PAMPLONA. 18TH-20TH MAY 2022

Book of Abstracts

GRELL ASCENSION MEETING 2022

46th Annual Meeting of the Group for Cancer Epidemiology and Registration in Latin Language Countries.

GRELL

Instituto de Salud
Pública y Laboral
de Navarra

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AGENDA
2030

PRESENTATION

It is an honour for the *Instituto de Salud Pública y Laboral de Navarra* in Pamplona to host the annual GRELL meeting in 2022, the year in which we are celebrating the 50th anniversary of the Navarra Cancer Registry, which is currently the population-based cancer registry that has been operating the longest in Spain.

The objective of this congress is to help create the conditions for the proper development of the cancer registration and epidemiological research, which are essential for an effective fight against this disease. We want this meeting to be a memorable scientific and social event, and promote the discussion of new ideas and projects, reinforce old collaborations and create new ones among member countries.

Thanks to the effort, talent and enthusiasm of people who work in cancer registries, it is possible to accomplish an important mission in improving cancer control, which is a priority in the global health and development agenda.

We are delighted to welcome you to this meeting in Pamplona to share your knowledge and experiences.

Eva Ardanaz and Marcela Guevara
Organizing Committee of GRELL 2022

COMMITTEES

President of Steering Committee of GRELL	Emanuele Crocetti
Secretary of Steering Committee of GRELL	Pascale Grosclaude
Treasurer of Steering Committee of GRELL	Maria José Sánchez Pérez
Scientific Committee	Emanuele Crocetti (Italy) Pascale Grosclaude (France) María José Sánchez Pérez (Spain) Marcela Guevara (Spain) Eva Ardanaz (Spain)
Workshop Coordination	Dafina Petrova Maria José Sánchez Granada Cancer Registry. Andalusian School of Public Health and Health Research Institute ibs.GRANADA. CIBERESP
Organizing Committee	Eva Ardanaz Marcela Guevara Registro de Cáncer de Navarra. Instituto de Salud Pública y Laboral de Navarra. CIBERESP. IdiSNA

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PROGRAMME

May, 18th

14:00-18:00 h. **WORKSHOP. (Baluarte, Citadel Room, "Sala Ciudadela")**
Title: How do we measure comorbidity in Cancer Registries?

14:00 h. Introduction (Emanuele Crocetti)

14:15 h. Measuring comorbidity and its impact on cancer care and outcomes (Diana Sarfati, University of Otago, Wellington, New Zealand)

14:55 h. Computing comorbidity-adjusted life tables (Sébastien Lamy, Tarn cancer registry, France)

15:20 h. How do we collect and measure comorbidity in cancer registries? (Milena Sant, National Cancer Institute in Milan, Italy).

15:45 h. Coffee break

16:15 h. Methodological challenges on the identification of comorbidities from administrative health data: some experiences from GRELL Countries (Gautier Defossez, Cancer Registry of Poitou-Charentes, France

16:40 h. Comorbidities at diagnosis, survival, and cause of death in patients with chronic lymphocytic leukemia (Rafael Marcos-Gragera, Girona Cancer Registry, Spain)

17:05 h. Comorbidities and survival of lung cancer: A population-based study from French cancer registries. (Arnaud Seigneurin, Isère cancer registry, France)

17:30 h. The use of administrative data on comorbid conditions in cancer research: experiences of the Belgian Cancer Registry (Freija Verdoodt, Belgian Cancer Registry, Belgium)

17:55 h. Discussion

18:15 h. Closing remarks

19:00-20:00 h. **WELCOME COCKTAIL (The Arms Room of the Citadel of Pamplona, "Sala de Armas de la Ciudadela")**

May, 19th

08:30-09:00 h. Registrations of participants

09:00-09:15 h. **CONGRESS OPENING AND WELCOME**

- Santos Induráin. Consejera de Salud del Gobierno de Navarra.
- Mª Angeles Nuin. Directora Gerente del Instituto de Salud Pública de Navarra.
- Emanuele Crocetti. President of GRELL.
- Eva Ardanaz. Navarra Cancer Registry.

09:15-09:25 h. In memoriam of Carmen Martínez (Mª José Sánchez).
In memoriam of Jacques Estève (Pascale Grosclaude).

09:25-09:45 h. **WORKSHOP SUMMARY** (Dafina Petrova) Questions time Diana Sarfati

09:45-10:45 h. **INVITED LECTURE**

Cancer information in the era of precision medicine.

Marina Pollán. Director of the National Center for Epidemiology. Scientific Director of CIBER of Epidemiology and Public Health (CIBERESP). Instituto de Salud Carlos III, Spain

10:45-11:15 h. Coffee break and poster view

11:15-12:15 h. **SESSION 1. SOCIAL INEQUALITIES.**
Chairpersons: Guy Launoy & Rafa Marcos-Gragera

O1- Impact of deprivation on breast cancer survival in French women according to disease stage. Delacôte, Claire; Delacour-billon, Solenne; Ayrault-piault, Stéphanie; Delpierre, Cyrille; Cowpplibony, Anne; Molinie, Florence.

O2- Impact of deprivation on the stage at Diagnosis of Breast Cancer in 50-74 years old French Women. Molinie, Florence; Boyer, Séverine; Delafosse, Patricia; Hammas, Karima;Trétarre, Brigitte; Woronoff, Anne-Sophie; Network, Francim

O3- Can deprivation be adequately measured at the country level with national ecological indices? The case of the French version of the European Deprivation Index (F-EDI). Ophélie, Merville; Ludivine, Launay; Olivier, Dejardin; Quentin, Rollet; Josephine, Bryere; Élodie, Guillaume; Guy, Launoy.

O4- Breast cancer risk and stage at diagnosis in Swiss working women: which occupational and socioeconomic inequalities? Bulliard, Jean-Luc; Bovio, Nicolas; Arveux, Patrick; Bergeron, Yvan; Chiolero, Arnaud; Konzelmann, Isabelle; Maspoli, Manuela; Rapiti, Elisabetta; Guseva-Canu, Irina.

12:15-13:15 h. **SESSION 2. CHILDHOOD AND AYAS CANCER.**
Chairpersons: Gemma Gatta & Antonia Sanchez Gil

O5- Long-Term outcomes in Adolescent and Young Adult Hematological Cancers Survivors. Bernasconi, Alice; Trama, Annalisa; Vener, Claudia; Lasalvia, Paolo; Working Group, Ada.

O6- Stage at diagnosis of childhood and adolescent cancer in Madrid, Spain: A population-based study (2015-2018). López-González, Raquel; Parra-Blázquez, David; Moñino, Daniel; Gavin, Anna; Cañete, Adela; Aitken, Joanne; Pardo, Elena; Ervik, Morten; Soerjomataram, Isabelle; Aragonés, Nuria.

O7- Childhood hematological malignancies in the European Cancer Information System (ECIS): data quality overview over time. Martos, Carmen; Giusti, Francesco; Neamtiu, Luciana; Randi, Giorgia; Flego, Manuela; Nicholson, Nicholas; Dyba,Tadeusz; N Carvalho, Raquel; Dimitrova, Nadya; Bettio, Manola.

O8- National Benchmarking of Childhood Cancer Survival by Stage. Didonè, Fabio; Botta, Laura; Capocaccia, Riccardo; Gatta, Gemma and the BENCHISTA-ITA WG

13:15-14:15 h. Lunch and poster view

14:15-15:30 h. **SESSION 3. OUTCOMES (CANCER SURVIVAL AND QUALITY OF LIFE).**
Chairpersons: Patrick Arveux & Ricardo José Vaamonde

O9- Long-Term Non-Hodgkin Lymphoma Survivors in Côte d'Or: Health-related Quality of life and living conditions. Roudia Wasse, Stephane; Tienhan Dabakuyo-Yonli, Sandrine; Rossi, Cédric; Adnet, Johan; Gauthier, Sophie; Boulanger-Girard, Stephanie; Kueshivi Midodji, Atsou; Assogba, Emerline; Maynadié, Marc.

O10- Trends in net survival from vulvar squamous cell carcinoma in Italy from 1990 to 2015. Zamagni, Federica; Falcini, Fabio; Mancini, Silvia; Baldacchini, Flavia; Giuliani, Orietta; Ravaioli, Alessandra; Vattiato, Rosa; Ferretti, Stefano; Bucchi, Lauro; Working Group, and the AIRTUM.

O11- 5-year survival after a diagnosis of cancers caused by tobacco smoking. Serraino, Diego; Dal Maso, Luigino; Toffolutti, Federica; Ravaioli, Alessandra; Bucchi, Lauro; Guzzinati, Stefano; Falcini, Fabio; Mancini, Silvia; Zamagni, Federica; Working Group, and Italian Cancer Registries.

O12- Accounting for excess mortality from other causes to better estimate cure indicators for cancer patients, open debate. Botta, Laura; Jooste, Valérie; Goungounga, Juste; Colonna, Marc; Rossi, Silvia; Gatta, Gemma; Capocaccia, Riccardo and Childhood Eurocare-6 WG

O13- Survival of patients with colorectal cancer in Navarra (Spain), 1999–2016. A population-based study. Guevara, Marcela; Baztan, Miren; Eciolaza, Maribel; Burgui, Rosana; Ovies, Alberto; Menéndez, Aitziber; Moreno-Iribas, Conchi; Ardanaz, Eva.

15:30-16:00 h. Coffee break and poster view.

16:00-17:00 h. **SESSION 4. QUALITY OF CARE.**
Chairpersons: Andrea Bordoni & Jaume Galceran

O14- The Economic Impact of Rectal Cancer in Italy: results from the Epicost study. Francisci, Silvia; Capodaglio, Giulia; Dal Maso, Luigino; Gigli, Anna; Guzzinati, Stefano; Lopez, Tania; Mallone, Sandra; Pierannunzio, Daniela; Zorzi, Manuel.

O15- Management and Outcome of Young Women (≤40 Years) with Breast Cancer in Switzerland. Schaffar, Robin; Montagna, Giacomo; Rapiti, Elisabetta; Young Women with Breast Cancer; Swiss Working Group.

O16- Cancer survival and travel time to nearest reference care centre for 10 cancer localisations: an analysis of 21 French cancer registries. Gardy, Joséphine; Guizard, Anne-Valérie; Bouvier, Véronique; Launay, Ludivine; FRANCIM group, Alves, Arnaud; Launoy, Guy; Molinié, Florence; Bryère, Joséphine; Dejardin, Olivier.

O17- Profile of acute myeloid leukaemia patients referred to an haematologist during care management: a population-based study in three French specialised registries areas. ATSOU, Kueshivi Midodji; Cédric Rossi; Marie-Lorraine Chretien; Remontet, Laurent; Roche, Laurent; Giogi, Roch; Rachet, Bernard; Helene, Rachou; Laila, Bouzid; Jean-Marc, Poncet; Sophie, Gauthier; Stéphanie, Girard; Johann, Bôckle; Stéphane, Wasse; Sébastien, Orazio; Alain, Monnereau; Edouard, Cornet; Xavier, Troussard; Morgane, Mounier; Marc, Maynadie.

17:00-17:30 h. **GENERAL ASSEMBLY**

Emanuel Crocetti: President of Steering Committee of GRELL

17:30 h. **GRELL STEERING COMMITTEE MEETING** (Only for them)

20:00 h. Social dinner (“Hotel Tres Reyes, Salón Navarra”).

May, 20th

09:00-10:00 h. **SESSION 5. QUALITY REGISTRATION.**
Chairpersons: Sandrine Plouvier & Arantza López de Muniain

O18- Characteristis of FOCO, the new education plan in the National Cancer Registry of Cuba (RNC). Fernández-Garrote, Leticia Maria; Galán Alvarez, Yaima; Haydeé, Bess, Sonia; Vialart Vidal, Niurka; Castañeda, Ileana.

O19- New law for cancer registration in Switzerland: challenges and opportunities after 2 years. Arveux, Patrick; Bulliard, Jean-Luc; Bergeron, Yvan; Bordoni, Andrea; Konzelmann, Isabelle; Maspoli Conconi, Manuela; Rapiti, Elisabetta; Bochud, Murielle.

O20- An updated electronic staging tool for population-based cancer registries: CanStaging+. Isabelle Soerjomataram; Morten Ervik; Sinead Lardner; Joanne Aitken; Andy Gordon; Raquel López-González; Nuria Aragonés; Abigail Jeyaraj; Freddie Bray; Anna Gavin

O21- The AIRTUM standardization program (Stand_AIRTUM) to evaluate and enhance data standardization. Tagliabue, Giovanna; Fusco, Mario; Contiero, Paolo; Mazzucco, Walter; Gatta, Gemma; Serraino,Diego; Vicentini, Massimo; Randi, G.; Stracci, F.; Stand_AIRTUM, working group.

