC patients. Incidence rose from 11.2 to 21.8 in men, and from 7.2 to 15.2 in women. The APC was more pronounced in women aged 15–44 years (APC= 5.2%, 95% CI = 1.5 to 9.0) than in men (APC= 0.5%, 95% CI = -1.5 to 2.5). Among confirmed cases, 93.3% were non-pNETs (APC = 5.6%) and 6.7% were pNETs (APC = 12.6%). While AC remained the predominant subtype, its proportion declined over time, with a relative and absolute increase in IDAC cases, particularly after 2000.

Conclusion: PC incidence increased in Murcia Region, especially among young women and pNETs patients. The rise in IDAC cases highlights the importance of considering histological subtypes in surveillance data. These findings emphasize the need for prevention strategies targeting high-risk groups, especially young women and reinforce the relevance of long-term cancer trend analysis.

Title **Code** 146

EPIDEMIOLOGY OF ADOLESCENTS AND YOUNG ADULTS WITH CANCER IN COMUNITAT VALENCIANA, 2007-2021

Authors Names

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Theme

Age and cancer

Abstract

Objectives: The cancer profile in adolescents and young adults (AYAs, 15–39 years) differs from that of children and older adults. Main objectives: 1. To analyse the incidence, distribution, and mortality of the most common cancer types in AYAs in the Comunitat Valenciana (CV) during the period 2007–2021; 2. To evaluate temporal trends in cancer incidence in AYAs.

Methods: A retrospective review of cancer cases diagnosed between 2007 and 2021 was conducted using data from the Childhood and Adolescent Tumour Registry and the Cancer Information System of CV. All malignant, benign, and uncertain CNS cases coded according to ICD-3 were included. Age-Standardised Rate (ASR) incidence and mortality rates per 100,000 inhabitants were calculated by sex, tumour group, and age group.

Results: During the period 2007–2021, 14,773 cases were diagnosed (women: 60%, ASR: 75; men: 40%, ASR: 47). The most common tumour in women was breast (21%, ASR: 26), followed by thyroid (11%, ASR: 9) and lymphoma (10%, ASR: 7). In men, the most common was testicular (24%, ASR: 11), followed by lymphoma (17%, ASR: 8) and brain/CNS (7%, ASR: 3). Tumour frequency progressively increases with age, peaking in the 35–39 age group, with an ASR of 109. Regarding morphology, carcinomas dominate in breast (74% of cases), thyroid (65%), and uterus (67%), while sarcomas are more frequent in soft tissue (54%) and bone (59%). The incidence rate has increased when comparing the cohorts 2007–2015 and 2016–2021, rising from an ASR of 60 (CI: 59–61) to an ASR of 62 (CI: 61–63). A total of 2,085 deaths were recorded (women: 51%, ASR: 9; men: 49%, ASR: 8).

Conclusion: Cancer incidence increases with age. The ASR in AYAs is higher in women due to the impact of breast and uterine cancer. However, during childhood and older adults, incidence is higher in men. Young women's tumour types align with those in adult women (breast), unlike young men, whose tumour types resemble those in childhood (lymphomas and CNS)

Title **Code** 148

CERVICAL CANCER (INVASIVE AND IN SITU/CIN3) INCIDENCE TRENDS IN THE LAST TWO DECADES IN TARRAGONA, SPAIN

Authors Names

Marià Carulla (1); Araceli Jiménez (1); Sheila García (1); Laia Llauradó (1); Lydia Díaz (1); Sihame Bouakka (1); Francina Saladié (1);Alberto Ameijide (1); Xavier Collado (1); Jaume Galceran (1)

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1. Cancer Epidemiology and Prevention Service, Hospital Universitari Sant Joan de Reus, IISPV, Reus, Spain

Theme

Screening

Abstract

Objectives: In 2008, vaccination against human papilloma virus (HPV) was introduced in Catalonia, targeting 11-year-old schoolgirls. The extensive information campaign on vaccination included the recommendations on the cervical cancer opportunistic program, active since 1990's. Objectives: to assess the incidence trends of invasive and in situ/CIN3 cervical cancer during the last two decades in Tarragona, Catalonia, Spain

Methods: Invasive (ICD10 C53) and in situ/CIN3 (ICD10 D06) cervical cases of the period 2000-2019 were extracted from the Tarragona Cancer Registry. Age-standardized incidence rates (ASIR) -European population- were estimated. ASIR trend analysis with average annual percent change (AAPC) and joinpoint analysis were performed by C53 and D06, age groups (<65 years, 65 years+) and histology (squamous carcinomas and adenocarcinomas)

Results: 564 C53 and 1939 D06 cases. C53: 54.4±16.2 years, 55.1% < 65 years. ASIR 2000-2019 8.5- 5.9, -3.1% AAPC (significant*). <65 years: ASIR 6.9 -5.0, -3.5% AAPC*. 65+ years: ASIR 11.7-7.7, -2.7% AAPC*. Squamous carcinoma: ASIR 7.9-4.9, -3.4% AAPC*. Adenocarcinoma: ASIR 0.6-0.7, -2.1% AAPC. D06: 39.0 ±32.6 years, 92.6% < 65 years. ASIR 17.1-21.7, +1.2% AAPC*. <65 years: ASIR 20.2-27.4, +1.1% AAPC*. 65+ years: ASIR 10.5-9.7, +1.5% AAPC. Squamous carcinoma: ASIR 17.1-21.4, +1.1% AAPC*. Adenocarcinoma: ASIR 0.0- 0.3, +4.6% AAPC. Joinpoint analysis showed no change points during the period, but a marked increase in D06 cases was observed in 2008-2009 (ASIR 37.6) with a subsequent decrease

Conclusions: During 2000-2019 a decrease in invasive cervical cancer cases and an increase in in situ/CIN3 cases were observed. Although it is too early to assess the effect of HPV vaccination on the period, it appears that 2008-2009 campaign could encourage participation in the opportunistic screening program, leading to an increase in situ/CIN3 cases. Opportunistic screening programs should be widely disseminated among the population

Title **Code** 149

SEX DIFFERENCES IN THE BASIS OF DIAGNOSIS OF PANCREATIC CANCER IN THE PROVINCE OF TARRAGONA, SPAIN (2009-2018)

Authors Names

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Theme

Social inequalities and cancer

Abstract

Objectives: In the quality check of the incidence data of the Tarragona Cancer Registry (TCR), differences were observed in the percentage of microscopic verification (MV) according to sex in some cancers, such as pancreatic cancer. According to Cancer Incidence in Five Continents, women are less diagnosed with MV in pancreatic cancer in many cancer registries. The present study aimed to assess sex differences in the method used to diagnose pancreatic cancer.

Methods: Pancreatic cancer cases of the period 2009-2018 were extracted from TCR. Sex, age, TNM stage at diagnosis and basis of diagnosis (IARC/IACR recommendations) were collected. Basis of diagnosis was grouped in death certificate only (DCO), non-microscopic (clinical, clinical investigation and specific tumor markers), MV (cytology, histology of a metastasis, histology of a primary tumor) and unknown method. Comparison analysis was performed using χ^2 tests. A bivariate regression analysis was performed for age, sex and basis of diagnosis.

Results: 531 women and 684 men were diagnosed with pancreatic cancer during the period of study. No differences in the stage at diagnosis were found between both sexes. Women were diagnosed at a slightly older age than men (>65 years: 68.7% of women and 53.2% of men, $p = 0.001$). Regarding basis of diagnosis, 69.7% of men were diagnosed with MV, while 58.4% of women were diagnosed with these methods ($p=0.001$). When disaggregating basis of diagnosis, it was observed that the diagnostic method with the greatest differences between sexes was histology of metastasis (17.5% of men vs. 8.9% of women, $p=0.001$). Bivariate regression analysis confirmed that cancers in younger patients and men were more likely to be diagnosed with MV.

Conclusions: Differences in the method of diagnosis of pancreatic cancer according to sex and age have been demonstrated. Further studies are needed to explore in depth possible inequalities in the diagnosis of pancreatic cancer between sexes.

Title **Code** 150

TRIPLE NEGATIVE BREAST CANCER SURVIVAL AND COMPLETE RESPONSE PREDICTORS. POPULATION-BASED DATA FROM TARRAGONA, SPAIN

Authors Names

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Theme

Survival

Abstract

Objectives: Triple negative breast cancer (TNBC) is an aggressive subtype of breast cancer that may benefit from neoadjuvant chemotherapy (NAC). Pathological complete response (pCR) to NAC is an important predictor of improved survival. The aim of the present study was to evaluate TNBC survival according to NAC and PCR as well as the predictive factors of pCR.

Methods: Incident TNBC cases of the period 2012-2019 were extracted from Tarragona Cancer Registry, as well as their treatment-related variables. The 5-year relative survival (5y-RS) was calculated and results were stratified according to TNM stage at diagnosis, age group (<50 years, 50+ years), NAC and pCR. Comparison of proportions ($\chi 2$) and multiple regression analysis for pCR by age group and TNM stage were performed.

Results: A total of 305 cases were included. Mean age at diagnosis: 59.9±15.3 years (38.6% <50 years). TNM stage II-III (59.7%). NAC 49.5% of cases, with 30.4% of pCR. Comparison of proportions and multiple regression analysis showed no differences in PCR by age group or TNM stage. The overall 5y-RS was 77.2%. By age group: <50 years (88.6%) and 50+ years (72.6%). By TNM stage: I (94.2%), II (90.9%), III (51.1%) and IV (16.6%). By NAC: received (79.1%), not received (81.2%). By PCR: positive (90.1%), negative (79.1%).

Conclusions: Although the TNBC cases that received NAC showed a similar survival to those that did not receive NAC, cases with pCR showed a higher survival (>90%), compared to cases that did not receive pCR. Regarding clinical variables for prediction of pCR, in the present study no relationship was found between age and stage at diagnosis with pCR.
Regarding the clinical variables for predicting pCR, in the present study, neither age nor stage at diagnosis was found to be related to pCR'

Title

Code 152

ARE OLDER WOMEN WITH EARLY-STAGE ENDOMETRIAL CANCER UNDERTREATED AND MORE LIKELY TO DIE FROM THEIR CANCER?

Authors Names

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Theme

Age and cancer

Abstract

Context and objectives: Endometrial cancer (EC) is the most prevalent gynecological malignancy in developed countries, predominantly affecting older women, which raises concerns about potential under-treatment. This study aimed to describe treatment patterns and assess net survival (NS) in older women with early-stage EC.

Methods: This French retrospective observational study used data of the Côte d’Or gynecological cancer registry. Patients diagnosed with FIGO I-II EC between 1998 and 2018 were included and stratified by age (<70 vs. ≥70 years) and FIGO stages.

Results: A total of 880 patients were included: 486 under 70 years and 394 aged 70 or older. Older patients had more advanced FIGO stages ($p = 0.007$) and higher cancer risk classifications ($p < 0.001$). A lower rate of low-grade endometrioid EC was observed in older women (88.6% vs. 92.9%, $p = 0.04$). Treatment patterns did not differ significantly by age, with most patients receiving surgery and adjuvant therapies. However, older women with FIGO IA EC were more likely to receive vaginal brachytherapy combined with external beam radiotherapy (36.6% vs. 19.9%, $p = 0.008$). The 5-year NS rate was 93.7% for patients <70 years and 83.0% for those ≥70 years ($p = 0.40$).

Discussion: Over a 20-year period, older women with EC were not undertreated compared to younger women, and 5-year NS did not differ significantly between the groups, likely due to low statistical power. However, the risk classification approach and the potential role of novel therapies, such as immunotherapy, warrant further investigation.

Title **Code** 153

SURVIVAL OF COLON CANCER IN A POPULATION-BASED COHORT STUDY: A COMPREHENSIVE ANALYSIS OF LOCATION OF THE PRIMARY TUMOR

Authors Names

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Theme

Survival

Abstract

Objectives: Disparities in survival between left- versus right-sided colon cancer (CC) have been reported. We studied the role of sidedness on survival of CC across tumor biomarkers subgroups in a population-based cohort established using the Geneva Cancer Registry database.

Methods: Our study included 3,503 CC cases diagnosed between 1985 and 2013. Right-sided CC (ICD-O codes C18.0, C18.2-18.4) and left-sided CC (ICD-O codes C18.5-18.7) were compared. Tumor markers including microsatellite status, BRAF mutation and iCMS subtype were categorized as follows: MSI versus MSS, BRAF mutant versus BRAF wild-type, iCMS2 versus iCMS3. We used flexible hazard model to evaluate the association of survival with sidedness according to subgroups of biomarkers. Analysis were adjusted for patient, tumor and treatment characteristics, with further adjustment for MSI status, BRAF mutation status and iCMS subtypes, except for stratification factors.

Results: In a multivariate model, patients with a left-sided tumor had a 25% reduction in 5-year mortality compared with right-sided tumors (excess hazard ratio [eHR]: 0.75, 95% confidence interval [CI]: 0.63-0.89, p=0.001). Among the subgroup of 2,438 cases with biomarker results, association of survival with sidedness was studied according to strata of biomarkers. The association with sidedness remained statistically significant among MSS tumors (eHR, 0.75 for left-sided versus right-sided; 95% CI, 0.61–0.95 p=0.007). The association with sidedness also remained statistically significant among subgroups of tumors with BRAF wild-type (eHR, 0.70 for left-sided versus right-sided; 95% CI, 0.57–0.87 p=0.001) and iCMS2 subtype tumors (eHR, 0.63 for left-sided versus right-sided; 95% CI, 0.49–0.81), whereas no association was observed among iCMS3.

Conclusion: This study confirmed the better prognosis of left-sided CC versus right-sided CC among microsatellite stable tumors, tumors with BRAF wild-type and iCMS2 tumors.

Title **Code** 154

COLORECTAL CANCER SCREENING PROGRAMME AS A DATA SOURCE IN CANCER SURVEILLANCE SYSTEM IN THE COMUNITAT VALENCIANA

Authors Names

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Theme

Strategies to enhance timeliness on cancer registries

Abstract

Cancer Information System of the Valencian Community (SIC-CV) enables cancer surveillance in this region through semi-automated processes for capturing information from various sources (primarily pathological anatomy (PA) and hospital discharges (HD)) as well as for case consolidation and validation. Colorectal Cancer Screening Programme (CRCSP) plays a key role in disease prevention while also gathering valuable data for cancer surveillance. All its cases are manually reviewed by qualified technical staff. To improve the completeness and integrity of colorectal tumor data in SIC-CV, the integration of CRCSP as an information source is being evaluated. We conducted a retrospective descriptive study analyzing the variability between invasive colorectal cancer (CRC) cases detected by CRCSP and those in SIC-CV from 2007 to 2021, focusing on key variables: year of incidence, topography, and morphology. PDPCCR registered 4,543 invasive CRC cases; 3,825 (84%) were in SIC-CV, while 718 (16%) were not. Nearly half (48%) of the missing cases correspond to 2018-2021, likely reflecting delays in cancer surveillance data collection. Their inclusion would result in an average annual incidence increase of just 1%, with no significant impact on standardized incidence rates. Among included cases, temporal distribution follows incidence trends. However, 52% show tumor site discrepancies, with 91% coded under nonspecific codes (C18.9) in SIC-CV despite available AP/AH data. Similarly, 36% have morphology variations, with 89% under nonspecific morphology (M80003) due to the absence of AP as a source. Integrating PDPCCR into SIC-CV enhances data completeness (recovering recent cases) and integrity (refining tumor site and morphology). The high quality of PDPCCR data improves SIC-CV's automatic validation and allows adding key variables like tumor stage, treatment, and biomarkers.

Title **Code** 155

CHARACTERISTICS AT DIAGNOSIS AND RECURRENCE OF BONE TUMORS IN TARRAGONA PROVINCE, SPAIN

Authors Names

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Theme

Epidemiological clinical use of cancer registry data

Abstract

Objectives: The present study aimed to describe the clinical characteristics of bone tumors at diagnosis and at the recurrence in a long follow-up period in the Tarragona province, Spain.

Methods: Bone tumors cases (ICD10 C40-C41) from Tarragona Cancer Registry, diagnosis period 1990-2017. Sociodemographic characteristics, tumor site, histology and local recurrence or distant metastasis during the follow-up were collected. Comparison χ2 tests for local recurrence/metastasis by sex, age group (0-14 years, 15+ years) and histology group were performed.

Results: 158 cases included. Mean follow-up 17,9 years. 54.4% men, 40.4±24.4 years, 15.8% 0-14 years. 34.2% C40.2 (long bones of lower limb), 19.6% C41.4 (pelvic bones, sacrum and coccyx) and 10.1% C41.0 (bones of skull/face). 31.6% osteosarcoma, 20.9% Ewing sarcoma, 19.6% chondrosarcoma, 18.9% other sarcomas and 8.9% other malignant neoplasms. 22.8% cases presented local recurrence and 26.6% metastasis during the follow-up. Median time to local recurrence was 605 days and 651 days for metastasis. Local recurrence: Women showed higher rates (35.8% vs 18.3%, p=0.043). Adult patients (15+) presented non-significant# higher rates, (27.4% vs 20.0%, p=0.564). C41.2 cases (vertebral column) presented higher rates than other sites, 54.6% (p=0.310)#. Other sarcomas showed the higher rates, 40.7% (p=0.452)#. Metastasis: Women presented higher rates (32.8% vs 27.5%, p=0.689)#. Adult patients showed higher rates (30.8% vs 25.0%, p=0.755)#. C41.0 cases (skull and face) presented higher rates than other sites, 54.6% (p=0.487)#. Osteosarcomas showed the higher rates (37.5%) (p=0.554)#.

Conclusions: In Tarragona, approximately one in four bone tumors presented local recurrence and/or distant metastasis during follow-up. Women showed a higher rate of local recurrence than men, with no differences by age or histology. Further studies could assess the characteristics of patient’s bone tumors to predict local recurrence or metastasis.

Title

Code 156

VARIATION IN CANCER STAGE AT DIAGNOSIS BY ONSET AND DURATION OF PRE-EXISTING PAINFUL CONDITIONS AND ANXIETY/DEPRESSION

Authors Names

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Theme

Epidemiological clinical use of cancer registry data

Abstract

Objective: Pre-existing chronic conditions may delay or expedite cancer diagnosis. This study aimed to examine variations in lung and colon cancer stage at diagnosis based on duration and type of common chronic conditions.

Methods: Lung and colon cancers diagnosed 2012-2018 were identified from England national cancer registration. Pre-existing physical and mental-health conditions were identified from linked primary care records and categorised as recent-onset (<12 months pre-cancer), historic (12-72 months pre-cancer), or persistent (<12 and 12-72 months pre-cancer). Using multivariable logistic regression, we explored associations between the most prevalent mental health and physical conditions – Anxiety/Depression and Painful Conditions, respectively - and cancer stage at diagnosis.

Results: Among 6,828 lung and 4,194 colon cancers, 39% and 30% patients, respectively, had Painful Conditions (27% and 14% recent-onset, 3% and 6% historic, 9% and 10% persistent, respectively). Approximately 26% of lung and 21% of colon cancer patients had Anxiety/Depression (9% and 4% recent-onset, 9% and 9% historic, 8% and 8% persistent). Patients with recent-onset Painful Conditions (versus without) had increased odds of advanced stage colon cancer (adjusted OR (aOR)=2.24; 95%CI: 1.81, 2.77) or lung cancer (aOR=1.68; 95%CI: 1.44, 1.96). Conversely, persistent Painful Conditions were associated with lower odds of advanced stage lung cancer (aOR: 0.36; 95%CI: 0.29, 0.44), but not with colon cancer stage at diagnosis (aOR: 0.81; 0.64, 1.03). Similar patterns were observed for patients with Anxiety/Depression.

Conclusions: Persistent chronic conditions may offer opportunities for early cancer diagnosis. Recent-onset conditions may lead to delays, possibly providing alternative explanations for cancer symptoms or presenting competing demands. Further research is needed to elucidate underlying mechanisms.

Title

Code 157

IMPACT OF THE COVID-19 PANDEMIC ON THE STAGE AT DIAGNOSIS OF CUTANEOUS MELANOMA IN FRANCE

Authors Names

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Theme

Epidemiological clinical use of cancer registry data

Abstract

Objective: Our aim was to measure the impact of the health crisis associated with the Covid-19 pandemic on the delay in diagnosis of cutaneous melanoma by comparing the distribution of stages at diagnosis between 2018, 2019 and 2020 (year of the Covid crisis).