10:00-11:00 h. **SESSION 6. METHOD AND EPIDEMIOLOGY.**
Chairpersons: Paolo Contiero & Miguel Rodriguez Barranco

O22- Endometrial Cancer in Populations of African Descent: a Comparative Study between the US State of Florida and the French Caribbean. Medina, Heidy; Joachim, Clarisse; Deloumeaux, Jacqueline; Macni, Jonathan; Bhakkan, Bernard; Peruvien, Jessica; Schlumbrecht, Matthew; Pinheiro, Paulo.

O23- Bayesian Kernel machine regression for estimating prostate cancer risk of heavy metal mixtures in the EPIC-Spain cohort. Rodriguez Barranco, Miguel; dos Santos Gonçalves, Karen; Fernández-Martínez, Nicolás Francisco; Ubago-Guisado, Esther; Molina-Montes, Esther; Sánchez, María-José.

O24- Effects of attendance to an organized fecal immunochemical test screening program on the risk of colorectal cancer: an observational cohort study. Zamagni, Federica; Baldacchini, Flavia; Giuliani, Orietta; Falcini, Fabio; Mancini, Silvia; Ravaioli, Alessandra; Vattiato, Rosa; Mangone, Lucia; Carrozzi, Giuliano; Bucchi, Lauro.

O25- Combining an epidemiological surveillance system focused on health environment with the French cancer registry Network : is it feasible?. Orazio, Sebastien; Aguida, Caleb; Vaquier, Blandine; Monnereau, Alain.

11:00-11:30 h. Coffee break and poster view.

11:30-12:30 h. **SESSION 7. INCIDENCE AND RECURRENCE.**
Chairpersons: Nancy Van Damme & Marcela Guevara

O26- Hodgkin lymphoma in Brazil: trends in incidence and mortality over four decades. Silveira, Talita; Silva, Diego; Fernandes, Gisele; Candelaria, Leticia; Curado, Maria Paula.

O27- Incidence and trends of marginal zone lymphomas in the province of Girona, 1994-2018. Marcos-Gragera, Rafael; Turon, Estel; Sanvisens, Arantza; Solans, Marta; Marchena, José; Vidal, Anna; Puigdemont, Montse; Castillo, Andrés; Ameijide, Alberto; Auñón, Carme.

O28- Incidence, mortality and trends in cervical cancer in Spain. Galceran, Jaume; Carulla, Marià; Menéndez, Virginia; Rojas, María Dolores; Vizcaino, Ana; Sancho,Patricia; de la Cruz, Marta; Franch, Paula; Gutiérrez, Pilar; Working Group, REDECAN

O29- Invasive women breast cancer recurrence rate in Southern Switzerland: a population-based study 2000-2020. Ortelli, Laura; Spitale, Alessandra; Rossi, Samuela; Mazzola, Paola; Peverelli, Simona; Bordoni, Andrea.

12:30-13:30 h. Lunch and poster view

13:30-14:30 h. **SESSION 8. OTHER EPIDEMIOLOGICAL STUDIES.**
Chairpersons: Yaima Galan & Carmen Martos

O30- Histopathologic characteristics and incidence trends of testicular cancer in a south-eastern Spanish region along a 36 years period. Vaamonde-Martín, Ricardo José; Rodríguez-Pérez, Silvia; Sánchez-Gil, Antonia; Ballesta-Ruiz, Mónica; Tortosa-Martínez, Jacinta; Garrido-Gallego, Sandra; Sánchez-Lucas, Maria José; Expósito-Castro, Mercedes; Chirlaque-Lopéz, Maria Dolores.

O31- Breast, cervical and colorectal cancer: recovery after important COVID-19 related decline in incident cases of precancerous lesions and cancers in the screening target population in Belgium. Van Herck, Koen; Janssens, Sharon; Haelens, Annemie; Truyen, Inge; De Schutter, Harlinde; Francart, Julie.

O32- COVID-19 multimorbidity score in cancer patients using Italian administrative databases. Lasalvia, Paolo; Bernasconi, Alice; Trama, Annalisa; Franchi, Matteo.

O33- Cancer and pregnancy. Estimates in Italy from record-linkage procedures between Cancer Registries and Hospital Discharge database. Pierannunzio, Daniela; Maraschini, Alice; Francisci, Silvia; Donati, Serena; Lopez, Tania; Stracci, Fabrizio; Giovanni Scambia

14:30-14:45 h. **PRESENTATION THE 2023 GRELL MEETING.**

14:45-15:00 h. **AWARD** for the best oral communications and poster for young people.

15:00-15:10 h. **MEETING CLOSING**

Marcela Guevara. Navarra Cancer Registry

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Session 1
SOCIAL INEQUALITIES

S1-O01 IMPACT OF DEPRIVATION ON BREAST CANCER SURVIVAL IN FRENCH WOMEN ACCORDING TO DISEASE STAGE

Delacôte, Claire (1), Delacour-Billon, Solenne (2), Ayrault-Piault, Stéphanie (2), Delpierre, Cyrille (3), Cowppli- Bony, Anne (4), Molinie, Florence (4)

(1) Loire-Atlantique/Vendée Cancer Registry, Nantes, France / SIRIC ILIAD INCa-DGOS-Inserm_12558, CHU Nantes, Nantes, France. (2)Loire- Atlantique/Vendée Cancer Registry, Nantes, France / French Network of Cancer Registries (FRANCIM), Toulouse, France. (3) UMR 1295, Université Toulouse III, Inserm, Equipe EQUITY, Equipe constitutive du CERPOP, Toulouse, France. (4) Loire-Atlantique/Vendée Cancer Registry, Nantes, France / SIRIC ILIAD INCa-DGOS-Inserm_12558, CHU Nantes, Nantes, France / French Network of Cancer Registries (FRANCIM), Toulouse, France / UMR 1295, Université Toulouse III, Inserm, Equipe EQUITY, Equipe constitutive du CERPOP, Toulouse, France,

OBJECTIVES: Socioeconomic deprivation has been associated with lower breast cancer (BC) survival, but the influence of stage on this association merits further study. In particular, the link between deprivation, stage and BC survival may vary according to country and health system. Our aim was to investigate this link in French women.

METHODS: 12,738 women diagnosed with invasive breast carcinoma between 2008 and 2015 and registered in Loire- Atlantique/Vendee Cancer Registry (France) were included in the study. Deprivation was measured by the French European Deprivation Index. Excess hazard and net survival were estimated for deprivation level, stage and age at diagnosis using a flexible excess mortality hazard model.

RESULTS: Women living in the most deprived areas had a 60% (22%-109%) higher excess mortality hazard compared to women living in the least deprived areas.

After adjustment by stage, the effect of deprivation on BC survival was attenuated but remained. Women living in the most deprived areas had a 25% (-3%; +62%) higher excess mortality hazard compared to those living in the least deprived areas.

Hence, the 5-year stage-adjusted net survival rates were significantly lower in the most deprived women than in the least deprived women, respectively 88.2% (85.2%-90.5%) and 92.5% (90.6-93.9%), corresponding to an overall survival gap of 4.3%. Interestingly, the 5-year net survival gap increased with stage: from 0.5% in stage I to 10% in stage IV.

This deprivation effect did not depend on age at diagnosis nor on time elapsed after diagnosis.

CONCLUSIONS: Despite French universal access to cancer care, deprivation was associated with poorer overall and stage-specific BC net survival regardless age at diagnosis. Our results support both the need for interventions to increase early diagnosis among the most disadvantaged women, but also for a better understanding of the remaining social disparities to implement more relevant interventions.

S1-O02 IMPACT OF DEPRIVATION ON THE STAGE AT DIAGNOSIS OF BREAST CANCER IN 50-74 YEARS OLD FRENCH WOMEN

Molinie, Florence (1), Boyer, Séverine (2), Delafosse, Patricia (3), Hammas, Karima (4), Trétarre, Brigitte (5), Woronoff, Anne-Sophie (6), Network, Francim

(1) Loire-Atlantique/Vendée cancer registry, (2) Haut-rhin cancer registry, (3) Isère cancer registry, (4) Haut-Rhin cancer Registry, (5) Hérault cancer registry, (6) Doubs cancer Registry

OBJECTIVE: Organized screening program (OSP) for breast cancer was extended to the whole of France in 2004. It aims to reduce mortality and aggressive treatments thanks to earlier diagnosis, and to reduce social inequalities thanks to free access to the OSP. Objective was to compare the stage distribution at diagnosis according to the diagnostic circumstance and to the socio- economic status of women.

METHOD: A representative sample of in situ and invasive breast carcinomas diagnosed in women aged 50-74 years between 2009 and 2015 was randomly selected from French cancer registries. Locally advanced, regional and metastatic condensed ENCR stages were considered as « advanced » stage compared to local ENCR stage considered as “early” stage. Socio-economic status was approximated by an ecological indicator of deprivation (French-European Deprivation Index). Diagnostic circumstance was defined after cross-referencing databases of both registries and screening structures as: cancer discovered through the OSP, interval cancer, and cancer diagnosed without participation in OSP within the 2 years preceding the diagnosis. A hierarchical logistic regression model was performed to account for possible differences between departments covered by the registries.

RESULTS: Of the 6 397 cancers included, 11.2% were in situ. 71.6% of women participated in OSP within the 2 years preceding the diagnosis, and 17.3% of them had interval cancer. Breast cancers were more often diagnosed at an early stage in women who participated in OSP compared to women who did not participate (74.0% vs 56.3%; $p<0.001$). The distribution of stage for interval cancers was intermediate between those of cancers discovered through OSP and cancers in women who did not participate to OSP.

Among the 5 678 invasive cancers, the risk of being diagnosed at an advanced stage increased of 22% in women residing in the most deprived areas compared to those residing in the least deprived areas This relation persisted after adjustment for the circumstance of diagnosis, age and department of residence (OR=1.20 [IC95% 1.01-1.44]).

CONCLUSION: Despite free access to the organized screening program in France, social disparities were highlighted with cancers more often diagnosed at an advanced stage in women living in most deprived areas.

S1-003 CAN DEPRIVATION BE ADEQUATELY MEASURED AT THE COUNTRY LEVEL WITH NATIONAL ECOLOGICAL INDICES? THE CASE OF THE FRENCH VERSION OF THE EUROPEAN DEPRIVATION INDEX (F-EDI).

Ophélie, Merville (1), Ludivine, Launay (1), Olivier, Dejardin (1), Quentin, Rollet (1), Josephine, Bryere (1), Élodie,Guillaume (1), Guy, Launoy (1)

(1) U1086 "ANTICIPE" INSERM, University of Caen Normandy

OBJECTIVES: There are a growing number of studies of social health inequalities in cancer that use ecological indices of deprivation. The use of such indices is particularly appropriate for studies based on databases with few socio-economic data, such as registry data. However, most of the ecological indices of deprivation are constructed from census data at the national level, which raises questions about the relevance of their use, and their comparability across a country. We aimed to determine whether a national index can account for deprivation regardless of location characteristics in order to guide the use of such indices by researchers and policy makers.

METHODS: In Metropolitan France, 43,853 residential census block groups (IRIS) were divided into eight types of areas based on quality of life. We calculated score deprivation for each IRIS using the French version of the European Deprivation Index (F- EDI). We calculated the mean score at IRIS level and the inter-IRIS heterogeneity according to the type of area. We then decomposed the score by calculating the contribution of each of its components by area type, and we assessed the impact of removing each component and recalculating the weights on the identification of deprived IRIS (calculation of Kendall's tau-b correlation coefficients).

RESULTS: The most urbanised areas concentrated the most deprivation and the most inter-IRIS heterogeneity. The set of components most contributing to the score changed according to the type of area, but the identification of deprived IRIS remained stable regardless of the component removed for recalculating the score (K>0.83, except for the "single-parent household" component).

CONCLUSIONS: Not all components of the F-EDI are markers of deprivation according to location characteristics, but the multidimensional nature of the index ensures its robustness. National ecological indices of deprivation are essential for intra- national comparisons but there is a need for more validation studies to test the robustness of existing indices. Validation of the different national versions of the EDI would provide a strong case for the use of this tool, which is particularly suited to intra- European comparisons.

S1-O04 BREAST CANCER RISK AND STAGE AT DIAGNOSIS IN SWISS WORKING WOMEN: WHICH OCCUPATIONAL AND SOCIOECONOMIC INEQUALITIES?

Bulliard, Jean-Luc, Bovio, Nicolas (1), Arveux, Patrick (1), Bergeron, Yvan (2), Chiolero, Arnaud (3), Konzelmann, Isabelle (4), Maspoli, Manuela (5), Rapiti, Elisabetta (6), Guseva-Canu, Irina (1)

(1) Center for Primary Care and Public Health (Unisanté), University of Lausanne, (2) Fribourg Cancer Registry, (3) Valais Health Observatory, (4) Valais Cancer Registry, (5) Neuchâtel and Jura Cancer Registries, (6) Geneva Cancer Registry, University of Geneva

OBJECTIVES: Socioeconomic inequalities in breast cancer incidence have largely been ascribed to differences in lifestyle, including healthcare use, and occupational exposure, with women of higher socioeconomic status (SES) being at higher risk and higher hazard of a breast cancer diagnosed at an early stage. However, whether occupational factors impact breast cancer risk and stage at diagnosis when accounting for SES remains unclear. We aimed at assessing the relationships between occupation-related variables and breast cancer incidence and stage at diagnosis when considering SES.

METHODS: We included all women aged 18-65 years who resided in western Switzerland (French-speaking cantons of Fribourg, Geneva, Jura, Neuchâtel, Vaud and Wallis) in the 1990 or 2000 census, with known occupation. Probabilistic linkage with records of five cancer registries identified all primary invasive breast cancer cases diagnosed between 1990 and 2014 in this region. Using breast cancer incidence rate in the whole female population as reference, standardized incidence ratios (SIRs) were computed by four occupation-related variables, with statistical correction for multiple comparisons. Associations between occupational variables and breast cancer incidence and stage at diagnosis were analysed by negative binomial and multinomial logistic multivariate regression models, respectively.

RESULTS: The cohort included 381,873 women-years, with a mean follow-up of 14.7 years, and 8,818 malignant breast cancers. SIRs significantly above 1 were observed in six occupational groups predominantly associated with a high socioprofessional level that required highly skilled women (legal professionals; legislators, senior officials and managers; secondary education teachers; social science, finance and sale, and clerical workers), and a SIR statistically below 1 was found for cleaners and building caretakers. Gradients in breast cancer risk with skill and socioprofessional levels persisted after accounting for SES. A higher incidence was generally associated with a higher probability of an early stage breast cancer.

CONCLUSIONS: SES and occupation may contribute independently to differences in risk and stage-specific risk of breast cancer. Further work is warranted to elucidate mechanisms by which SES can affect the risk and stage at diagnosis of breast cancer beyond occupational exposure, as well as the role of biology and healthcare use in this association.

S1-P01 DISPARITIES ON PANCREATIC CANCER MORTALITY TRENDS AND HUMAN DEVELOPMENT INDEX (HDI) IN BRAZIL

Silva, Diego (1), Oliveira, Max (2), Fernandes, Gisele (3), Curado, Maria Paula (3)

(1) Postgraduate Program in Epidemiology, School of Public Health, University of São Paulo, São Paulo, (2) Department of Public Health, Institute of Tropical Diseases and Public Health, Federal University of Goias, (3) Group of Epidemiology and Statistics on Cancer, A.C.Camargo Cancer Center, São Paulo

OBJECTIVE: The aim of this study was to assess pancreatic cancer mortality rates and trends related to Human Development Index (HDI) in Brazil by state.

METHODS: An ecological study was carried out on pancreatic cancer mortality in Brazilian states between 1979 and 2019. Mortality data was extracted from Mortality Information System publicly available. Age-standardized mortality rates (ASMR) and Annual Average Percent Change (AAPC) were calculated. Pearson´s correlation test was applied to compare rates in 3 periods for 10 years around the HDI, the rates for the period 1986-1995 for the HDI 1991, 1996-2005 for the HDI 2000 and 2006-2015 for the HDI 2010, considering that the higher the correlation is, the higher the increase is; and the percentage difference in HDI from 1991 to 2010 versus AAPC.

RESULTS: A total of 209,425 deaths from pancreatic cancer were reported in Brazil from 1979 to 2019. In men, the rates ranged from 2.9 in 1979 to 6.1/100,000 in 2019, with AAPC of 1.5% per year, and in women, from 2.1 in 1979 to 4.7/100,000 in 2019, with AAPC of 1.9% per year. There were trends increase in all states, with highest trends was observed in North and Northeast regions. Mortality rates and trends increase with higher percentage of HDI improvement with a correlation positive ($r>0.80$) between rates and HDI. A positive correlation also was observed between AAPC and an improvement in the HDI, which was $r=0.75$ ($p<0.05$) for men and $r=0.78$ ($p<0.05$) for women.

CONCLUSIONS: Pancreatic cancer trends were uneven increase in mortality in Brazil, there was an increase trend in mortality in both sexes, but higher among women. Mortality rates remain higher in South, Southeast and Central-West of Brazil. However, pancreatic cancer mortality trends were higher in the states of the North and Northeast regions, where there was the greatest increase in the HDI in the last 40 years.

S1-P02 INEQUALITIES IN PANCREATIC CANCER MORTALITY IN 16 LATIN AMERICA COUNTRIES

Silva, Diego (1), Oliveira, Max (2), Fernandes, Gisele (3), Curado, Maria Paula (3)

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OBJECTIVE: The objective of this study was to describe pancreatic cancer mortality rates and trends correlated with the Human Development Index (HDI) in Latin America.

METHODS: Mortality data were obtained for 16 American Latin countries from the World Health Organization database publicly available, between 1997 and 2019, which represented approximately 90% of the population in Latin America. Age-standardized mortality rates (ASMR) and Annual Average Percent Change (AAPC) were calculated. Pearson´s correlation test was applied to compare rates for all period and HDI in 2010, the same was applied for AAPC and HDI in 2010.

RESULTS: The highest mortality rates from pancreatic cancer was observed in Uruguay (9.2 in men and 6.4/100,000 in women) while the lowest was in El Salvador (1.9/100,000 in both sexes). There was no clear pattern in the mortality trend of the 16 Latin American countries studied, for all ages, increasing trends were observed in seven countries (Brazil, Chile, Colombia, El Salvador, Nicaragua, Paraguay and Uruguay) in men, which El Salvador had the highest increase trend about 2.9% per year (CI95% 1.0; 4.9). For women, increasing trends was observed in Argentina, Brazil, Chile, El Salvador, Nicaragua, Paraguay and Uruguay, which the highest in Paraguay of 2.3% per year (CI95% 1.4; 3.3). Decrease only was identified in Mexico of -0.7% per year (CI95% -1.0; -0.4) for men and -0.8% per year (CI95% -1.0; 0.6) for women. A positive correlation was observed between pancreatic cancer mortality rates and HDI in 2010 in both sexes ($r = 0.71$, $p = 0.002$ in men, and $r = 0.76$, $p < 0.001$ in women) which the highest rates were observed the countries with the highest HDI. AAPC was negatively correlated with the HDI in men ($r = -0.58$, $p = 0.018$), reflecting a greater increase in those with lower HDI, in women this correlation wasn't statistically significant.

CONCLUSIONS: Mortality trends are heterogeneous across Latin American countries. The heterogenous profile observed may be due to differences in data quality, coverage and improvement in death notifications among countries with a lower HDI, in addition to the increase in the HDI, which also suggest changes in lifestyle.

S1-P03 MORTALITY BY SOCIOECONOMIC LEVEL OF LUNG, COLON-RECTAL AND BREAST CANCERS IN SPAIN

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OBJECTIVES: Ecological studies have shown socioeconomic inequalities in all-cause mortality in Spain but little is known about socioeconomic differences in cancer mortality. The objective of this study is to evaluate the relationship between socioeconomic level and mortality from three of the most frequently diagnosed cancers in Spain: colorectal, lung and breast.

METHODS: All deaths from colorectal, lung and breast cancer (only in women) during the period 2010-2014 in Spain were included. Each death was assigned the deprivation index of the census tract of residence at the time of death. Mortality data is from the National Institute of Statistics, and the deprivation index was created by the Spanish Society of Epidemiology using the 2011 census.

Crude and age-standardized rates were computed for each anatomical location and quintile of deprivation, considering the 2013 European standard population (ASR-E). Mortality was analysed by sex, province, age group, and year.

RESULTS: 211,357 deaths were observed, distributed in 44.7 deaths from lung cancer per 100,000 inhabitants, 32.4 from colorectal cancer, and 26.1 from breast cancer. Deaths from lung and colorectal cancer were more frequent in men than in women (ASR-E ratio: 5.9 and 2.1, respectively).

Most affluent women had higher mortality from lung cancer and breast cancer, compared with women in the most deprived group, with a clear gradient between the different quintiles of deprivation. The pattern is reversed for lung cancer in men, where the highest mortality occurs in men of lower socioeconomic levels.

In three out of four Spanish provinces, higher mortality from lung cancer was found among men from the lowest socioeconomic level compared to those from the highest level. Overall, the provinces where this gap was most significant were areas bordering the Mediterranean Sea.

Socioeconomic inequalities in lung cancer mortality are seen from 40 years for men and 50 years for women. For breast cancer, the mortality gap between socioeconomic levels is accentuated after 65 years.

CONCLUSIONS: We have found differences in mortality by socioeconomic level, especially for lung and breast cancers. The analysis of cancer mortality considering the socioeconomic level provides additional information on the impact of this disease from the most disadvantaged to the highest social classes. Periodic monitoring of cancer mortality by socioeconomic level can allow a better evaluation of public health policies that try to reduce social inequalities in cancer health outcomes in Spain.

Funding: HiReSIC (AECC, PROYE20023SÁNC). Subprograma VICA, (CIBERESP, ISCIII). ISCIII PI18/01593 EU/FEDER.

S4-P04 SOCIO-ECONOMIC INEQUALITIES IN LUNG CANCER OUTCOMES: AN OVERVIEW OF SYSTEMATIC REVIEWS

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OBJECTIVES: In the past decade, evidence has accumulated about socio-economic inequalities in very diverse lung cancer outcomes. To better understand the global effects of socio-economic factors in lung cancer, we conducted an overview of systematic reviews.

METHODS: Four databases were searched for systematic reviews reporting on the relationship between measures of socio-economic status (SES) (individual or area-based) and diverse lung cancer outcomes including epidemiological indicators and diagnosis- and treatment-related variables. AMSTAR-2 was used to assess the quality of the selected systematic reviews.

RESULTS: Eight systematic reviews based 220 original studies and 8 different indicators were identified. Compared to people with high SES, people from lower SES appear to be more likely to develop and die from lung cancer. People from lower SES also have lower cancer survival, most likely due to lower likelihood of receiving both traditional and next-generation treatments, higher rates of comorbidities, and higher likelihood of being admitted as emergency. People from lower SES are generally not diagnosed at later stages but this may change after broader implementation of lung cancer screening, as early evidence suggests that there may be socio-economic inequalities in its use.

CONCLUSIONS: There are pervasive socio-economic inequalities in lung cancer incidence, mortality, and survival documented in both studies using individual-level indicators and studies using area-level indicators.

FUNDING: High resolution study of social inequalities in cancer (HiReSIC), Asociación Española Contra el Cáncer (AECC) (PROYE20023SÁNC). Subprograma de Vigilancia Epidemiológica del Cáncer (VICA), del CIBER de Epidemiología y Salud Pública (CIBERESP), Instituto de Salud Carlos III (ISCIII).

S1-P05 SOCIO-TERRITORIAL INEQUITIES IN THE FRENCH NATIONAL BREAST CANCER SCREENING PROGRAMME—A CROSS-SECTIONAL MULTILEVEL STUDY

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BACKGROUND. France implemented in 2004 the French National Breast Cancer Screening Programme (FNBCSP). Despite national recommendations, this programme coexists with non-negligible opportunistic screening practices.

OBJECTIVE. Analyse socio-territorial inequities in the 2013–2014 FNBCSP campaign in a large sample of the eligible population.

METHODS. Analyses were performed using three-level hierarchical generalized linear model. Level one was a 10% random sample of the eligible population in each département (n = 397,598). For each woman, age and travel time to the nearest accredited radiology centre were computed. These observations were nested within 22,250 residential areas called "Îlots Regroupés pour l'Information Statistique" (IRIS), for which the European Deprivation Index (EDI) is defined. IRIS were nested within 41 départements, for which opportunistic screening rates and gross domestic product based on purchasing power parity were available, deprivation and the number of radiology centres for 100,000 eligible women were computed.

RESULTS. Organized screening uptake increased with age (OR1SD = 1.05 [1.04–1.06]) and decreased with travel time (OR1SD = 0.94 [0.93–0.95]) and EDI (OR1SD = 0.84 [0.83–0.85]). Between départements, organized screening uptake decreased with opportunistic screening rate (OR1SD = 0.84 [0.79–0.87]) and départements deprivation (OR1SD = 0.91 [0.88–0.96]). Association between EDI and organized screening uptake was weaker as opportunistic screening rates and as département deprivation increased. Heterogeneity in FNBCSP participation decreased between IRIS by 36% and between départements by 82%.

CONCLUSION. FNBCSP does not erase socio-territorial inequities. The population the most at risk of dying from breast cancer is thus the less participating. More efforts are needed to improve equity.