Methods: This population-based study included 15 French cancer registries. All cases of incident invasive cutaneous melanoma diagnosed between 2018 and 2020 in people aged 15 years and older were included.
We used the Breslow index (BI, maximum lesion thickness in millimetres (mm)) as a proxy for stage. BI was divided in 4 groups: ≤ 1,]1 – 2],]2 – 4], > 4 mm.
Monthly numbers of melanoma diagnoses were described. World standardised truncated incidence rates by year were calculated. The distribution of the BI was compared according to the year of diagnosis (Chi-square test).

Results: We observed a drop in the number of diagnoses during the 2020-lockdown periods, with a catch-up in the following months. The incidence of melanoma was stable between 2020 and 2019 (15.7 per 100,000 person-years) but was lower than in 2018 (16.9 per 100,000 person-years). The overall stability of incidence between 2019 and 2020 reflected modest but opposite trends according to sex, with a fall in men and an increase in women. The proportion of melanomas with a thickness of 1 mm or less decreased significantly and continuously between 2018, 2019 and 2020 (65.6%, 62.4% and 60.1%, $p<0.001$), whereas the proportion of melanomas over 2 mm, which have a poorer prognosis, increased (21.1%, 23.0% and 25.8%).

Conclusions: Between 2018 and 2020, there has been a steady increase in the incidence of melanomas over 2 mm in thickness. It is difficult to distinguish a possible effect of Covid-19 in 2020 from the increasing trend already observed between 2018 and 2019. There is a need to investigate stage changes beyond 2020 and the potential impact of Covid-19 on patient survival.

Title

Code 158

SURVIVAL OF ADULT PATIENTS IN THE PROVINCE OF SALAMANCA (CASTILLA Y LEÓN, SPAIN), 2011-2015

Authors Names

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Theme

Survival

Abstract

Objectives: Cancer patient survival is an essential indicator for assessing the effectiveness of healthcare systems in controlling this disease. The aim of this study is to estimate the five-year survival globally and for the main cancer groups in adults by sex (2011-2015 cohort) in the province of Salamanca. (Autonomous Community of Castilla y León in Spain), and to compare it with survival estimates for Spain.

Methods: Patients aged over 15 years with cancer in the province of Salamanca beween 2011 - 2015 were selected from the Castilla y León Population Cancer Registry, with follow-up for vital status until 2021. Observed survival (OS), net survival (NS) using the Pohar-Perme estimator, and age-standardized net survival (ASNS) at five years with their 95% Confidence Intervals (95% CI) were estimated, both globally and for the five most frequent cancer groups in each sex (lung, colon, prostate, rectum, and bladder in men; breast, colon, uterine body, rectum, and non-Hodgkin lymphoma in women).

Results: A total of 11,306 cases were analyzed (59.5% men and 40.5% women). The global ASNS was 59.7% (95% CI: 56.8-62.8) for men and 65.0% (95% CI: 62.0-68.3) for women. Among the five most frequent cancer groups, the highest ASNS in men was for prostate cancer (92.2%; 95% CI: 88.1-96.8) and the lowest for lung cancer (11.7%; 95% CI: 7.9-17.8). In women, the highest ASNS was for breast cancer (87.8%; 95% CI: 83.1-92.9) and the lowest for rectal cancer (64.4%; 95% CI: 51.0-82.8). Comparisons with national estimates revealed no statistically significant differences in overall ASNS or for any of the cancer groups.

Conclusions: Overall survival was higher in women than in men and vary by cancer group. Cancer survival rates in Salamanca were similar to national estimates, suggesting a comparable healthcare context in terms of primary prevention, diagnosis, and treatment. Population cancer registries are essential for monitoring survival and evaluating regional cancer strategies.

Title **Code** 159

PATTERNS OF HEMATOLOGICAL MALIGNANCIES IN LUXEMBOURG AND IN CÔTE D'OR, FRANCE: FIRST INSIGHTS FROM THE RELIANCE PROJECT

Authors Names

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Theme

Epidemiological clinical use of cancer registry data

Abstract

Objectives: Hematological malignancies (HM) represent a diverse group of cancers characterized by heterogeneous clinical presentations and complex underlying genetic and molecular mechanisms. We aimed at describing the incidence of HM in the first year of collection of the Luxembourg's National Cancer Registry (RNC) and compare it with a HM registry (RHEMCO) covering a population of the same size in a geographically close area (Côte d'Or, France).

Methods: HM cases were recorded using the IARC and ENCR recommendations, classified using ICD-O-3.2 and categorized into 11 morphological subtypes. Only malignant cases were included («/3» behavior). Socio-demographic characteristics and European age-standardized incidence rates (ESR) were estimated for the incidence year 2019 in Luxembourg and for the incidence years 2017 to 2019 in the Côte d'Or area.

Results: In 2019, 351 new HM cases were collected at the RNC, of which 330 (94%) were residents of Luxembourg, with an ESR of 63.1 per 100,000 inhabitants. Non-Hodgkin's B-cell lymphomas (NHL-B) account for nearly 30% of cases, followed by multiple myeloma (MM) and myeloproliferative syndromes (MPS, including mast cell sarcoma), each representing more than 10% of cases. Other subtypes represent less than 10%. The median age for Acute Lymphoblastic Leukaemia and Hodgkin's lymphoma is 13 (IQR 4-35) and 38 (IQR 26-56) years, respectively. All other HM groups have a median age of over 60 years, making these less common in young people. The incidence of most hematologic malignancies in Luxembourg aligns with Côte d'Or, reflecting effective registration.

Conclusion: This study shows that HM represent a significant public health burden in Luxembourg, particularly among the elderly. The comparison with the RHEMCO allows us to be confident in the collection process and will serve as a baseline for future HM surveillance in Luxembourg. Improved reporting and international collaboration are essential for understanding rare HM.

Title **Code** 161

SURVIVAL FOR COLON ADENOCARCINOMA IN A HOSPITAL-BASED CANCER REGISTRY IN CALI, COLOMBIA

Authors Names

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Theme

Survival

Abstract

Objective: To describe the overall survival for colon adenocarcinoma (CA) using a hospital-based cancer registry database.

Methods: A retrospective cohort study was conducted using data from patients diagnosed with CA at Fundación Valle del Lili (FVL) between 2015 and 2022, obtained from the hospital's cancer registry. All CA types were included, while patients under 18 years of age, those with multiple primary tumors, or in situ clinical stage were excluded. Additional data were collected directly from clinical records, pathology reports, and the clinical laboratory. Cases were classified as analytical or non-analytical. All cases were staged using the AJCC 8th edition. Survival analysis was conducted using the Kaplan-Meier method.

Results: A total of 1,744 patients were identified, of whom 1,643 met the eligibility criteria (237 cases were excluded). The median age was 64 years (IQR: 54–73 years), and 55.1% were female. Analytical cases accounted for 48.5% (n=796). Among patients, 90.1% were treated in the private health insurance system, while 9.9% were treated in the public health insurance system. Clinical staging showed that 11.3% of cases were localized, 55.5% were locally advanced, 20.5% were metastatic, and 12.7% had an unknown stage. Tumor location was predominantly in the left colon (54.7%) compared with the right colon (38.5%), while 6.9% did not have a specific location identified. The liver was the most common site of metastasis (10.5%). The five-year observed survival was 65.6% (95% CI: 62.8–68.2), regardless of sex, health insurance system, or tumor location. The risk of death was associated with clinical stage—locally advanced (HR: 1.56, 95% CI: 1.05–2.37) or metastatic (HR: 11.18, 95% CI: 7.44–16.80)—and age ≥70 years (HR: 2.36, 95% CI: 1.80–3.08).

Conclusions: Patients with CA are often diagnosed at advanced clinical stages, emphasizing the need to implement screening programs to detect the disease at earlier stages in our context.

Title **Code** 162

KEY EPIDEMIOLOGICAL INDICATORS OF CUTANEOUS SQUAMOUS CELL CARCINOMA FROM POPULATION-BASED CANCER REGISTRIES IN SPAIN

Authors Names

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Theme

Epidemiological clinical use of cancer registry data

Abstract

Objectives: Cutaneous squamous cell carcinoma (cSCC) constitutes a serious public health problem, as it is the second most frequent skin cancer. Few studies have assessed epidemiological indicators of cSCC in Southern Europe. The objectives of this study were to analyze incidence and to estimate survival of cSCC cases from all Spanish population-based cancer registries that register this cancer.

Methods: Retrospective descriptive study of all incident first cSCC cases (ICD-O-3 code C44) registered in Girona, Granada, Navarra and Tarragona between 1994 and 2017. Crude and age-standardized (ASR-E) incidence rates were calculated. Incidence trends were analyzed using joinpoint regression. Observed survival was estimated using the Kaplain-Meier method and relative survival was estimated using the Ederer II method. Analyses were performed using Stata version 17, R version 4.3.3 and Joinpoint version 4.9.

Results: A total of 22,343 cSCC cases (61.5% males) were registered, accounting for 20.3% of all skin cancers. The most common anatomical site was the skin of face, scalp and neck (59.1%) and incidence increased exponentially with age. The annual ASR-E per 100,000 inhabitants were 25.0 in females and 56.6 in males. Besides, incidence exhibited some geographical variation, ranging between 34.5 cases in Granada and 44.4 in Tarragona. Both sexes showed a significant upward incidence trend, with an annual percent change of +2.0% (95%CI=+1.6%,+2.4%). 5-year relative survival was 93.5% (95%CI=92.5%,94.6%), slightly higher in females, and did not seem to increase over time.

Conclusions: This study provides an updated description of cSCC incidence and survival, key indicators to frame the scenario of this cancer in Spain. Overall, our results are consistent with previous studies from developed countries in the European context, showing a rising trend in incidence alongside high survival rates. Further research is warranted to elucidate the causes underlying these findings.

Title **Code** 163

IS CANCER INCREASING IN YOUNG ADULTS IN SPAIN? INCIDENCE TRENDS FOR THE PERIOD 1993-2018.