S1-P06 GEOGRAPHICAL DIFFERENCES IN CANCER PROGNOSIS: ITALY, 2010-2018

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OBJECTIVES. A disadvantage in cancer survival in patients living in southern Italy was observed in the last decades . The aim of this study was to update internal comparisons of cancer survival in Italy.

METHODS. Data from seventeen population-based cancer registries, representing 31% of the Italian resident population were included. 479144 cases diagnosed in subjects 15+ years old between 2010 and 2014 with active follow-up up to the end of 2018 were analysed. Observed, net age-standardized survival at 1, 5 years and at 5 years since diagnosis conditioned to having survived the first year were computed.

RESULTS. Overall, for men 5-year net survival was 58.7% (IC 57.9-59.5) in the North-Centre and 55.1% (52.1-57.8) in the South and for women 70.1% (69.3-70.9) and 66.2 (63.2-68.9), respectively. The disadvantage for the South was substantially present for all the cancer sites regardless of gender, age and prognosis. For example, among men for prostate (91.4% vs 87.3%), or non- Hodgkin lymphoma (67.6% vs 60.2%) or among women for breast (88.0% vs 84.7%) or leukaemia (47.7% vs 39.9%). Most of the differences were present also in observed survival, as well as in the other computed survival estimates.

CONCLUSIONS. The study confirmed a cancer survival gap in Italy with a worse prognosis for citizens residing in the South. The difference does not seem lessened from the past. Many factors related to cancer diagnosis and treatment may contribute to survival, and therefore their geographical unfair distribution explain the evidenced difference. However, in Italy there is a public universalistic health system. Results of the present study suggested that there is no equal access in the country to preventive-diagnostic- therapeutic oncological pathways of equivalent quality. Among the possible determinants it should be considered that socio- economic inequality is more common in the South than in the other Italian areas.

S1-P07 DEPRIVATION AND SEVERITY OF PROSTATE CANCER STUDY IN THE TARN FROM 2008 TO 2018.

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(1) Tarn cancer Registry Albi

OBJECTIVES: For most cancers, the incidence is higher in deprived areas than in advantaged areas. In the case of prostate cancer, as for other screened cancers, the opposite is observed: the incidence is higher in advantaged areas, which probably corresponds to more extensive screening, leading to greater over-diagnosis among the most advantaged men. As PSA screening has been decreasing for the last ten years, we investigated how this phenomenon is reflected in the distribution of prognostic markers in the population according to its level of deprivation.

MATERIAL & METHOD: We studied all cancers diagnosed in the Tarn from 2008 to 2018 (N= 3895). We used 3 prognostic indicators: Clinical stage (T1-T2 vsT3-4 or N+ or M+), Gleason scores (<=8, >=9), PSA level (<20ng/ml, >=20ng/ml), and an indicator combining the previous ones corresponding to having at least one pejorative element. Missing data represent between 4 and 5% of cases. The level of deprivation is measured by the EDI (European Deprivation Index) divided into quintiles. Three periods have been defined : 2008-11; 2012-14; 2015-18. The analysis was performed by age-adjusted logistic regression.

RESULTS: Living in an area belonging to the most deprived quintile is always associated with a higher risk of having a worse prognosis cancer at diagnosis, but this association is partly related to age (older patients more often residing in more deprived areas). The risk slope associated with deprivation decreases steadily between the 2008-11 and the 2015-18 periods whatever the indicator used.

CONCLUSIÓN: We find an association reported by other studies between prostate cancer severity and deprivation. However, our results show that this phenomenon decreases for the recent period (2015-2018). These results may reflect a shift in PSA screening practices (decrease in advantaged men, due to fear of overdiagnosis, or increase in deprived men). They should be confirmed by other data from other regions or by studies directly related to the consumption of screening.

Session 2

CHILDHOOD AND AYAS CANCER

S2-005 LONG-TERM OUTCOMES IN ADOLESCENT AND YOUNG ADULT HEMATOLOGICAL CANCERS SURVIVORS

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OBJECTIVES: Increased success in the treatment of hematological cancers contributed to the increase of 5-year survival for most adolescent and young adults (AYAs, 15-39 years at first cancer diagnosis) with these tumours. However, as 5-year survival increased, it became clear that AYA long-term survivors were at increased risk for severe late effects (e.g. secondary neoplasms and comorbidities). Population-based Cancer Registries (CRs) can access to several different data sources (e.g. hospital discharge records, mortality files) and collect information on cancer patients' long-term comorbidities, thus, CR data are a unique opportunity for studies focused on long-term impact of cancer. In this context, we aimed to assess long-term outcomes on AYA survivors of hematological cancers in Italy.

METHODS: Taking advantage of the Italian cohort of AYA cancer survivors (i.e. alive at least 5 years after cancer diagnosis), based on more than 30 CRs, we selected patients diagnosed with a first primary hematological cancer between 1997 and 2006. Long-term outcomes of interest were: second malignant neoplasms (SMNs), hospitalizations and overall mortality. To assess the excess risk of long-term comorbidities and mortality, we calculated standardized incidence ratios (SIRs), standardized hospitalization rate ratios (SHRs) and standardized mortality rate ratios (SMRs). To study morbidity patterns over time, we modelled observed incidence rates by fitting flexible parametric models for nonlinear patterns and we used linear regression for linear patterns.

RESULTS: The study cohort included 5,042 AYA hematological cancer survivors of which 1,237 and 3,805 had a leukaemia and lymphoma diagnosis, respectively. AYA survivors were at substantially increased risk for SMN (SIR=2.1; 95%CI=[1.7;2.6]), hospitalisation (SHR=1.5; 95%CI=[1.5;1.6]), and mortality (SMR=1.4; 95%CI=[1.2;1.6]) with differences between leukaemia and lymphoma survivors. The highest excess risks of hospitalisations were for infectious diseases, respiratory diseases, and diseases of blood and blood-forming organs. The morbidity pattern differs over time by morbidity type.

CONCLUSIONS: Our results support the need for strict follow-up plans for survivors and call for further study to better personalised follow-up plans for AYA cancer survivors, understanding the potential causes of late effects (e.g. treatment). Furthermore, because cancer in AYA is rare, international collaborations are essentials to strengthen and improve external validity of the evidence on these patients.

S2-006 STAGE AT DIAGNOSIS OF CHILDHOOD AND ADOLESCENT CANCER IN MADRID, SPAIN: A POPULATION-BASED STUDY (2015-2018).

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OBJECTIVE: To describe the distribution of cases by stage at diagnosis of tumors diagnosed in children and adolescents in Madrid, Spain.

METHODS: Data was abstracted from the Pediatric Population-Based Cancer Registry of Madrid, which covers 14.7% of the Spanish population under 20 years old. We included all malignant neoplasms and non-malignant central nervous system (CNS) tumors diagnosed at the age 0-19 years old in 2015-2018. Expert reviewers manually extracted information from electronic medical records and assigned stage at diagnosis using the CanStaging+ tool for calculation of the tier2 of the Toronto Childhood Cancer Stage Guidelines, which include disease-specific staging systems for 16 tumor types.

RESULTS: There were 635 eligible tumors and tier2 staging criteria was successfully assigned to 556 cases (87.6%). The groups with the highest proportion of staged cases were retinoblastomas (100%) and Hodgkin lymphomas (96.3%); the groups with the lowest were ovarian cancers (60.0%) and Ewing sarcomas (76.5%).

Among staged lymphoblastic leukemias, the percentage of cases with no CNS involvement was 89.7%, similar to that of myeloblastic leukemias (84.4%). The most frequent stages among Hodgkin lymphoma cases were IIA (46.2%) and IA (12.8%), while non-Hodgkin cases were mainly diagnosed at stage III (38.7%) and stage II (30.6%). Neuroblastoma cases presented the highest percentage of metastasis at diagnosis (34.2% metastatic, 7.9% MS stage for children under 18 months old). Wilms tumors were mainly staged with the SIOP protocol (77.8% received chemotherapy prior to surgery) and the rest with COG protocol: the ones staged with SIOP protocol were mainly stage y-I (66.7%) while the ones staged with COG protocol were mainly stage IV (also 66.7%). Rhabdomyosarcomas were mainly diagnosed at stage I (71.4%) as were half of non- rhabdomyosarcoma soft tissue sarcomas (50.0%). Bone sarcoma cases were mostly diagnosed at a localized stage (81.3% osteosarcomas and 73.1% Ewing sarcomas) as were the whole hepatoblastoma cases (100%). Children with retinoblastoma were mainly diagnosed at stage 0 (57.1%). Gonadal tumors were mostly diagnosed at stage I (60.0% testicular and 83.3% ovarian). Lastly, CNS neoplasms were predominantly diagnosed at stage M0 (medulloblastomas 78.6% and ependymomas 100%).

CONCLUSIONS: Most neoplasms in children and adolescents were diagnosed at an early stage. This study provides important information for pediatric oncologists and allows comparisons over time and across populations. It also highlights the feasibility of the CanStaging+ tool to determine the stage according to the Toronto Guidelines, which facilitates standardization and comparability of cancer staging internationally.

S2-007 CHILDHOOD HAEMATOLOGICAL MALIGNANCIES IN THE EUROPEAN CANCER INFORMATION SYSTEM (ECIS): DATA QUALITY OVERVIEW OVER TIME

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(1) European Commission's Joint Research Centre

OBJECTIVES. Haematological malignancies (HMs) are the most frequent childhood tumours, accounting for around 40% of them.

Computation and dissemination of reliable indicators to monitor cancer burden is among the goals of the European Cancer Information System (ECIS), developed and maintained by the European Commission's Joint Research Centre (JRC) and based on the European Network of Cancer Registries (ENCR) member's data

The study objectives are to analyse data quality of HMs in children (aged 0-19) and to identify geographical and temporal variations of quality indicators.

METHODS. Data were collected from childhood-specific and general European CRs with at least 5 years of incidence via the 2015 data call. Childhood CRs were prioritised when their areas overlapped with general CRs.
Internal consistency and multiple primary tumours (MPTs) were checked through the JRC-ENCR Quality Check Software.

Tumours were coded according to ICCC-3.

Percentage of errors/warnings for morphology/topography combinations and MPTs were obtained.

Microscopically verified tumours (MV%), death certificate only (DCO) and unspecified morphology (UM%) percentages were calculated.

RESULTS. A total of 110,841 HMs from 111 CRs (32 countries) were analysed, accounting for 40% of all childhood tumours in 1999-2003 and 2009-2013. The lowest and the highest proportions were found in Italian CRs.

Topography/morphology combinations errors/warnings decreased from 11% in 1999-2003 to 9% in 2009-2013. The percentage of CRs without these errors/warnings increased from 14% to 29% in the two periods (range 0%-50%).

The proportion of errors/warnings for MPTs was low (0.3%) in all CRs.

MV% for HMs was >95% in both periods, with the lowest values for diagnostic subgroups Ie and IIe. Only 8 CRs had DCOs.

UM% decreased from 3.2% in 1999-2003 to 1.9% in 2009-2013. A huge variability was found among CRs in both periods (UM% range 0.1%-18%).

CONCLUSIONS. The selected quality indicators are good in the European CRs. An improvement was observed between the two analysed periods. DCO% isn't an appropriate indicator to identify data quality differences for HMs in children among European CRs, because for most of them the value is zero. Geographical and temporal differences were found for the UM%.

S2-O08 NATIONAL BENCHMARKING OF CHILDHOOD CANCER SURVIVAL BY STAGE

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OBJECTIVES. The National BENCHISTA study collects data from Italian population-based cancer registries (CRs) to compare tumour stage distribution and survival in selected solid cancers among children stimulating the application of the Toronto Consensus Staging Guideline (TG). We aim to understand why there are differences in survival from childhood cancer within Italy and within Europe. Also, a feasibility of the linkage between CRs and national clinical registries to encourage a permanent collaboration aimed at epidemiological surveillance and performing outcome research.

METHODS. We will collect data on all incident cases of nine of the most common solid childhood cancers. The cases collected have to be diagnosed in a consecutive three-years period within 2013 and 2017. The CRs will collect information on demographic variables, examinations performed, data sources used by registrars for staging and stage according to TG. Moreover, a feasibility study to test the completeness of incidence and clinical information as stage, non stage prognostic factors, treatment, relapse/progression, hospitalization, causes of death and date of last follow-up will be performed by linking CRs and national Clinical Data Bases.

RESULTS. Rare cancers like the paediatric ones require high participation to provide clear results. Thanks to the excellent synergy and collaboration emerged in the BENCHISTA International team and in the working group of the JARC pilot European project we reach almost all Italian CRs. So far 28 CRs have ensured to participate. We expect to collect about 1400 cases of childhood cancer based on the estimates of the EUROCARE study. From a first attempt to link the Italian Neuroblastoma database and the data from a paediatric regional CR we expect that a large percentage of cases collected from CRs can be identified within the specialized national clinical registers. We will analyze the gain of clinical variables and incidence completeness for both datasets.