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Theme

Age and cancer

Abstract

Objectives: Recent data suggest that the incidence of several types of cancer is increasing in adults under 50 years of age. We analysed the trends in cancer incidence in young adults in Spain for the period 1993-2018

Methods: We analysed new incident cases in adults between 20-49 years old diagnosed in the period 1993-2018, using data from the 15 population-based cancer registries of the Spanish Network of Cancer Registries. For each combination of sex and anatomical site, we calculated truncated age-standardised rates per 100,000 persons using the European new standard population (TASR-E), and used joinpoint regression to analyse TASR-E trends and compute Annual Percent Change (APC)

Results: 153,599 new cases (58% in women) were diagnosed in young adults between 1993 and 2018. The most common sites were breast (N = 37,820 cases) and thyroid (N = 7,022) in women, and lung (N = 7,425) and testicular cancer (N = 5,306) in men. For all cancers (except non-melanoma skin cancer), incidence decreased in young men from 120.9 in 1993 to 94.3 in 2018 (APC = -1.4%; 95% CI: -1.5%; -1.2%), and increased in young women from 134.3 in 1993 to 166.9 in 2018 (APC = +0.7%; 95% CI: +0.5%; +0.9%). Breast cancer increased in young women, with an APC of +1.0%, whereas colon and rectum cancers remained stable in women (APC = 0.0% and +0.1%, respectively) and decreased slightly in men (APC = -0.7% and -0.4%, respectively).

Conclusions: Overall cancer incidence in Spain increased slightly in young women, and decreased in young men, with pronounced differences by anatomical site. Data until 2018 do not reflect the worrying increasing trends in breast and colorectal cancer observed in other developed countries. Understanding these patterns is crucial for developing targeted prevention and early detection strategies to address the existing cancer burden in younger populations.
Funding: Subprogram VICA CIBERESP, SIEC, Proyecto intramural de fortalecimiento del Área de Oncología de ibs.GRANADA

Title **Code** 164

MAPPING THE NATIONAL HEALTH INFORMATION SYSTEMS BY THE CANCER REGISTRY PERSPECTIVE: EARLY FINDINGS FROM THE SURVEY

Authors Names

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Theme

Social inequalities and cancer

Abstract

Objectives: Within the framework of the Joint Action PreventNCDs, one of the tasks in WP8 (Task 8.4) aims to monitor the burden of cancer care on National Health Service (NHS) in terms of access to healthcare services and related costs. To this purpose, a preliminary step consists in mapping the healthcare data sources available in the NHS and accessible by population-based Cancer Registries through the administration of a questionnaire to participants. The current work reports on the development, feasibility and early findings of this survey

Methods: A questionnaire was developed to map national health information systems, identify cost components of healthcare expenditure, and understand national regulations on personal data management, addressing opportunities and constraints for collaborative research projects. A pilot phase was planned involving four countries: Norway, Belgium, Spain and Italy.

Results: To date, the pilot phase has been completed and a final version of the questionnaire is ready to be circulated to the other European countries involved in Task 8.4. Preliminary findings highlight that the method of recording service access is influenced by the healthcare system and funding, classification systems are not always convertible to the international standard and interoperability with data on screening programs and socioeconomic data is limited.

Conclusions: The results from the questionnaire contribute to assess the feasibility of monitoring access to the health care services and related costs in Europe. Moreover, the availability, accessibility and interoperability of healthcare data sources represent a preliminary step needed to develop pilot studies planned within the Task 8.4, focusing on costs estimation and care pathways for cancer patients. Additionally, the questionnaire will provide a reference framework for interpreting and comparing results, potentially enabling further investigations on healthcare access inequalities.

Title **Code** 165

MAIN HEMATOLOGICAL MALIGNANCIES IN ADOLESCENT AND YOUNG ADULT AND THEIR SURVIVAL IN A FRENCH DEPARTMENT

Authors Names

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Theme

Age and cancer

Abstract

Objectives: We pay a peculiar attention to adolescent and young adults (AYA) because of their specificities and we report here epidemiological data on hematological malignancies from 40 years of registration i.e. acute lymphoblastic and myeloblastic leukemias (ALL, AML), Diffuse large B cell lymphoma (DLBCL) and Hodgkin lymphoma (HL), in the AYA population.

Methods: Cases diagnosed in the population of 15 to 39 y-o of the department of Côte d'Or, France, between 01/01/1980 and 31/12/2019 were coded according to ICD-O-3 classification. We described each entity by age at diagnosis, sex-ratio, European population standardized incidence, overall and net survival. We used Poisson regression to assess the mean variation of the incidence rate, Kaplan Meier method and Cox model to estimate overall survival (OS) and the Pohar Perme estimator and flexible parametric model on excess mortality to estimate net survival (NS) according to age at diagnosis, gender and 10 years-period of diagnostic and at different time points (5, 10, 20 years).

Results: Incidence rate was 0.2/100 000inh/year in ALL, 0.4 in AML, 0.5 in DLBCL and 1.4 in HL. The sex ratio was 0.74 in AML, 1.18 in HL, 1.39 in DLBCL and 2.69 in ALL. Median age of occurrence was 26 y-o in ALL and HL, 29 in AML and 31 in DLBCL. The incidence remained stable since 1980. Survival was better in younger patients in all entities. It was better in women than in men at 5, 10 and 20 years in AML, HL and DLBCL but it's opposite in ALL. OS were close to NS that were respectively at 10 and 20 years, 91.6% (CI: 88.1-95.0) and 87.4% (CI: 82.7-92.3) in HL, 79.2% (CI: 71.5-87.8) and 77.6% (CI: 68.8-87.6) in DLBCL; 51.7% (CI:39.5-67.7) in ALL and 46.5% (CI: 37.8-58.1) and 42.4% (CI: 32.8-54.7) in AML. An increase of survival was found in all entities, particularly important in ALL(+48% 10-years NS) and HL(+14% 10-years NS).

Conclusion: These data emphasise the scientific attention needed to AML in this population.

Title **Code** 166

EPIDEMIOLOGICAL DATA ON RAREST HEMATOLOGICAL MALIGNANCIES IN A FRENCH AREA AFTER 40 YEARS OF REGISTRATION

Authors Names

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Theme

Epidemiological clinical use of cancer registry data

Abstract

Introduction: Reliable data on the rarer subtypes of hematological malignancies (incidence < 2/100,000/year) are difficult to obtain. Thanks to 40 years registration at the population level that allows us to provide data on these subtypes.

Methods: Cases diagnosed in the population of the department of Côte d'Or, France, were registered between 01/01/1980 and 31/12/2019. They were coded according to ICD-O-3 classification. We described each entity by age at diagnosis, sex-ratio, European population standardized incidence, overall and net survival. We used Poisson regression to assess the mean variation of the incidence rate, Kaplan Meier method and Cox model to estimate overall survival (OS) and the Pohar Perme estimator and flexible parametric model on excess mortality to estimate net survival (NS) according to age at diagnosis, gender and 10 years-period of diagnostic and at different time points (5, 10, 20 years).

Results: The rarest entities are, in ascending order of incidence, Burkitt's Lymphoma (BL) (0.1), Hairy Cell Leukaemia (HCL) (0.5), Primary Myelofibrosis (PMF) (0.8), Mantle Cell Lymphoma (MCL) (1.1), Chronic Myeloid Leukaemia (CML) (1.5), Polycythemia Vera (PV) (1.6) and Chronic Myelomonocytic Leukaemia (CMML) (1.9). The age of onset is close to 60 in LB, HCL and CML, whereas it is 10 years older in LM, PV and PMF and 20 years older in CMML. The sex ratio varied from 1.15 in PV to 3.17 in HCL. Survival was always worse in men than in women, except in MCL. Survival is also consistently poorer in patients older than the median age of onset. NS at 10 years ranged from 18% in PMF to 80% in HCL. Survival has improved particularly since the 1980s in LB, HCL, CML and PV; it has remained very poor in CMML (22% 10-year NS in the 2000-09 period; CI: 9-56%) and PMF (7% 10-year NS in the 2000-09 period; CI: 2-25%).

Conclusion: These data emphasise some important points and highlights the need of research program in rarest entities.

Title

Code 169

CANCER INCIDENCE IN ADOLESCENTS AND YOUNG ADULTS IN LUXEMBOURG FROM 2014 TO 2021

Authors Names

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Theme

Age and cancer

Abstract

Background: Adolescents and Young Adults (AYAs) aged 15-39 experience generally high survival rates. However, a cancer diagnosis during this critical stage of life is likely to have lasting consequences e.g.: on fertility, social and professional life and on long-term quality of life. Understanding the cancer burden in this group is essential for informing public health strategies and survivorship care planning. This study aims to analyze the incidence of cancer in AYAs in Luxembourg to provide an overview of cancer burden in this specific population.

Methods: Incidence data from the National Cancer Registry of Luxembourg (Registre National du Cancer, RNC), which recorded all new cancer cases diagnosed in Luxembourg, was extracted for the period 2014-2021. Age-standardized incidence rates (ASR), adjusted by the European population, were calculated per 100,000 inhabitants, stratified by age group, sex, and cancer type. The most common cancers in AYAs were identified, and the ASR over time were described.

esults: During the period of the study, 1,109 new cancer cases in AYAs were identified representing 4.7% of all cancer cases in Luxembourg. 61.5% of cases were diagnosed among women. The most common cancers were breast (C50), thyroid (C73), and skin malignant melanoma (C43) in women and testicular (C62), thyroid (C73), and Hodgkin's lymphoma (C81) in men. The ASR ranged from 17.9 to 22.5 cases per 100,000 person-years. By comparing periods between 2014-2017 and 2018-2021, an ASR decrease of 3.6% was observed.

Conclusion and perspectives: Monitoring cancer incidence in AYAs is crucial for understanding cancer burden and guiding public health strategies. This study provides essential data to support policy development tailored to AYAs in Luxembourg. Continued research is necessary to further explore risk factors and improve health promotion and primary prevention in this population.

Keywords: Adolescents and Young Adults (AYAs), Cancer incidence, Luxembourg

Title **Code** 170

CANCER REGISTRATION PRACTICES IN EUROPE

Authors Names

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Theme

Results from new cancer registries

Abstract

Objectives: Starting from 2012, the European Commission's Joint Research Centre has been hosting the Secretariat of the European Network of Cancer Registries (ENCR). In this context, an overview of cancer registration practices and data accessibility in Europe was explored.

Methods: In May 2023, a survey was conducted among ENCR population-based cancer registries (CRs). Completion of the questionnaire became also a condition for new members of the ENCR.