CONCLUSION. This study will be the first to promote and enhance the collection of Toronto Guideline stage for childhood cancer by Italian CRs. To improve working relationships between cancer registries, clinical services, and cancer specific clinical study groups is crucial to improving patient outcomes and stimulating research.

S2-P08 INCIDENCE AND SURVIVAL OF MALIGNANT TUMORS IN CHILDREN OF THE BASQUE COUNTRY

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OBJECTIVE: The aim of this study is to analyse trends in incidence and survival of children with malignant tumors in the Basque Country.

METHODS: Cases (malignant only) were drawn from the Basque population-based cancer registries. Incidence was estimated for the period 1986-2017 and rates were calculated as the average annual number of cases per 1.000.000 person-year. Cases were followed-up until 31-12-2020 and observed survival rates to 1, 3 and 5 years were estimated with Kaplan-Meier. Incidence was estimated for the whole period and survival from 1996 to 2015 by sex, age group and period.

RESULTS: During the study period 1,529 cases of childhood cancers were diagnosed, 57% in boys, with annual rates per million of 174.7 and 137.3 for males and females respectively. The rates ranged from 130 (1996) to 205 (2007) per million (not significant). Leukaemia, the most frequent malignancy in children, accounted for 32% of all tumors; Central Nervous System (CNS) malignancies where the second in frequency (16%), followed by lymphomas (15%). Neuroblastoma was the most common malignant tumor (37%) during the first year of life, while leukaemias were the most frequent (34%) from 1 to 14 years of age. Girls had better survival (log-rank 0.069). Survival of all children diagnosed with cancer in the period 1996-2015 was 88.6% at 1 year from diagnosis and decreased to 77.8% at 5 years. In the latest period (2006-2015), lymphoma presented the highest survival (96, 5%), followed by Epithelial carcinomas and Renal tumors (5-years survival: 90.9 %). CNS tumors and malignant bone tumors presented the worse prognosis (5-years survival: 45.0% and 70.0%). Considering all malignant tumors, there was a no significant increase (log-rank test=0.061) in 5-years survival (75% in 2005 to 80% in 2015); by tumor type, only Lymphoma showed significant increases in 5-year survival. Other changes (increases or decreases) did not reach statistical significance due to the small number of cases.

CONCLUSIONS. In the 1986-2017 period, childhood cancer incidence has not shown significant differences and 5-year survival had improved from 75 to 80% in the Basque due to leukaemia and lymphoma, over the last two decades.

S2-P09 NEW CHILDHOOD CANCER SURVIVAL ESTIMATES IN ITALY

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OBJECTIVES. The study of childhood cancer, including survival, has been a commitment of Italian population-based cancer registries since decades, and a couple of reports have been published. The present study updates the last available estimates with more recent data focusing on cancer survival.

METHODS. Data from seventeen population-based cancer registries, representing 31% of the Italian resident population, were included. 1774 cases diagnosed in subjects 0-14 years between 2010 and 2014 with active follow-up up to the end of 2018 were analysed. Cases were classified according to ICCC-3. Observed survival at 5 years since diagnosis and corresponding 95% confidence intervals were computed.

RESULTS. Overall, 5-year observed survival was 84.3% (82.5-86.0), similar between boys 84.3% (1010 cases, 82.5-86.0) and girls, 84.4% (764, 81.5-86.9). ICCC-3 group specific survival was: (group I) leukaemia 86.9%, (Ia) acute lymphatic leukaemia 88.4%, (Ib) acute myeloid leukaemia 79.3%, (IIa) non-Hodgkin lymphoma 92.4%, (IIb) Hodgkin lymphoma 99.1%, (III) CNS 72.4% (including non-malignant tumours), (VIII) bone 75.6%, (IX) soft tissue 80.2%, (VI) kidney (essentially nephroblastoma) 86.1% and liver 75.4%. All children with (XIb) thyroid (n.41) or (XId) skin melanoma (n.18) were alive after 5 years.

CONCLUSIONS. These new population-based data confirm that childhood cancer survival in Italy is relatively good and as high as in peers from USA. Therefore, results reassure on the quality, access, commitment to the territory of high-level childhood oncology services. The increasing childhood cancer survival boosts the number of adults with a childhood history of cancer. These citizens, even if cured from the cancer, need to be socially and economically supported and follow-up to achieve a high level 'normal' life.

S2-P10 INCIDENCE OF PRIMARY CENTRAL NERVOUS SYSTEM TUMOURS IN CHILDREN AND ADOLESCENTS IN CAMPANIA REGION, 2008-2017

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BACKGROUND. Central nervous system (CNS) tumours are the most frequent solid tumours in children and adolescents, second in incidence only to leukemia, representing 20-25% of cancers in 0-19 age-group. CNS tumours are composed of more than 100 morphological subtypes, which vary in behaviour, incidence and age of onset. The aim of study was to evaluate the incidence pattern of CNS tumours in children and adolescents in Campania region.

METHODS. This population-based study included malignant and non-malignant CNS tumours, registered by Childhood Cancer Registry of Campania in the period 2008-2017. The cases, registered in ICDO-3, were classified according to the International Classification of Childhood Cancers (ICCC-3). We analyzed the age-specific rates and age-standardized rates (ASR) using the European standard population (2013), expressed in cases per million per year. The incidence trend in the period 2008-2017 was estimated as the annual percent change (APC) of the incidence rates, using Joinpoint Regression Program.

RESULTS. We registered 606 CNS tumours among children and adolescents (M/F ratio 1.03; 39% malignant) with an ASR of 47.6. ASRs decreased with age and ranged from 61.5 (0 age-group) to 33.7 (15-19 age-group). The same trend was observed in malignant CNS tumours: the ASRs decreases from 32.6 to 11.0. Most common histological types in malignant cases were intracranial and intraspinal embryonal tumours with an ASR of 6.7, whereas the most frequent subtype in this diagnostic group was medulloblastoma (49%). The astrocytomas reached an ASR of 11.0 in non-malignant cases: in this diagnostic group 92% were pilocytic astrocytomas. The incidence rates showed no statistically significant variation in the period 2008-2017, neither in malignant (APC: -0.6; 95% CI: -5.8-5.0), nor in malignant and non-malignant CNS tumours (APC: 0.0; 95% CI: -2.8-2.8).

CONCLUSIONS. We describe the incidence pattern of primary CNS tumours in children and adolescents in the second most populous region of Italy in this age group (more than 1.1 million residents). The lack of change in incidence rates of primary CNS tumours over the last 10 years, consistent with other studies, could suggest that etiological risk factors prevalence has not varied widely.

Epidemiological surveillance through population-based studies of CNS tumours remains a priority due to the significant impact on mortality in children and adolescents and quality of life of survivors.

S2-P11 MORTALITY IN YOUNG CANCER SURVIVORS COMPARED WITH GENERAL POPULATION IN ITALY

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OBJECTIVES. To describe the overall and non-cancer excess mortality of young cancer survivors compared to the general population.

METHODS. The Italian cohort of adolescent and young adult (AYA, 15-39 years old at cancer diagnosis) cancer survivors (alive at least 5 years after cancer diagnosis) was used since it pooled data from more than 30 population based cancer registries. We estimated standardized mortality ratio (SMR) for the period of diagnosis 1976-2013 with 95% confidence interval (95%CI) and Kaplan–Meier survival for all-causes of death. For a subset of the registries with an unknown cause of death rate of less than 20%, we estimated SMR for non-cancer causes of death by applying the sex, age, and calendar year-specific percentage of deaths for cancer causes from national statistics to the person-years of the cohort. Kaplan–Meier survival was performed for non-cancer causes (ICD-9 codes, 001-139, 240-999; ICD-10 codes, A00-B99, D50-Z99), cancer causes (ICD-9 codes, 140-239; ICD-10 codes, C00-D49) and cause of death unknown.

RESULTS. Of the 67,317 5-year survivors, 4889 (7.3%) had died by the end of 2019. Survivors were followed up for a total of 501,276 person-years with a median 5.7 years of follow-up beyond the 5th year after diagnosis (maximum follow-up=35.9years). The all- cause SMR was 6.8 (95%CI: 6.6 – 7.0). The all-cause survival probability was 94.6%, 87.7%, and 78.9% at 10, 20, and 30 years after diagnosis, respectively. In the sub-cohort of 58,387 AYA cancer survivors with low proportion of unknown causes of death (6.4%), 3,429 (81.8%) died from cancer causes, and 496 (11.8%) died from non-cancer causes. The SMR for non-cancer causes mortality was 1.66 (95%CI: 1.51 – 1.81). The survival probability at 10, 20, and 30 years after diagnosis were 99.7%, 99,2 %, and 98.6% for cause of death unknown, 95.3%, 90.1%, and 83.7% for cancer causes and 99.5%, 98.2%, and 95.3% fornon-cancer causes, respectively.

CONCLUSIONS. All-cause mortality is about 7 folds higher in young adult cancer survivors than in the general population, even excluding the first 5 years after diagnosis. This excess is largely due to cancers, but they have at least 60% higher mortality also for non-cancer causes.

ADA WORKING GROUP: Massimo Rugge, Anita Andreano, Sabrina Fabiano, Gianfranco Manneschi, Fabio Falcini, Marine Castaing, Rosa Angela Filiberti, Cinzia Gasparotti, Claudia Cirilli, Rosanna Cusimano, Silvia Iacovacci, Maria Francesca Vitale, Fabrizio Stracci, Robertovito Rizzello, Rosario Tumino, Simona Carone, Giuseppe Sampietro, Anna Melcarne, Paolo Ricci, Lorenza Boschetti, Maria Letizia Gambino, Elisabetta Merlo, Rossella Bruni, Alessandra Sessa, Giancarlo D'Orsi, Anna Clara Fanetti, Maria Carmela Pagliara, Giuseppa Candela, Fabio Savoia, Cristiana Pascucci, Maurizio Castelli, Cinzia Storchi.

S2-P12 SEASONAL VARIATION IN INCIDENCE RATES OF CHILDHOOD EMBRYONAL TUMORS IN FRANCE, 2000-2015

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BACKGROUND: Embryonal tumors accounts for about 25% of childhood cancers. Based on data from the French National Registry of Childhood Cancers (RNCE), we showed that there was no spatial heterogeneity or annual variation in embryonal tumors incidence rates in mainland France. In line with this work, the present study aimed to investigate seasonal variation in embryonal tumors incidence rates by month of birth and, separately, by month of diagnosis. This issue has been little studied in the literature.

METHODS: We included 6,635 primary embryonal tumor cases aged 0-14 years from the RNCE diagnosed over the period 2000- 2015 and residing in mainland France at diagnosis. For the analyses by month of birth, we restricted the analyses to the 4,956 cases born during 2000-2015 and residing in mainland France. We evaluated separately potential seasonality by diagnostic group (medulloblastomas, neuroblastomas, retinoblastomas, nephroblastomas, hepatoblastomas and rhabdomyosarcomas) and main subgroup. We used birth and population census data to estimate the population at risk. Assuming monthly variations in incidence rates were homogeneous over 2000-2015, we used Poisson regression model to test for a global heterogeneity in standardized incidence ratios (SIRs) by month of birth or diagnosis. The seasonal scan statistic method was used to detect monthly excesses or deficits of embryonal tumor cases over the whole study period. The annual reproducibility of the observed monthly variations was formally tested.

RESULTS: A seasonality by month of birth was evidenced for rhabdomyosarcomas in boys, with a higher incidence rate in June- September period compared to the October-May period (SIR_Jun-Sep=1.24, 95% CI=1.05-1.46 vs SIR_Oct-May=0.88, 95% CI=0.76-1.00). Based on month of diagnosis, the period from July to August was associated with a lower incidence rate of unilateral retinoblastomas (SIR_Jul-Aug=0.68, 95% CI=0.52-0.87), while the incidence rate of rhabdomyosarcomas tended to belower in August than in the remaining months (SIR_Aug=0.68, 95% CI=0.52-0.89). No seasonality was evidenced for the other diagnostic groups.

CONCLUSIONS: We observed a seasonal variation in the rhabdomyosarcoma incidence rates in boys by month of birth. A deficit in the number of retinoblastoma and rhabdomyosarcoma cases diagnosed during the summer months was also observed, which may reflect patient or hospital delays. A common clinical feature of these types of embryonal tumors is that they often present with mild, nonacute symptoms, so that a delay in consultation by self-referral is likely during summer months. We cannot exclude however that our findings may be attributed to seasonally varying perinatal environmental exposures.

Session 3

OUTCOMES (CANCER SURVIVAL AND QUALITY OF LIFE)

S3-O09 LONG-TERM NON-HODGKIN LYMPHOMA SURVIVORS IN CÔTE D’OR: HEALTH-RELATED QUALITY OF LIFE AND LIVING CONDITIONS

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AIMS: To identify the clinical and social determinants of long-term health related quality of life (HRQoL) in Non-Hodgkin Lymphoma (NHL) survivors in the general population and to describe their socio-professional reintegration, socio-economic status, sexual well-being and the impact of COVID.

METHODS: All patients were registered in the population-based cancer registry specialized in hematological malignancies in the Côte d’Or area. We identified patients diagnosed with diffuse large B cell lymphoma (DLBCL) or follicular lymphoma (FL) according to the third edition of the International Classification of Diseases for Oncology (ICD-O-3), from January 1st 2010 to December, 31st 2017, and who were still alive on March, 1st 2021, with an updated address. Patients under 18 years old and adults unable to provide consent were not eligible. In March 2021, patients completed standardized self-report questionnaires for HRQoL (SF-12), anxiety and depression (HADS), social support (SSQ6), socio-economic deprivation (EPICES). Reminders were sent to non-responders after one month. The determinants of HRQoL were identified using a generalized linear model.

RESULTS: Among 436 patients diagnosed, 248 were alive at the study endpoint, of whom 157 (FL 51% and DLBCL 49%) completed the questionnaires, yielding a response rate of 63.3%, the median of time since diagnosis was 76 months [39-133]. The mean age of participants was 67.3 years (SD = 12.4), 55% were men, 74% Ann Arbor stage III-IV, 78% were treated by chemotherapy and immunotherapy, 64% did not have comorbidities, 27% were employed at the time of the survey, 60% of survivors had not received information about sexuality, 29% reported a negative impact of the disease on their professional activities, 54% reported an impact of the COVID crisis on their life. This impact was socio-economic for 77% , psychological for 23% of respondents. The main factors associated with a negative impact on HRQoL were depression, anxiety, and loss of sexual desire.

CONCLUSIONS: Six years after diagnosis, clinical parameters did not have a major influence on HRQoL. The main determinants of HRQoL identified were psychological and social factors. All these elements are potential targets for specific interventions by the social system to improve HRQoL in NHL patients.

S3-O10 TRENDS IN NET SURVIVAL FROM VULVAR SQUAMOUS CELL CARCINOMA IN ITALY FROM 1990 TO 2015

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OBJECTIVES. In many western countries, survival from vulvar squamous cell carcinoma (VSCC) has been stagnating for decades or has increased insufficiently from a clinical perspective or unequally across age groups. We report the survival trend from 1990 to 2015 in Italy.

METHODS. Thirty-eight local cancer registries covering 49% of the national female population contributed the records of 6,274 patients with VSCC. One-, 2- and 5-year net survival (NS) was calculated using the Pohar-Perme estimator according to a traditional cohort approach. The significance of the trends in NS over the periods 1990-2001, 2002-2008, and 2009-2015 was assessed with a Wald test on the coefficient of the period of diagnosis, entered as a continuous regressor in a Poisson regression model for NS.

RESULTS. The median patient age was stable at 76 years. One- and 2-year NS decreased by approximately 2%. The decrease in 5-years NS was negligible. None of these trends was significant. There was no significant trend in 1-year NS according to patient age group (<70, 70-79, and >=80 years) and geographic area (north, centre, south). In the age stratum 70-79 years, 2-year survival decreased from 71.4% to 65.7% (P=0.037) and 5-year survival from 58.6% to 55.3% (P=0.089).

CONCLUSIONS. Overall survival probability of patients with VSCC in Italy has not increased since 1990. Current strategies for the control of the disease need to be substantially revised at the global level.

S3-O11 5-YEAR SURVIVAL AFTER A DIAGNOSIS OF CANCERS CAUSED BY TOBACCO SMOKING

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OBJECTIVES. According to IARC, there is sufficient evidence for tobacco smoking to be causally linked to 20 cancer types. The aim of this analysis was to describe and compare survival after the diagnosis of all of these cancers in Italy.

METHODS. Statistical analysis of data from seventeen population-based cancer registries, representing 31% of the Italian population - mostly in the North. These data included 479144 cases diagnosed in subjects 15+ years old between 2010 and 2014 with follow-up up to 2018. Net age-standardized survival at 5 years was computed, for men and women separately, for each of the 20 cancers caused by tobacco smoking.

RESULTS. For all cancers of the upper aerodigestive cancers, the 5-year net survival ranged from 46.9% in men and 58.8% in women. Women also showed significantly higher survival probabilities than men for lung cancer (22.7% and 16.4%, respectively). No differences emerged among men and women for digestive cancers, (e.g., 11.1% in men and 11.6% in women with pancreatic cancer; 21.6% I both sexes for liver cancer), kidney (70.9%, men, 71.7% women) and bladder cancers (79.7% and 78.1%, respectively). With regard to female genital cancers, the 5-year survival ranged from 57.5% for cervical to 42.6% for ovarian cancer.

CONCLUSIONS. Quitting tobacco smoking has been consistently shown to improve survival after cancer diagnosis, including cancer types/sites not caused by smoking. The differences in survival shown in this analysis among men and women and across types/sites are of support to existing evidence in favor of the importance of smoking cessation also after cancer diagnosis.

S3-O12 ACCOUNTING FOR EXCESS MORTALITY FROM OTHER CAUSES TO BETTER ESTIMATE CURE INDICATORS FOR CANCER PATIENTS, OPEN DEBATE

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OBJECTIVES. There is growing awareness that cancer patients (cp), as compared to age- and sex-matched individuals of the general population, can be subjected to an extra risk of death from other causes than the diagnosed cancer, mainly from cardiovascular and respiratory diseases or other independent cancers.

In this context, is it correct to assume that cured cp have the same mortality as the general population of same age and sex? More generally, is it correct to assume, in relative survival framework, that the other cause mortality can be approximated by the overall mortality of the general population found in life tables?

METHODS. We modelled survival and cure including this excess mortality for other causes of cp for childhood and adults' cancer. The model proposed for adults included this parameter on a multiplicative scale in order to correct the reference population mortality. It was positively evaluated for reliability and robustness using simulation analysis and applied to FRANCIM colon cancer data. For childhood cancer, having negligible mortality from other causes, we choose to model the excess mortality for other causes of cp as an additive effect. We applied it to EUROCARE-6 childhood cancer data assuming a constant excess across all countries, all ages and both sexes.

RESULTS. The extra risk of dying for other causes estimated for cured colon cp was 30%. In addition for childhood cancer we estimated that after 10 years, about 2/1000 cancer survivors are annually expected to die from other causes. The differences in the cure fraction estimates from the proposed to the conventional model were 5% for male colon cp at age 60.Conventional cure model do not correctly fits data for childhood cancers so the same comparison is not possible.

CONCLUSION. The present analysis suggests that conventional indicators overestimate cancer related mortality and underestimate cure fraction and net survival of cp and hide the effect of comorbidities on patient's life expectancy.

Finally, a more correct balance between death risks due directly to cancer and to other diseases, often more effectively controlled with a specific long-term clinical follow-up, can improve patients' awareness and quality of life.

S3-013 SURVIVAL OF PATIENTS WITH COLORECTAL CANCER IN NAVARRA (SPAIN), 1999–2016. A POPULATION-BASED STUDY

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OBJECTIVES: Several cancer control actions have been carried out in the last two decades in Navarra, including the implementation of the population-based organized screening program for colorectal cancer (CRC). The aim of this study was to analyse survival for CRC by sex, age and stage at diagnosis and survival trends over 1999–2016.

METHODS: We used population-based data from the Navarra Cancer Registry. All incident cases of invasive CRC, among adults (15–99 years), diagnosed in 1999–2004, 2005–2010 and 2011–2016 were included and followed-up for vital status up to 31 Dec 2020. We estimated 5-year net survival (NS) through the Pohar-Perme method in each period, by sex, age group and stage at diagnosis (condensed TNM), the latter was only available for 2011–2016. The International Cancer Survival Standard weights were used to calculate age-standardized net survival (ASNS) estimates.

RESULTS: We included 8326 CRC cases (65.8% of colon). The 5y-ASNS for CRC increased between the first and the last period from 59.4% (95%CI: 56.2–62.6%) to 67.3% (95%CI: 64.8–69.8%) in men and from 57.3% (95%CI: 53.7–61.0%) to 66.4% (95%CI: 63.4–69.3%) in women. Survival was lower in patients older than 70 years. Thus, for instance, in the last period, the 5y-NS in men was 57.7% (95%CI: 53.5–61.9%) in those over 70 years old compared to 75.1% (95%CI: 72.0–78.2%) in the group aged 50– 69 years, and in women the corresponding figures were 52.0% (95%CI: 47.2–56.7%) vs. 74.1% (95%CI: 69.9–78.4%). No statistically significant difference in survival was observed between men and women. In the last period according to stage, 5y- ASNS in men was 89.2% (95%CI: 85.2–93.3%) for localised tumors, 80.1% (95%CI: 76.8–83.3%) for tumors with local or regional spread, and 17.6% (95%CI: 13.7–21.4%) for advanced cancer. In women these figures were 92.8% (95%CI: 88.1–97.5%), 80.5% (95%CI: 76.5–84.5%) and 17.1% (95%CI: 12.3–21.8%), respectively.

CONCLUSIONS: Survival for CRC has increased considerably in the last two decades in Navarra. Further studies are required to better understand differences by age. Continued monitoring of survival of CRC patients, by stage at diagnosis, along with incidence and mortality, will allow evaluation of the impact of the recently initiated screening program.

S3-P13 FERTILITY AND SEXUALITY CONCERNS AMONG YOUNG BREAST CANCER SURVIVORS IN CÔTE D'OR.

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OBJECTIVES: Using data from the specialized Côte d'Or Breast and Gynecologic Cancer Registry, this study aimed to compare fertility data at diagnosis and after treatment among young BC survivors who were aged 45 years and younger at the time of diagnosis, and who were diagnosed between 2006 and 2015 in Côte d'Or. In addition, we describe fertility and sexuality concerns among young BC survivors, as well as the fertility information received at diagnosis.

METHODS: Women aged 45 and younger, diagnosed with non-metastatic BC between 2006 and 2015 were selected from the Côte d´Or Registry of breast and other gynecological cancers. In February 2019, participants completed specific self-report questionnaire on different aspects of fertility and sexuality, from diagnosis to post-cancer. Data at diagnosis and at the end of treatment were compared using the McNemar test.

RESULTS: A total of 212 BC survivors participated in the study. About 7 years after diagnosis, 54% of women reported sexual dysfunction. The proportion of women who were in a relationship when diagnosed with the disease was 90% compared to 60% at the time of the study ($p < 0.0001$). The use of contraception decreased from diagnosis (78%) to the end of treatment (64%) ($p = 0.0043$). The proportion of women with a non-existent menstrual cycle increased from 23% before treatment to 56% at the end of treatment ($p < 0.0001$). At the time of the study, 55% of women were postmenopausal compared to 2% at diagnosis ($p < 0.0001$). Approximately 72% of women said they had not been informed at diagnosis about fertility preservation and 38% would have liked to have been informed. Eighty five percent of the study participants already had children at the time of diagnosis. Fifteen (10%) women had pregnancy plans at diagnosis, among them 9 (64%) gave them up after treatment ($p < 0.0001$). Two of these 15 women had a spontaneous pregnancy after treatment.

CONCLUSIONS: Young BC survivors face sexual dysfunction and fertility-related challenges at the end of treatment. They also lack information on fertility preservation techniques. Targeted interventions aimed at caregivers should be put in place to promote discussion on the different aspects of sexuality, fertility and fertility preservation of young women at diagnosis in parallel to the management of BC.

S3-P14 SURVIVAL FROM BREAST, CERVICAL, AND COLORECTAL CANCER IN THE AGE GROUPS ADJACENT TO THE STANDARD TARGET AGE RANGES OF SCREENING PROGRAMMES IN ITALY

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OBJECTIVES. There are many factors to consider in making a decision about the question of whether to extend the standard target age ranges of breast, cervical, and colorectal cancer screening programmes to include younger and/or older adjacent age groups. Among these factors, the evaluation of current survival probabilities in the newly proposed target age groups is paid little attention. This was as the objective of the present study from Italy.

METHODS. Data from seventeen population-based cancer registries, covering 31% of the Italian population, were included. Five-year age- specific net percent survival by geographic area was calculated. In Italy, the standard target age for breast, cervical, and colorectal cancer screening programmes is, respectively, 50-69 years, 25-64 years and 50-69 years.