Results: Among the 122 survey respondents from 32 European countries, 106 were general CRs (all ages or only adult, all cancers), and 27 provided national coverage. Of all respondents, 72% reported mandatory cancer registration in their country, whereas 17% declared legislation to be under discussion. Different levels of passive notification were observed: from pathology reports (96%), hospital discharges (97%), death certificates (81%), outpatient clinical records (74%), haematology laboratories (65%), and limited to medical claims or insurance data (18%); active collection in hospital patient files was reported by 63% of registries. In general CRs, 55% reported to register all solid cancers as well as all skin cancer types and haematopoietic malignancies; 20% do not record basal cell carcinoma, 13% restricted skin registrations to melanoma only, and 7% consider solid tumours only. In-situ cases are recorded for all sites in 55% of general CRs; 63% record in-situ breast cancers, 61% in-situ urinary tract and 61% in-situ cervical cancers. Benign and borderline CNS tumours are recorded in 89%. 96% of CRs collected TNM or other stage for adults, while only 32% of respondents recorded Toronto stage for paediatric cancers. 79% of respondents gathered information on primary treatments; of these, 86% recorded also treatment order.

Conclusions: The valuable contribution provided by CRs elucidates on the main challenges European registration is facing, with a view to facilitate future support also from EU institutions.

Title

Code 173

CANCER INCIDENCE IN OLDER ADULTS IN ANNABA-ALGERIA 2015-2019

Authors Names

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Theme

Age and cancer

Abstract

Background: In Algeria the increase of life expectancy at birth can explain the increase of new cancer cases. The aim of the study is to calculate monitoring indicators of cancer in older adults aged 60 years or over in Annaba.

Methods: Annaba Cancer Registry data was used for the period 2015-2019. It's a population based cancer registry. The average annual population was 721, 294 . The proportion of older adults was 8.8%

Results: Over the period 2015-2019, 3147 new cases were registred in older adults population among 6635 all new cancer cases (all sites but C44) Truncated Crude Incidence Rates were respectively in males and females 1117.1 per 100 000 M and 833.8 per 100 000 F. Compared to population younger than 60 years old, the part of all cancer sites but not C44 in older adults is higher in men (59.8%) than women (36.7%) Prostate cancer, lung, colorectal and bladder cancer were the leading cancer sites representing the two-thirds of all cancer cases in older males. Breast cancer, colorectal and stomach cancers were the most common cancers representing the half of all cancer cases in older females.

Conclusion: An emphasis should be given to geriatric male population in planning the management of cancer.

Title

Code 174

INCIDENCE OF ADOLESCENTS AND YOUNG ADULTS CANCER IN ANNABA - ALGERIA

Authors Names

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Theme

Age and cancer

Abstract

Abstract: Adolescents and young adults (AYAs) with cancer are a vulnerable population, although this group is understudied in Algeria.

Objective: Draw up the epidemiologic profile of cancer in AYAs group in Annaba between 2004 and 2021.

Methods: Data of Annaba Cancer Registry (ACR) were used .
Only invasive new cases occured among AYAs group aged between 15 and 39 years during the period 2004-2021 were investigated. The overall number of cancers all ages, was 15 676 cases.

Results: Cancer AYAs group represents 12.9% of all new cancer cases. Women are more likely to be involved with a sex-ratio (female/male) 2.4 The most common cancers were: breast (31.1%), thyroide (13.2%), lymphoma (10.6%) and colorectal (8.3%). Some types of cancers were more common in males, whereas other cancers are more common in females. In males, the most common cancers were: lymphoma (17.9%), colorectal (13.2%) and nasopharynx (8.2%). In Females, the most common cancers were: breast (44.1%), thyroide (15.9%) and lymphoma (7.8%). The incidence of specific cancer types varies according to age. The most common cancer types in 15-19 years old (131cases) were: lymphoma, leukemia and nasopharynx. For 20-29 years age group (495 cases) , the most cancer types were; thyroid, lymphoma and breast. For cases aging 30 to 39 years old (1387 cases), the most common types were; breast, thyroide and colorectum

Dicussion: This population is understudied in Algeria, and needs more investgations for cancer prevention plan and better management cares.

Title

Code 175

WORLD-WIDE SURVIVAL TRENDS FOR PATIENTS AGED 0-24 YEARS DIAGNOSED WITH LYMPHOMA DURING 2000-2014 (CONCORD-3)

Authors Names

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Theme

Age and cancer

Abstract

Background:CONCORD-3 highlighted global variations in five-year survival from lymphomas in children (0-14 years) and in adults (15-99 years). Here, we examine world-wide trends in survival from lymphoma and its morphological sub-types in young patients (0-24 years) diagnosed during 2000-2014, overall and by age.

Methods: We analysed data for 120,120 children (0-14), adolescents (15-19) and young adults (20-24), provided by 300 population-based cancer registries in 62 countries. Morphology sub-types were grouped according to the International Classification of Childhood Cancer (ICCC-3). We estimated net survival up to 5 years by age and sub-type, using the non-parametric Pohar-Perme estimator. To control for background mortality, we used life tables by country/region, single year of age, single calendar year and sex, and where possible by race. All-ages survival estimates were standardised using the marginal distribution of young patients included in the analysis.

Results: During 2010-2014, 5-year age-standardised net survival in young patients varied widely, from 58% in Chile to 95% or more in Belgium, Germany, Iceland, Norway, Slovenia and Switzerland. Survival was higher for Hodgkin lymphoma, with a global range from 70% to over 95%. The difference in survival between children and adolescents decreased over the 15-year period, but the gap between high-income and low- and middle-income countries persisted.

Conclusion: This study offers the first world-wide picture of trends in survival from lymphomas and its sub-types in children, adolescents and young adults. Survival was systematically higher for children, than for adolescents and young adults. However, this gap is closing over time, especially in high-income countries. Population-based cancer registry data are crucial to monitor further improvements.

Title **Code** 176

SLOVENIAN CHILDHOOD CANCER CLINICAL REGISTRY: INSIGHTS FROM THE FIRST REPORT

Authors Names

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Theme

Results from new cancer registries

Abstract

Objectives: The Slovenian Childhood Cancer Clinical Registry (SCCCR) launched in 2019 as part of the Slovenian Cancer Registry to monitor childhood and adolescent cancer (CAC) burden in more detail. We aim to present the main findings from its first report.

Methods: SCCCR has complete national coverage for all CAC cases aged 0–19 from 1983–2023. Since 2019, detailed data on diagnosis, treatment and follow-up are registered by active registration with remote access to electronic health records. For the first time, long-term standard burden indicators are presented according to the International Childhood Cancer Classification (ICCC), along with new data, e.g. distribution by Toronto stage, treatment details and progressions since 2019. Follow-up of vital status and progressions ended in March 2025.

Results: Between 1983–2023 there were 3088 CAC cases (male-female ratio 1.13:1). The crude incidence rate rose from 130 to 200 cases per million (APC +1.4%; mostly on account of ICCC groups I, II and XI), whereas mortality declined (APC -1.8%). 10-year observed survival improved from around 60 to 90%. Boys had slightly worse survival. Survival was lowest in ICCC groups IX (67.4%), III (75.8%) nad VIII (75.6%). Within primary treatment, 50% received surgery (25% exclusively), 70% systemic therapy (30% exclusively) and 22% radiotherapy (almost none exclusively). In patients diagnosed in 2019–2023, a progression occurred in 11% cases, most often in ICCC groups VIII (27%), IV (25%), V (25%), and III (20%). In acute lymphoblastic leukaemia (ALL), Toronto stage was CNS1 in 80%, in Hodgkin´s lymphoma, 57% cases were stage II, and 43% stage III in non-Hodgkin´s lymphoma. In medulloblastoma, 67% were M0. 5% of ALL and 15% of acute myeloid leukaemia cases received bone marrow transplant.

Conclusions: SCCCR has enriched the standard dataset since 2019, which will allow clinically relevant outputs, such as stage-specific survival, therapy-related outcomes and late sequelae analyses.

Title **Code** 177

PROCESSING WORKFLOW OF THE EUROPEAN CANCER REGISTRIES' DATA SUBMITTED TO THE EUROPEAN CANCER INFORMATION SYSTEM (ECIS)

Authors Names

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Theme

Data quality

Abstract

Objectives: To ensure quality and comparability of the cancer registries' data submitted to the European Cancer Information System (ECIS), the Joint Research Centre (JRC) developed an automated data processing workflow to provide detailed, harmonised and timely feedback to the European cancer registries (CRs).

Methods: Data prepared by CRs according to the 2022 ECIS Data Call protocol and submitted via the secure JRC-ENCR portal, were processed using automated IT tools. After data format verification, internal data consistency was checked by the JRC-ENCR Quality Check Software (QCS). Inconsistencies were reported to CRs for verification. Corrections received by the CRs were consolidated and data re-checked by the QCS for selection of multiple primaries (MPs). Final cleaned data was aggregated by the JRC Cancer Registries Aggregation Tool for ECIS (CRATE) and incidence figures visualised in the ECIS private website to be verified and approved by CRs before publication in the ECIS web application.

Results: More than 24 million individual records from 85 CRs were validated. The median proportion of inconsistencies flagged by the QCS was 11.1% (Inter Quartile Range-IQR: 7.5%-20.3%) of the whole dataset. Out of these, the median proportion of compulsory revisions requested to CRs was 0.03% (IQR: 0.01-0.07), while the median proportion of MPs was 0.8% (IQR: 0.5-1.2). After CRs corrections, the median proportion of excluded cases was 0.2% (IQR: 0.1%-0.5%), of which false MPs represent the 98.7% (IQR: 94.4%-100.0%). Following data cleaning and aggregation, the median proportion of cases excluded from the ECIS incidence analysis was 1.5% (IQR: 0.8%-2.6%) of the original submitted data.

Conclusion: Results showed high variability of detected inconsistencies across CRs, emphasizing the need for standardised validation procedures to ensure European data accuracy and comparability, involving the CRs in the validation process and providing timely assistance in data revision.

Title

Code 181

GLOBAL SURVEILLANCE OF CANCER SURVIVAL TRENDS (CONCORD-4): PRELIMINARY RESULTS

Authors Names

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Theme

Survival

Abstract

Background: CONCORD is an ambitious global public health programme for the long-term surveillance of cancer survival. In 2018, CONCORD-3 updated the global surveillance of survival trends over the 15 years 2000-2014. Data were provided by 322 population-based cancer registries in 71 countries (47 with national coverage), including 37.5 million patients diagnosed with one of 18 cancers in adults and 3 cancers in children. The CONCORD programme now involves over 700 investigators.