RESULTS. In northern-central Italy, breast cancer survival was 92.9% at age 40-44 and 94.3% at age 45-49 versus 93.0% at age 50-69 years. A decrease was observed at age 70-74 (89.5%). In southern Italy, the rates were lower but their age pattern by age were similar (40-44, 89.0%; 45-49: 91.4%; 50-69, 90.2%; 70-74, 81.9%). Cervical cancer patients aged 65-69 years had a considerably lower probability than those aged 25-64 years (northern-central Italy: 59.6% versus 79.5%; southern Italy: 51.7% versus 72.4%). In northern-central Italy, colorectal cancer survival for women was 74.5% at age 45-49 versus 74.5% at age 50-69. A marked drop occurred at age 70-74 (65.2%). For men, survival at age 45-49 (67.3%) was lower than between 50-69 (74.6%). Again, a decrease was observed at age 70-74 (63.3%). For women living in southern Italy, the situation was similar to the north, whereas both men aged 45-49 and 70-74 years showed lower rates than men aged 50-69 years.

CONCLUSIONS. In Italy, breast and colorectal cancer patients in the age groups below the target age of mammography and colorectal screening programmes suffer from modest prognostic disadvantages (men) or no disadvantage at all (women). For patients aged above the age of screening cessation, survival from breast, cervical, and colorectal cancer decreases markedly. A situation analysis of baseline survival could usefully complement the decision-making about the extension of the target age ranges of screening programmes.

S3-P15 SURVIVAL OF PLASMACYTOMA AND MULTIPLE MYELOMA IN TARRAGONA, CATALONIA, SPAIN (2000-2015)

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OBJECTIVE: To assess and compare survival of plasmacytoma and multiple myeloma according to age at diagnosis, sex and period of diagnosis in Tarragona province, Catalonia, Spain.

METHODS: Data of patients diagnosed with multiple myeloma (MM, ICD10 C90.0), and bone and extramedullary plasmacytoma (ICD10 C90.2) during the periods 2000–2007 and 2008–2015, and followed up to the 31st December 2017 registered in the Tarragona Cancer Registry were analyzed. Patients were grouped in <60 and 60+ years old. Five-year relative survival (5y-RS) rates and their 95% confidence interval (IC95%) were estimated through the Ederer II method, by sex, age and period.

RESULTS: During 2000-2015, 618 MM and 35 plasmacytomas (27 of bones and 8 extramedullary) were diagnosed among residents of the province of Tarragona. We observed higher 5y-RS for plasmacytoma, both bone (68%, IC95% 49.5-93.5) and extramedullary (87.1%, IC95% 55.9-119.5), than for MM (34.1%, IC95% 30.0-38.8).

Globally, 5y-RS of individuals <60 years was 60.1% (IC95% 50.1-72.1) and that of 60+ years was 31.9% (IC95% 27.7-36.8). Significant differences in survival were observed for individuals with plasmacytoma as a whole diagnosed <60 years (85.3%, IC95% 59.6-102.3) compared to those diagnosed at 60+ years (69.2%, IC95% 49.9-95.8). Similar differences between <60 and 60+ age-groups were observed in patients with MM: 58% (IC95% 47.6-50.6) and 30% (IC95% 25.8-34.9), respectively.

Women with MM showed higher survival (39.7%, IC95% 33.8-46.6) than men (28.8%, IC95% 23.4-35.4), while in both plasmacytoma subtypes significant sex differences were not evident. A significant improvement of 5y-RS for MM was also found in the period 2008-2015 (39.5%, IC95% 33.6-46.4) compared to the period 2000-2007 (28.8%, IC95% 23.5-35.3). The lowest survival was observed in male patients with MM older than 60 years diagnosed during the period 2000-2007.

CONCLUSIONS: This population-based study assesses plasmacytoma and MM survival according to age at diagnosis, sex and time period of diagnosis. 5y-RS for plasmacytomas and MM varied significantly by age (<60/60+ years) supporting age-related differences in disease burden at presentation, disease biology and/or treatment approaches. These conclusions may be limited by therelatively small number of available cases for plasmacytoma.

S3-P16 CLINICAL CHARACTERISTICS AND PROGNOSTIC FACTORS OF ADVANCED NSCLC PATIENTS ON AUTONOMOUS REGION OF MADEIRA, FOCUS ON DRIVER MUTATIONS (EGFR AND ALK)

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OBJECTIVES. Lung cancer (LC) is the leading cause of cancer mortality worldwide and smoking is considered the main risk factor for its development. Innovative strategies have been developed to target driver mutations present in non-small cell lung cancer (NSCLC). This retrospective cohort study of patients with advanced NSCLC evaluated the clinic characteristics and prognostic factors, focusing mutation therapies targeting anaplastic lymphoma kinase (ALK) and epidermal growth factor receptor (EGFR).

METHODS. Data were collected from patients diagnosed in the Autonomous Region of Madeira with advanced NSCLC between 2015-2020, registered on the National Cancer Registry (RON) platform. Mutational status for EGFR and ALK were accessed. Smoking habits were defined as never smoker, current smoker (active habits on the moment of diagnosis) and ex-smoker (cessation >1 year from diagnosis), reported in the clinical history. Chi-square test for association and Kaplan-Meier were used for statistical study.

RESULTS. 301 advanced NSCLC cases (74.1% males), with a median age of 67 years (IQR=16) were registered on RON platform. 21.9% were never smokers and 64.5% were diagnosed with adenocarcinoma (ADC). 9.3% of patients had EGFR mutations (mEGFR) and 4.3% had ALK gene alterations (ALK+). Smoking habits were associated (p<.05) to gender – 66.2% of females and 9.1% males never smoked; older groups were associated to never smokers; current smokers were diagnosed more frequently with metastatic disease; ADC was associated to never smokers, and squamous cell (SqCC) was associated to smoking habits.

Regarding mutations, ALK+ was found on 9.1% of current smokers and 45.5% of ex-smokers, and mEGFR on 10.7% of current smokers and 7.1% of ex-smokers. Most patients (>78.6%) with the studied mutations were treated with tyrosine kinase inhibitors. Compared to those with no mutations or no target therapies, target EGFR therapies lead to an increase survival rate (SR; 12-month SR=62.2%, p=.001). For ALK+ patients treated with target therapy the 12-month survival rate was 54,5% (p=.058).

CONCLUSIONS. LC at later ages and increased mutational frequency were associated to non-smokers. Patients with EGFR or ALK mutations treated target-therapies demonstrated better prognosis and clinical outcomes.

S3-P17 ADVANTAGE OF WOMEN IN CANCER SURVIVAL: A POPULATION-BASED STUDY OF THE SPANISH NETWORK OF CANCER REGISTRIES (REDECAN)

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OBJECTIVES: Previous studies have found a female survival advantage for different types of cancer. The objectives of this study were to compare cancer survival between men and women in Spain and to quantify the differences, in order to formulate explanatory hypotheses to be analyzed in specific studies by type of cancer.

METHODS: We used data from 13 Spanish population-based cancer registries included in the REDECAN network, covering around 26% of the Spanish population. Cases of adults (15–99 years) diagnosed with a primary cancer during 2002–2007 and 2008–2013 were selected and followed up until 2015. Cancers unique to one sex and breast cancer were excluded. Differences in net survival by sex were assessed for 23 cancer types using the Pohar-Perme estimator. We calculated 5-year age- standardized net survival (ASNS) by using the International Cancer Survival Standard weights.

RESULTS: A total of 420,931 cases were included. In patients diagnosed in 2008–2013, 5y-ASNS overall and for 12 cancer types was higher in women than in men. The women's advantage was smaller in the older age groups. The difference was particularly marked for oral cavity and pharyngeal cancer: 38.2% (95% CI 36.6–39.9%) in men and 57.2% (95% CI 54.4–60.2%) in women.

There were also important differences for thyroid cancer: 86.1% (95% CI 83.2–89.0%) and 93.1% (95% CI 91.8–94.3%), cutaneous melanoma: 82.3% (95% CI 80.5–84.0%) and 88.9% (95% CI 87.5–90.3%), myeloma: 44.8% (95% CI 42.1–47.5%) and 51.2% (95% CI 48.4–54.0%), and lung cancer: 12.7% (95% CI 12.2–13.2%) and 17.6% (95% CI 16.5–18.7%), in men and women, respectively. Likewise, 5y-ASNS was significantly higher in women than in men for cancer of the stomach, pancreas, rectum, urinary bladder, brain, non-Hodgkin's lymphoma and acute myeloid leukemia. For the rest of the cancers, survival was similar in both sexes. Between the two periods, for all cancers combined, a similar increase in 5y-ASNS was observed in both sexes and the difference between them did not decrease.

CONCLUSIONS: Survival was higher in women than in men for 12 of 23 cancer types. Possible explanations include a biological advantage and differences in tumor sub-site/histology, risk factors, comorbidity and socio-cultural factors favoring earlier diagnosis in women. Analyzes by cancer type, including stage at diagnosis and other potential explanatory factors, are required to better understand sex differences and identify actions to reduce them.

Session 4

QUALITY OF CARE

S4-014 THE ECONOMIC IMPACT OF RECTAL CANCER IN ITALY: RESULTS FROM THE EPICOST STUDY

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OBJECTIVES. Costs of cancer care are increasing worldwide, and sustainability of cancer burden is critical. Aim of this study is to estimate the economic impact of rectal cancer on the Italian healthcare system using a methodological approach applicable to other cancer types and countries.

METHODS. A cross-sectional cohort of 9358 rectal cancer patients is linked, on an individual basis, to claims associated to rectal cancer diagnosis and treatments. Costs refer to years 2010–2011 and are estimated on a three-phase pattern of care that considers the whole process of the disease: initial (diagnostic procedures and treatments in the 12 months after diagnosis), continuing (follow-up treatments and monitoring for relapses), final (end-of-care treatments in the 12 months prior to death).

RESULTS. Patient annual average cost is about 14,000€ in the initial 1700€ in the continuing and 10,000€ in the final phase of care. Average costs per patient are characterised by a U-shape (cost profile): costs are higher in the first 2–3 months, when diagnostic tests and major surgeries are supplied, as well as in the end-of-life, when palliative care is supplied. Hospitalization represents the main cost item (79% of total expenditure), followed by outpatient services (20%) and drug prescriptions (only 1%). Stage and age at diagnosis are the main determinants of cost per patient: cases diagnosed with advanced disease absorb 47% resources more than cases diagnosed with early disease.

CONCLUSIONS. Epicost is the first study to estimate the economic burden of rectal cancer on the public health system in Italy at a population level, based on the analysis of micro-data. The evidence produced can be used to improve planning and allocation of healthcare resources. In particular, early diagnosis of rectal cancer is a gain in healthcare budget. Policies raising spreading of and adherence to screening plans should be strongly encouraged. The method proposed can be extended to other cancers and countries with diverse healthcare managements and systems, as long as data on healthcare services and related costs at individual level are accessible.

The Epicost project was financed by the Italian Health Minister (CCM).

S4-015 MANAGEMENT AND OUTCOME OF YOUNG WOMEN (≤40 YEARS) WITH BREAST CANCER IN SWITZERLAND

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BACKGROUND: An increase in breast cancer (BC) incidence in young women (YW) as well as disparities in BC outcomes have been reported in Switzerland. We sought to evaluate treatment and outcome differences among YW with BC (YWBC).

METHODS: YW diagnosed with stage I-III BC between 2000–2014 were identified through nine cancer registries. Concordance with international guidelines was assessed for 12 items covering clinical/surgical management, combined in a quality-of-care score. We compared score and survival outcome between the two linguistic-geographic regions of Switzerland (Swiss-Latin and Swiss- German) and evaluated the impact of quality-of-care on survival.

RESULTS: A total of 2477 women were included. The median age was 37.3 years (IQR 34.0–39.4 years), with 50.3% having stage II BC and 70.3% having estrogen receptor positive tumors. The mean quality-of-care score was higher in the Latin region compared to the German region (86.0% vs. 83.2%, $p < 0.0005$). Similarly, 5- and 10-year overall survival rates were higher in the Latin compared to the German region (92.3% vs. 90.2%, $p = 0.0593$, and 84.3% vs. 81.5%, $p = 0.0025$, respectively). There was no difference in survival according to the score. In the univariate analysis, women in the Latin region had a 28% lower mortality risk compared to women in the German region (hazard ratio 0.72; 95% CI 0.59–0.89). In the multivariable analysis, only stage, differentiation, tumor subtype and treatment period remained independently associated with survival.

CONCLUSIONS: We identified geographic disparities in the treatment and outcome of YWBC in Switzerland. National guidelines for YWBC should be implemented to standardize treatment. Awareness should be raised among YW and clinicians that BC does not discriminate by age.

S4-016 CANCER SURVIVAL AND TRAVEL TIME TO NEAREST REFERENCE CARE CENTRE FOR 10 CANCER LOCALISATIONS: AN ANALYSIS OF 21 FRENCH CANCER REGISTRIES.

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OBJECTIVES : The aim of this study was to investigate the influence of travel time to the nearest referral centre on the survival of patients.