Methods: In CONCORD-4, we have invited submission of data for adults diagnosed with one of 22 cancers during 2000-2019, or later years. Older registries were invited to submit data from 1990. We will examine long-term trends in age-standardised net survival for patients diagnosed during the 33 years 1990-2022, using the Pohar Perme estimator. In collaboration with St. Jude Children's Research Hospital, we will also examine survival trends for all childhood cancers, to monitor progress towards the target in WHO's Global Initiative for Childhood Cancer, to increase five-year survival for all cancers combined in children to 60% by 2030.

Results: By March 2025, we had received over 93 million anonymised individual records for adults and 669,630 for children, from 359 cancer registries in 74 countries. Over 36 million records, including 237,614 children, were provided by 143 registries in 30 European countries. We will present global trends in 5-year net survival for selected European and GRELL countries.

Conclusion: Cancer survival estimates from the CONCORD programme have become the de facto standard for international comparisons, as a metric of health systems performance, cancer policy and improvement in outcomes. OECD, in partnership with the CONCORD programme, has included survival estimates for 48 countries in its regular Health at a Glance publications since 2017. CONCORD-4 results will be a core component of the CONCORD-Lancet Global Commission on Cancer.

Title

Code 183

ASSESSING THE OMOP COMMON DATA MODEL USING CLINICAL AND POPULATION-BASED DATA: THE RETROPERITONEAL SARCOMA USE CASE

Authors Names

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Theme

New methods innovation and AI applications

Abstract

Objectives: The European Reference Network on rare adult solid cancers (EURACAN) aims to develop a European registry for sarcomas leveraging databases already available. However, data harmonization is challenging due to the number of centres involved and the data heterogeneity among them. To solve these problems, we transformed data from clinical and population-based registries to the Observational Medical Outcomes Partnership (OMOP) Common Data Model (CDM). We then test the suitability of this approach by identifying prognostic factors for retroperitoneal sarcoma (RPS) as first use case.

Methods: Three registries converted their data to the OMOP CDM: the population-based Netherlands Cancer Registry (NCR) and two sarcomas clinical registries (Istituto Nazionale dei Tumori, INT and University Hospital Graz, Graz). For the RPS use case, we selected patients ≥18 years old with a primary localized, non-metastatic RPS with a surgery between 01/01/2010 and 31/12/2017. We ran the analyses in a federated system on OMOP-formatted data and evaluated prognostic factors of RPS, such as patient, tumour and treatment characteristics, across registries. We computed 5-year overall survival (OS) stratified by sex and histology, and compared these results with available evidence. Analyses to identify prognostic factors are ongoing.

Results: We identified 848 patients with RPS in total. Patient characteristics were similar across registries. The most common histologies were liposarcomas and leiomyosarcomas. High-grade (G2+G3) RPS were very common in clinical settings (INT, Graz). Surgery was macroscopically complete (R0/R1) in almost all cases of INT and Graz.

Conclusions: This use case demonstrated that the OMOP CDM is a suitable and reliable tool for rare cancer data harmonization. The findings are consistent with expert knowledge and available evidence. The federated network will be extended with Grupo Español de Investigación en Sarcomas (GEIS) and Norwegian Cancer Registry databases.

Title

Code 187

FOCO: STRATEGIES AND RESULTS OF THE EDUCATION AND TRAINING PLAN ON THE CUBAN NATIONAL CANCER REGISTRY.

Authors Names

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Theme

Strategies to enhance timeliness on cancer registries

Abstract

Background: FOCO, was designed as the new integral plan of education and training for human resources involved on National Cancer Registry, with financial support of MediCuba Suiza and MediCuba Europa. Capacity building in cancer registry´ methods, processing technologies and data analysis are being developed to introduce at whole country, including all technicians, medical and other professionals as well as health managers.

Methods: FOCO is in the phase of implementing its technologies. Groups of doctors and registrars were selected to participate in the pilot test of the first course (Module I). Seminars, trainings and qualification courses were implemented for its execution ""in situ"". Visits were made to the provinces and hospitals, CANREG 5 is implemented on the biggest hospitals and all registrars are trained. Some professionals trained in the ""Trainer of Trainers"" stage of FOCO are being included as professors.

Results: Two books published: ""Manual of Procedures of the National Cancer Registry"" and ""What is the first thing we should know about cancer registries?"" (Available in Spanish); Course for Registrars and Doctors developed as a pilot study to prove presentations, exercises, evaluation methods and the achievement of new professors (result of “train to trainers” model); Seven provinces visited, 126 people trained, 33 hospitals visited and CANREG 5 implementation in 26 of them; National Codification Training with the participation of 38 registrars from all provinces of the country.

Discussion and Conclusion: According to the acceptance and feasibility of the project evaluated by the group of professors working on this technology, the relevance of FOCO as a training plan in the National Cancer Registry of Cuba is already evident. The programme and teaching materials, adapted to Latin American countries, could serve as an example and be used by other registries.

Title

Code 190

UROTHELIAL TUMORS: STAGE AT DIAGNOSIS AND PROGRESSION

Authors Names

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Theme

Epidemiological clinical use of cancer registry data

Abstract

Objectives: The main characteristic of bladder cancer is its great capacity for recurrence after resection and progression under treatment. Following the ENCR registration recommendations, we present the first results of a study on the progression of bladder tumors to a clinically critical stage using data from a population-based registry.

Methods: The data come from the Tarn cancer registry (France, ~400,000 inhabitants), which recorded the stage and evolution of urological tumors for three incidence periods (1990-97, 2000-05, 2013-17) in order to have at least 5 years of follow-up. Only microscopically confirmed urothelial carcinomas (M8120-8131, M8020, M8031, M8082) regardless of stage at diagnosis (Ta, Tis or invasive) were included. Clinically relevant worsening (bladder muscle protrusion: ≥T2, N+ or M+) was sought, and the time to onset of this evolution was analyzed (Cox modeling including age, sex, period and stage at diagnosis).

Results: 2,472 patients were included (83% male; mean age: 72 y (men) vs. 75 y (women), $p<0.001$). Muscle invasive bladder cancer (MIBC:≥T2, N+ or M+) at diagnosis accounted for 22% of cases in men and 26% in women ($p=0.10$). The incidence of MIBC increased with age from 17% before the age of 65 to 26% after the age of 85 in men, and from 15% to 34% respectively in women. Among non-MIBC (Ta/Tis/T1), 10% worsened in men and 12% in women (pNS), within a median time of 29 [Q1=11-Q3=64] and 31 [Q1=11-Q3=71] months respectively. This lack of difference in progression according to gender persisted after adjustment for age, period and stage of non-MIBC.

Conclusions: Our data confirm a more rapid worsening of the disease in older patients, and if the tumour is already invasive or in situ. However, the differences between men and women in stage at diagnosis and speed of progression to the first clinically pejorative stage are not significant. Subsequent evolutionary states (N+ or M+) and their speed of occurrence will be considered later.

Title **Code** 191

THE ROLE OF EUROPEAN CANCER REGISTRIES IN ASSESSING LUNG CANCER RISK FACTORS

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Theme

Epidemiological clinical use of cancer registry data

Abstract

Objectives: Lung cancer was the main cause of death by cancer in Europe in 2022. Within the review of studies of lung cancer risk factors for the IARC Handbook on Cancer Prevention program, this study aims to report the work performed by the cancer registries on environmental, occupational and lifestyle lung cancer risk factors assessment.

Methods: Searches were done in Pubmed for studies performed by or with the involvement of the European cancer registries that investigated the association between potential risk factors and lung cancer risk. Studies with an abstract in English published between 2015 and February 2025 were included.

Results: The review identified 28 studies fulfilling the inclusion criteria from: Czech Republic (1), Denmark (1), England (1), Finland (6), France (3), Germany (1), Greece (2), Italy (4), Poland (1), Sweden (3), Switzerland (1), Nordic collaborations (3) and EU cohorts (1). Cancer registries were mostly used to identify cancer cases in different prospective studies and to follow up cohorts.
Most of the studies (15) investigated occupational exposures or occupation as risk factors of lung cancer. Other risk factors included radon exposure, indoor and outdoor air pollution, tobacco smoking or passive smoking. There were consistent findings that exposure to asbestos, pesticides, diesel exhaust, chromium, silica dust and other compounds lead to an increased risk of lung cancer. Occupation as visual artist and police officer are not related to higher risk of lung cancer.

Conclusions: Cancer registries are a key data source for different types of studies and are used to assess a range of lung cancer risk factors in Europe. Linkage with different data sources is crucial for understanding the effects of exogenous and endogenous exposure on cancer incidence and thus boosting clinical and epidemiological research.”

Title **Code** 192

CHILDHOOD CANCER IN SOUTH PORTUGAL: A RETROSPECTIVE ANALYSIS IN INCIDENCE AND SURVIVAL

Authors Names

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Theme

Age and cancer

Abstract

Background: Childhood cancer remains a leading cause of death. In Europe, 2022 estimates predict 14,000 new cases with an age-standardized incidence rate (EASR) of 136 per one million and a 5-year overall survival rate of 81%. These estimates vary by country, highlighting the need for population-based studies to evaluate trends and inform cancer control strategies.

Objective: The South Portugal Cancer Registry (ROR-Sul) covers approximately half of Portugal, serving a population of 4.8 million people. This observational study examines childhood cancer incidence and survival rates for patients diagnosed in the ROR-Sul regions from 1998 to 2022.

Methods: Cancer cases in children under 15 years-old, resident in South Portugal (1998-2022) were taken from the National Cancer Registry. EASR was calculated using the 2013 European standard population, and trends analyzed with joinpoint regression. Kaplan-Meier method estimated Overall Survival (OS). Analyses were stratified by year of diagnosis, sex, age, cancer type, and region.

Results: The analysis included 2981 childhood cancer incidents, with a crude incident rate of 168.15 per million across the South Portugal Region. EASR was 166.42, with an Annual Percent Change of -0.17. Boys had a higher percentage of cases (boys-to-girls ratio of 1.15) and EASR (173.83) compared to girls (158.61).
The study lost 153 children to follow-up (5.13%). The five-year overall survival (OS) was 81.5%, dropping to 76.67% after 20 years. The five-year OS for children diagnosed in 1998 was 73.72%, rising to 82.95% in 2008; three-year OS increased from 78.53% in 1998 to 85.93% in 2008 and 86.39% in 2018.

Conclusions: The incidence rate in Southern Portugal is higher than the overall estimates for Europe; however, the survival rates align with European estimates and have improved over time.

Title

Code 193

EVALUATION OF PROSTATE CANCER DIAGNOSIS DURING THE COVID-19 CRISIS IN THE FRENCH CARIBBEAN

Authors Names

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Theme

Epidemiological clinical use of cancer registry data

Abstract

Objectives: Cancer prostate is the most common cancer in French men. In French West Indies it represents more than 50% of the masculine cancers and is over-incident. Main objective: This study aims to evaluate the COVID19 pandemic impact on the incidence and diagnosis of prostate cancer patients in Martinique, between 2018 and 2021.

Other objective: To study COVID19 pandemic impact on patients' survival.

Material and methods: A retrospective, observational, comparative study between the periods before and during COVID-19 pandemic has been performed. Data on men diagnosed with invasive prostate cancer, between 1st January 2018 and 31st December 2021, were extracted from the Martinique population-based registry. The period 2018-2019 was considered before COVID-19 pandemic and the period 2020-2021, during COVID-19 pandemic. Standardised incidence rates were calculated to compare Incidence rates before and after covid-19 pandemic. A log rank test has been performed to compare survival curve.

Results: In total, 2345 patients were included with a mean age of 67 years (±9), with 1262 patients before pandemic and 1083 patients after. Revealing a 12% reduction in incidence rate ($p=0.0015$). A 13% increase of higher risk of the D'AMICO score ($p=0.03$) and a 75% increase of metastatic stage ($p<0.001$) have been showed. However, no difference was found between survival curves, before and during pandemic.

Conclusions: Covid-19 pandemic did not modify trend in survival curve yet. However, there were significant differences in incidence and diagnosis data. So, we expect a rebound in incidence in 2022. this indicator should be monitored at the time of the crisis, as a decrease may result from an increase in late diagnoses. Which may lead to a reduction in prostate cancer survival in a few years.

Title **Code** 194

EVALUATING THE IMPACT OF THE COVID-19 PANDEMIC ON THE MENTAL HEALTH AND BEHAVIOR OF CANCER PATIENTS IN MARTINIQUE

Authors Names

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Theme

Epidemiological clinical use of cancer registry data

Abstract

Objectives: In 2020, the world faced a major public health crisis not seen in recent decades. Main objective: This study aims to describe the impact of stressful life events on the healthcare pathway of patients with cancer in the French West Indies (FWI), subsequent to the lockdown implemented due to the COVID-19 pandemic.

Materials and Methods: We performed an observational study of patients with cancer in Martinique from July 2020 to December 2021. To assess the psychological dimension, we employed the PCL-5 questionnaire to detect post-traumatic stress disorder (PTSD) and the Beck Depression Inventory-II (BDI-II) to quantify the severity of depressive symptoms. The QLQ-C30 questionnaire were used to evaluate the quality of life (QoL). Overall survival rate was estimated at 2 and 3 years after the lockdown.

Results: We included 72 patients aged of 55.7 ± 10.0 years with localised cancer (60%). A total of 59% had breast cancer and 27% colorectal cancer. Patients spent an average of 76.3 ± 72.0 days in lockdown. Fewer patients reported symptoms of COVID-19 before and during (18%) the lockdown than after (25%) ($p = 0.53$). There were more patients with moderate depression after the lockdown but the study did not reveal any PTSD in patients. Overall patients felt no change in their QoL (60%). Survival rate at 2 and 3 years were 95.7% (87.3 - 98.6) and 92.9% (83.7 - 97.0) respectively.

Conclusion: The cancer patient’s psychological status was assessed with no discernible impact from the COVID-19 crisis. This stability allowed the patients to maintain continuity in their cancer health care pathway. These findings highlight the importance of psychological support and effective cancer care management during times of health crisis.

Title **Code** 199

MEASURING ETHNICITY-SPECIFIC RISK OF CANCER FOLLOWING PRESENTATION IN PRIMARY CARE WITH AN ABDOMINAL SYMPTOM

Authors Names

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Theme

Epidemiological clinical use of cancer registry data

Abstract

Objectives: Abdominal symptoms are be associated with risk of cancer, and studies suggest lower cancer risk of in non-White ethnicity groups in England. We examined ethnic variation in cancer risk in patients presenting with abdominal symptoms in primary care.

Methods: We used information on the first presentation with one of ten abdominal symptoms recorded in CPRD Gold 2010-2014 in patients aged 30-99, linked to English national cancer registry data. We estimated cancer risk given age at presentation, gender, smoking status (non, ex, current), ethnicity (White, Black, Asian, Mixed, Other, Unknown) and presenting symptoms. We tried four approaches: simple stratification (by ethnic group); standard statistical modelling using logistic regression, including with stepwise selection of interactions; 'MAIHDA'; and Bayesian modelling. We will validate model results using data on first presentations recorded in CPRD Gold between 2015 and 2017, and potentially considering a larger extract of a different primary care dataset.

Results: We included 657,291 patients presenting with abdominal pain, bloating, constipation, diarrhoea, change in bowel habit, rectal bleeding, abdominal mass, dyspepsia, dysphagia or jaundice. Half were non-smokers; 59% female. Stratification gave unrealistic results. All model-based approaches generally produced relatively similar estimates overall by ethnic group, but more flexible methods gave different ethnic-group specific results for specific age ranges and symptoms. For the most alarming symptoms, jaundice and abdominal mass, there was little apparent difference in symptom-specific risk by ethnicity. For other abdominal symptoms, including certain alarm symptoms, patients of Asian ethnicity had lower risk of cancer.

Conclusion: Age-sex-specific risk of cancer in patients with relevant symptoms varies by ethnicity but is also dependent on methodological approach used to estimate such differences. Validation results will be of importance.

Title **Code** 201

INCIDENCE, MORTALITY, SURVIVAL, AND SURVIVAL-ASSOCIATED FACTORS IN CERVICAL CANCER, IN PASTO, COLOMBIA 2005-2019.

Authors Names

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Theme

Survival

Abstract

Introduction: Worldwide, Cervical cancer is the fourth leading cause of cancer-related mortality in women. The global incidence rate is 14.1 cases per 100,000. In Colombia, 35,895 prevalent cases were reported until 2024. In Pasto, it is the third leading cause of cancer morbidity in women.

Objective: To analyze the incidence, mortality, risk factors associated with 5-year survival, and the burden disease in patients with cervical cancer in Pasto, Nariño, Colombia (2005-2019).

Methodology: This es an Analytical cohort study, we used data from the Popuation base Cancer Registry of Pasto, wich is part of the International Association of Cancer Registries (IACR). 5 years survival rate were calculated by Kaplan-Meier survival curves and Cox regression models were applied to assess factors associated with survival. The incidence, mortality and burden of desease were calculated by the WHO model.

Results: The incidence of cervical cancer was 18.3 per 100,000 woman-years. The highest prevalence was observed in women aged 35 to 59 years, with 2.5% cases in women under 30. At diagnosis, 32% of patients were in stage I, 26% in II, 28% in III and 12,5% in IV. The 5-year survival rate was 45%. Diagnosis before age 40. Over 15 years, 10,537 DALYs were recorded, 89% due to premature death. Protective factor for 5 years survival included higher education level, and early-stage diagnosis. Being enrolled in a subsidized healthcare system, living in rural areas, and having low or no formal education are risk factors for women facing these conditions.

Conclusions: Despite extensive public health policies in Colombia, like free HPV vaccination for children, cervical cytology screening, HPV DNA testing, and VIA-VILI strategies, early detection coverage remains suboptimal (~60%). Consequently, over 60% of cases are diagnosed at invasive stages. Women face significant administrative, socioeconomic, cultural, and humanitarian barriers to timely diagnosis and care.

Title

Code 203

CHILDHOOD CANCER IN ITALY: INCIDENCE RATES AND TRENDS (2008-2017)

Authors Names

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Theme

Epidemiological clinical use of cancer registry data

Abstract

Objectives: This study provides updated data on childhood cancer (CC) incidence in Italy, including short-term (2008-2017) and long-term (1998-2017) trends, and compares these figures with those from other European countries to contextualize observed patterns.

Methods: Data from 31 Italian population-based cancer registries (CRs) covering 77% of the Italian population aged 0-19 were analysed. The dataset included cases diagnosed between 2008 and 2017, with long-term trends assessed using data from 15 CRs. Tumours were classified according to the International Classification of Childhood Cancer, Third Edition (ICCC-3). Age-specific incidence rates (IRs) and age-standardized rates (ASRs) were computed. Trends were analysed using Joinpoint regression to estimate annual percentage change (APC) and average annual percentage change (AAPC).

Results: Between 2008 and 2017, 17,322 malignant CC cases were recorded. The ASR was 166.8 per million (0-14 years) and 294.3 per million (15-19 years). Incidence rates were higher in Central Italy, particularly for epithelial tumours and melanoma. Compared to other European countries, Italy had higher rates of leukaemia, CNS tumours, and epithelial carcinomas. Short-term trends (2008-2017) remained stable overall, but increasing trends were observed for bone tumours in children (AAPC: 3.9), and thyroid tumours (AAPC: 2.7) and melanoma (AAPC: 4.3) in adolescents. Long-term trends (1998-2017) were stable in children, while adolescent incidence increased by 0.9% per year, driven by the increasing incidence of thyroid cancer and melanoma.

Conclusions: While overall paediatric cancer incidence in Italy remains stable, melanoma and thyroid tumours in adolescents are rising. Higher rates in Central Italy may relate to environmental and/or diagnostic factors. Ongoing monitoring and research are needed to understand regional differences and assess early diagnosis and environmental exposures.

Title **Code** 204

ASSESSING OCCUPATIONAL CANCER RISK: AN ECOLOGICAL APPROACH

Authors Names

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Theme

Environmental and occupational exposure and cancer

Abstract

Objectives: Although occupational exposure to carcinogens poses a serious risk, research in Portugal is limited by the absence of reliable occupational data. This study aims to assess whether cancer incidence linked to occupational exposure correlates with the most common jobs in each municipality.

Methods: This study analyzes 15 cancer types associated with occupational risk using registry data from 153,819 individuals aged 45+, diagnosed between 2011 and 2021. Due to the lack of individual occupation data, municipalities were grouped into six clusters using a K-NN algorithm based on the distribution of 20 high-risk occupations. Cancer cases were assigned to clusters by residence. To test differences in cancer incidence across clusters, Poisson regressions were performed for each cancer type, using age, sex, and cluster as predictors. The outcome was whether the individual developed the specific cancer or another.

Results: Clusters reflect distinct occupational profiles: office, cleaning, and waitressing (C1); agriculture, construction, and manufacturing (C2, C3); textiles (C4); agriculture (C5); and construction (C6). A Chi-square test revealed substantial differences in cancer type distribution among clusters ($p<0.001$, Cramer's V=0.4).
Poisson regressions also found clear contrasts between clusters. Cluster 4 showed nearly three times higher nasal cavity cancer incidence than Cluster 1 (IRR=2.97, $p<0.001$), aligning with exposure to textile-related carcinogens. Mesothelioma incidence was higher in Cluster 3 (IRR=1.39), likely related to asbestos, silica, and diesel exhaust in construction environments.

Conclusions: Though based on indirect associations, this study highlights a pattern between occupation and cancer risk, particularly in the textile sector, as described in literature. Systematic recording of patients' occupations in cancer registries is essential to enhance research and help guide preventive strategies in high-risk industries.

Title **Code** 206

TRENDS IN INVASIVE AND IN SITU MELANOMA INCIDENCE AND MELANOMA MORTALITY IN NAVARRA, SPAIN

Authors Names

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Theme

Epidemiological clinical use of cancer registry data

Abstract

Objectives: Melanoma is a growing public health concern worldwide. Globally, there has been a steady increase in melanoma incidence over the past decades. The aim was to analyse trends in invasive and in situ cutaneous melanoma (CM) incidence and CM mortality in the last 40 years in Navarra, Spain.

Methods: Population-based incidence (1980–2019) and mortality (1980–2023) data were retrieved from the Navarra cancer and mortality registries. We included all CM cases with in situ or malignant behavior (ICD-10 codes C43 and D03). Age-standardized incidence (ASIR) and mortality rates (ASMR) were calculated using the 2013 European standard population. Joinpoint regression was used to assess trends in rates overall and by sex and age groups (<50, 50-69, ≥70 years old).

Results: The ASIR of in situ CM increased significantly during the whole study period (1980–2019), from 0.1 to 8.0 per 100,000; with an average annual percentage change (APC) of 11.0 (95%CI 7.3–14.8; p<0.001), but it was less prominent from the year 1998 (APC 6.2; 4.6–7.7; p<0.001). The ASIR for invasive CM rose from 3.9 to 18.0 per 100,000 between 1980 and 2013 (APC 4.2; 3.5–4.9; p<0.001) and declined from 18.0 to 12.4 per 100,000 between 2013 and 2019 (APC -5.1; -10.3–0.3; p=0.06). Incidence rates and trends were similar for both sexes. The increases in incidence of both in situ and invasive CM were greater for those ≥70 years old than for the younger groups. As for mortality, the ASMR increased until year 2000 (APC 4.7; 1.8–7.7; p<0.002), and then stabilized (APC -0.2, -1.6–1.2; p=0.76).

Conclusions: The incidence of in situ CM has increased notably in the last four decades in Navarra, while the incidence of invasive CM showed a less pronounced increase until 2013 and has tended to decrease thereafter. CM mortality has stabilized since 2000. These trends may be a result of more effective secondary prevention efforts, including increased awareness of the disease among clinicians and the general population.

Title

Code 207

APPLICATION OF THE TORONTO GUIDELINES FOR THE STAGING OF CANCER IN CHILDHOOD AND ADOLESCENCE IN THE REGION OF MURCIA

Authors Names

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Theme

Data quality

Abstract

Objectives: Accurate staging of pediatric tumors is essential for therapeutic planning and epidemiological analysis.This study aims to analyze the application of the Toronto Guidelines in the staging of pediatrics tumors diagnosed in the Region of Murcia (RM) in 2016-2020.

Methods: Data come from the population-based cancer registry of RM. All cases of cancer diagnosed in in children 0-14) and adolescents (15-19) in RM from 2016 to 2020 were included, stratified by sex and age groups, applying the Toronto staging.

Results: In RM, 313 cases of cancer were diagnosed in childhood (223) and adolescence (90) in 2016-2020. Toronto staging was applied to 70.9% of childhood tumors and 57.7% to adolescents. Of the tumors staged in childhood, for acute lymphoblastic leukemia (ALL), 88% were CNS1, 6% CNS2, 4% CNS3, and 2% unknown (unk.); Hodgkin lymphoma (HL) 64% IIA, 14% IIIA, and 22% IVB; non-Hodgkin lymphoma (NHL), 72% I, 17% III, and 14% unk.; neuroblastoma, 44% L1, 37% L2, 13% M, and 6% MS; Wilms tumor 33% I, 22% II, 11% III, and 34% IV; rhabdomyosarcoma 71% I and 29% III; soft tissue sarcomas 50% I, 16% II, 17% III, and 17% IV; osteosarcoma 78% L and 22% M; Ewing sarcoma 50% I and 50% M; retinoblastoma 67% O and 33% unk.; hepatoblastoma 100% I; testicular cancer 100% I; medulloblastoma and other CNS embryonal tumors 50% M0, 20% M1, 10% M3, and 20% unk.; and ependymoma 50% type M0 and 50% unk. In adolescents from ALL, 67% CNS1 and 33% CNS3; LH 6% IA, 31% IIA, 13% IIB, 19% IIIA, 25% IVB and 6% unk.; NHL 20% I, 20% II, 10% III, 20% IV and 30% unk.; rhabdomyosarcoma 100% IV; soft tissue sarcomas 11% I, 11% II, 23% III, L 22%, IV 22% and 11% unk.; osteosarcoma 100% L; Ewing sarcoma 100% M; testicular cancer 60% I, 20% IIA and 20% unk.; and ependymomas 100% M0.

Conclusions: The use of the Toronto Guidelines has allowed for a more precise characterization of childhood tumors. In most cases, the tumors were diagnosed in early stages.

Title **Code** 209

COLORECTAL CANCER INCIDENCE IN FOUR LATIN-AMERICA COUNTRIES : CHANGES IN RECENT INCIDENCE TRENDS

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Theme

Epidemiological clinical use of cancer registry data

Abstract

Objective: This study aims to analyze time trends in colorectal cancer (CRC) incidence by age group and sex using data from four population-based cancer registries in Uruguay, Costa Rica, Cuba and Quito (Ecuador).

Methods: We assessed CRC incidence (2002–2019) by age group (20–39, 40–49, 50–69, and 70+) and sex. Average annual percent changes and 95% confidence interval were estimated using joinpoint regression model.

Results: All cases of invasive CRC diagnosed between 2002 and 2019 were included, totaling 31299 cases in Uruguay, 12203 in Costa Rica, 54692 in Cuba and 3934 in Quito. In males under 50 years of age, we observed a significant increase in CRC incidence, with annual rises of 0.7% (95% CI: 0.5–5.2) in Uruguay (40–49 years) ,5.4% (95% CI: 1.7–10.5) in Quito (20–39 years) , 2.2% (95% CI: 1.1 -3.4, 40–49 years)in Costa Rica and 4.4%(CI 95% :2.4-6.8 , 20-39 years) in Cuba. In males over 50 years, incidence increased in all 4 countries. Uruguay (0.5%, 95% CI 0.01-1.1, 70+ years),Costa Rica (1.6%, 95%CI 0.8-2.6,50-69 years),Ecuador (4.1%, 95%CI 2.6-6.2, 50-69years; 5.8%,95% CI 4.1-7.8,70+ years),Cuba (1.8%, 95%CI 1.0-2.7,50-69 years) Among females under 50, incidence increased in Quito (5.3%, 95% CI: 1.7–8.3) and Cuba (2.2% (95% CI: 0.4 -4.3, 40–49 years; 4.5%, 95% CI: 1.7-7.8, 20-39 years). In females over 50, incidence trends varied: Uruguay showed a decline of -0.8% (95% CI: -1.3 to -0.2) in the 70+ age group, stable in Cuba (0.1%, 95%CI -1.4 to 1.6) while in Quito, incidence increased by 3.6% (95% CI: 2.2–5.5, 50–69 years; 3.1%,95% CI: 1.2–5.6, 70+ years) and Costa Rica(1.0%, 95% CI: 0.01-2.3, 50-59 years).

Conclusion: Our findings indicate a rising incidence of colorectal cancer in young adults. Significant disparities by country and sex were also observed. Dietary and lifestyle risk factors likely play a key role in these trends and warrant further investigation.

Title **Code** 212

HPV VACCINATION AND THE INCIDENCE OF INVASIVE CERVICAL CANCER: USING CANCER REGISTRY DATA TO ASSESS IMPACT

Authors Names

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Theme

Epidemiological clinical use of cancer registry data

Abstract

Objectives: HPV infection is the main cause of cervical cancer. The HPV vaccine prevents against infection of the major oncogenic types of the virus. Since 2008, Portugal implemented the vaccination of girls, and the coverage of at least one dose is above 90% since. This study aimed to assess the impact of the implementation of HPV vaccination on the evolution of cervical cancer in Portuguese women.

Methods: This is a cohort study with interrupted time series analysis to evaluate the impact of HPV vaccination (for birth cohorts≥1992) on cervical cancer rates. Were considered cases diagnosed up to 29 years-old, in women born after 1960 and diagnosed until 2021. Cancer cases were taken from the Portuguese Cancer Registry. A Poisson regression was performed to compare the number of cases before and after the vaccination, with birth year and vaccination as predictors. An additional Poisson model adjusted for birth year, vaccination, and post-1992 period was used to compare the trend of cases before and after 1992.

Results: A total of 565 cases of cervical cancer were diagnosed in women at age 29 or less between 1960 and 2021, representing an average of 9.26 cases per birth year. The average of cases per birth year reduced from 17.1 for women born before 1992, to 2.57 for women born from 1992 onwards. The decrease is observed in all considered age groups. The Poisson regression indicated that vaccinated cohort had a 40.33% lower case count compared to the unvaccinated (OR=0.60, 95% CI [0.34–0.98], $p<0.1$). Before the introduction of the vaccine, cases increased at a rate of 1.01 per year ($\beta=0.01$). After the introduction, the rate decreased to -2.96 per year ($\beta=-0.03$), resulting in a slope difference of -0.04, which was not statistically significant.

Conclusions: The impact of the HPV vaccine on reducing cervical cancer cannot be overstated, as seen in these preliminary findings. These results highlight the importance of maintaining continuous HPV vaccine efforts.