METHODS : The study used data from the French Network of Cancer Registries (FRANCIM) which combines all the French population-based cancer registries. For this study we included the 10 most common solid invasive cancer sites in France between January 1, 2013 and December 31, 2015 representing 160,634 cases. Net survival was measured and estimated using flexible parametric survival models. Flexible excess mortality modelling was performed to investigate the association between travel time to the nearest referral centre and patient survival. In the way to allow the most flexible effect, restricted cubic splines were used to investigate the influence of travel times to the nearest cancer centre on excess hazard ratio.

RESULTS : Among the 1-year and 5-year net survival results, lower survival was observed for patients residing farthest from the referral centre for almost all sites and sexes. The remoteness gap in survival was estimated up to 10% for few localisations and up to 8% for pancreatic cancer in women. The pattern of the effect of travel time is highly different according to localisation, being either linear or reverse U-shape or non-significant or better for more remote patients. For some sites restricted cubic splines of the effect of travel time on excess mortality were observed with a higher excess risk ratio as travel time increased. This trend was observed for lung cancer and melanoma of the skin for both sexes, and for breast cancer in women.

CONCLUSIONS : Our results reveal that numerous cancer localisations are subject to geographical inequalities, with the notable exception of prostate cancer, remote patients constantly suffering to worse prognosis. Furthermore, it would be interesting to study the remoteness gap in more detail with more explanatory factors.

S4-017 PROFILE OF ACUTE MYELOID LEUKAEMIA PATIENTS REFERRED TO AN HAEMATOLOGIST DURING CARE MANAGEMENT: A POPULATION-BASED STUDY IN THREE FRENCH SPECIALISED REGISTRIES AREAS

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BACKGROUND: Acute myeloblastic leukaemia (AML) is a rare disease of the elderly with a very poor prognosis. Recent data have highlighted survival disparities in AML patients. Survival differences have been attributed, partly, to unequal access to curative treatments, potentially due to non-biological factors associated with patient care pathways. In this study, we describe the AML care pathway and focus on the accessibility to the haematologist.

METHODS: We included 1,010 incident AML cases diagnosed between 2012-2016 in the 3 French geographical areas covered by a specialised haematological malignancy registry (Dijon, Basse-Normandie and Gironde; 3,625,400 inhabitants). We dissociated patients according to age at diagnosis (under and over 80years-old), the first medical entry unit and the access to the haematologist during the follow.

RESULTS: A total of 693 patients(69%) had access to a haematologist during care management (vs317 or 31%), including 566patients (82%) under 80years-old(median age=62years) and 127 (18%) over 83years-old (median age=83years-old). Among these patients, 449(65%) were referred by their general practitioner, n=95 (14%) were referred by the emergency unit, n=77 (11%) via a specialised medical unit and n=59 (8.5%) went directly to the haematology unit. In the overall study, access to haematology was not statistically different according to patients' socio-economic status based on EDI-quintiles. However, patients who consulted a haematologist were younger (median age=66years-old vs 83, $p<0.001$), 92% had access to cytogenetic exam (vs54%, $p<0.001$), had less poor prognosis AML subtype (AML with Myelodysplastic Related Changes, Therapy-related AML/MDS and AML-Not Otherwise Specified) (38% vs69%); 77% had de novo AML (vs67%, $p<0.003$); and had a more favourable (23% vs6%, $p<0.001$) cytogenetic initial prognostic status. They also had fewer comorbidities (54% with no comorbidity vs32%, p<0.001) and were more treated curatively at 68% (vs14%, p<0.001). Additionally, 14 (11%) of the over 80years-olds who saw a haematologist received curative treatment (vs1% over 80year-olds who did not see a haematologist). Among curative patients, the first-line complete remission rate was 70% for patients who consulted a haematologist (vs5.2%, p=0.001).

CONCLUSIONS: Patients with better prognosis profiles seem to be more transferred to the haematology unit for treatment management. The high proportion of curative treatment among patients who saw a haematologist, and the importance of early treatment in AML, raises the question of how patients who did not see a haematologist would have been managed if they had been referred.

S4-P18 THE PATIENT, DIAGNOSTIC, AND TREATMENT INTERVALS IN ADULT CANCER PATIENTS: A META-ANALYSIS WITH COUNTRY SOCIO-ECONOMIC INDICATORS

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OBJECTIVES. The patient, diagnostic, and treatment intervals are considered core indicators for early diagnosis and treatment. The goal of this review was to estimate the median duration of these intervals for various types of cancer and compare it across high and lower-income countries.

METHODS. We conducted a systematic review with meta-analysis (pre-registered protocol CRD42020200752). Seven information sources were searched to identify articles published during the period 2009-2020 reporting the duration in days of the following intervals in adult patients diagnosed with symptomatic cancer: patient interval (from the onset of symptoms to the first consultation), diagnostic interval (from the first consultation to diagnosis) and treatment interval (from diagnosis to treatment start). The methodological quality of studies was assessed using the Aarhus checklist.

RESULTS. 329 articles from 64 countries and reporting on 5,127,421 patients were included. Pooled meta-analytic estimates were possible for 34 types of cancer. In studies from high-income countries, pooled median patient intervals varied generally between 20 and 30 days. However, these were consistently 1.5 to 3 times longer in lower-income counties for virtually all cancer sites.

The longest diagnostic intervals were observed for hematological, gynecological, and digestive/gastrointestinal cancers, and the longest treatment intervals for prostate cancer, with few studies available from lower-income countries.

CONCLUSIONS. Patient intervals are consistently longer in lower income countries. The majority of studies were conducted on patients with breast, colorectal, lung, and head and neck cancer. More studies are needed on patients with other types of cancer and especially on diagnostic and treatment intervals in lower-income countries that often do not have health information systems in place to record such information (e.g., population-based cancer registries, national cancer databases).

S4-P19 FACTORS ASSOCIATED TO MANAGEMENT AND OUTCOMES OF PANCREATIC CANCER IN FRENCH CLINICAL PRACTICE

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OBJECTIVES: Surgical resection is the only potentially curative treatment of pancreatic cancer, and its indication relies on precise imaging criteria and on patients' operability. Chemotherapy is recommended except for patients with very short life expectancy. Our objective was to identify patients and tumour determinants of pancreatic cancer patterns of care and outcomes

METHODS: 912 patients diagnosed with pancreatic cancer from 2014 to 2017 were registered by the population-based cancer registry of Burgundy (France). Logistic regressions were used to identify factors associated with treatment. Progression-free, observed and net survival were modelled and estimated.

RESULTS: 52% of tumors presented with metastasis. Among the 20% of patients fulfilling resectability criteria, half of those aged 75-84 years and none of those >=85 years actually underwent resection. Age, sex, and performance status were significantly associated with the proportion of resected patients whereas Charlson index, deprivation and tumor location were not. Age was not associated with 3-year observed survival in patients who underwent resection. 77% of patients aged <75 years, 55% of those aged 75-84 years and 8% of those >=85 years received chemotherapy. Among patients who were offered chemotherapy,73% of those aged >=85 years refused. The likelihood of refusal was higher in patients with a performance status>1 (31%) thanin those with a performance status=0-1 (9%, p<0.001), whereas the Charlson index was not associated with refusal.

Chemotherapy toxicity was higher with Gemcitabine_Oxaliplatin/Gemcitabine_Abraxane and FOLFIRINOX than with the Gemcitabine regimen. Among the 287 patients exposed to disease progression, the 1-, 2- and 3-year progression free survival was respectively 51%, 23% and 13%. Three-year net survival was 35% in patients with non-metastatic resectable tumors and under 10% for other patients. Age was not associated with 3-year observed survival in patients who underwent resection.

CONCLUSIONS: Only half of patients aged 75-84 years with a resectable tumor actually underwent resection. Two thirds of patients aged >=85 years refused chemotherapy, underlining the need to expand geriatric assessments.

S4-P20 EVALUATION OF THE EFFECTIVENESS OF THE BREAST CANCER SCREENING PROGRAMME IN SOUTH SPAIN OVER A 15-YEAR PERIOD

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OBJECTIVES: Population-based screening programmes (SP) are the most important tools for secondary prevention of breast cancer. In Spain, they began in the 90s, reaching complete coverage in Andalusia (south Spain) from the year 2000. The objective of the SP is the early detection of tumours that has an impact on a greater probability of survival and cure. Population-based cancer registries are an essential element for evaluating the effectiveness of a SP.

METHODS: All women identified through the Granada Cancer Registry between 50-69 years old who were diagnosed with breast cancer in the period 2002-2016 in the province of Granada were included. Data of participants and results in the breast cancer SP were provided by the Regional Health Government for the same period. Both databases were linked in order to classify patients into 5 categories: cases detected by the SP; interval cancers detected by the SP; interval cancers not detected by the SP; cases not participating in the SP; cases not invited to the SP.

Frequency distribution and 1 to 5-years observed and net survival were calculated across that classification and for age group, stage at diagnosis and year of incidence. Net survival was computed using the Pohar-Perme method, adjusting for the lifetables of the overall mortality in Granada by year and age.

RESULTS: 2,709 women of 50-69 years of age diagnosed with breast cancer in the period 2002-2016 were included. 43% of them were cases detected by the SP, 26% no-participants, and 13% not invited to the SP. 18% of cases were interval cancers. 88% of the cases detected by the SP were stage I and II, compared to 73% of those not detected ($p<0.001$). 5-year net survival of cases detected by the SP was 97.3% (95% CI: 95.6-98.3), in contrast with 87.2% in cases not detected (95% CI: 85.1-89.0).

CONCLUSIONS: The breast cancer SP in Granada proved to be effective for the early detection of breast cancer and had a positive impact in the survival of diagnosed women.

S4-P21 THE EFFECT OF ONCOGERIATRY IN THE PATIENTS OF THE HOSPITAL DE BRAGA

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OBJECTIVE. According to WHO´S DATA, between 2015 and 2050 the world population with age above 60 years, will double, which represent an increase from 12 to 22%. In developed countries one third of the patients diagnosed with cancer are above 75 years.

The objective of this work is to characterize the population that was diagnosed with cancer with age similar or above 75 years, which their first medical appointment at the Hospital of Braga was between 2018 and 2019.

MATERIAL E METHODS. This is a retrospective observational study of the new cancer cases, inserted in the National Oncologic Registry Platform of the Hospital de Braga, which the first specialty appointment was between January 2018 and December 2019. Cases were followed until December 2018 for vital status, and survival was estimated using Kaplan-Meier function.

RESULTS. Between 2018 and 2019, 6245 new cancer cases were admitted in Hospital de Braga, where 35% were over 75 years old. From these 11% were prostatic cancer, 5% breast cancer, 4% lung cancer and 18% were digestive cancers (6% colon, 3% rectum, 6% gastric, 1% esophagus, 1% hepatobiliary, 1% pancreas).

Variables as performance status, stage at presentation, time between first hospital observation and treatment and global survival were determined the main sites and compared by age group.

We found that patients with lung cancer and digestive cancers (except colon and rectum) are the worse prognosis (<35% sure) from 75 over even being treated with chemotherapy (18% - 36%). Most of these cases present stage III-IV (varying from 46%-100%) and performance status (ECOG) with high representativity in the 3 and 4 levels.

After finishing the follow up for patients with age above or equal to 75 years old, 53% cases had died (1141).

CONCLUSION. In this sample, 35% of the population is aged 75 years or more. The treatment and follow-up of this group of patients should consider age-related particularities, such as comorbidities, functional status, psychosocial status, and a percentage of the population that did not receive any benefit from the treatment they were administered.

S4-P22 ADHERENCE OF UROLOGISTS TO THE RECOMMENDATIONS OF THE COMITÉ DE CANCÉROLOGIE DE L'ASSOCIATION FRANÇAISE D'UROLOGIE (CCAFU) IN LOCALIZED KIDNEY CANCER (CT1-CT2N0M0)

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OBJECTIVES. The objective of the study was to analyse urologists' adherence to the CCAFU recommendations in the management of cT1 and cT2 kidney cancer in patients living in the Hérault region at diagnosis.

METHODS. Diagnostic and therapeutic management of localised kidney cancer (cT1N0M0 and cT2N0M0) diagnosed between 01/01/2017 and 12/31/2019 were compared with CCAFU recommendations. Data were extracted from the RHESOU database (Registre Hérault Spécialisé en Onco Urologie).

RESULTS. The study involved 598 cases: 364 (60.9%) cT1aN0M0, 168 (28.1%) cT1bN0M0, 49 (8.2%) cT2aN0M0 and 17 (2.8%) cT2bN0M0.

All patients had an imaging examination according to the recommendations (CT or MRI).

Tumor biopsy was performed in 47.7% of cT1 and 7.6% of cT2 patients. It is recommended if it is likely to modify the therapeutic management, if an ablative treatment or an active surveillance decision can be considered. Biopsy results contributed to the diagnosis of kidney cancer in 95.8% of cases. Patients with a cT1N0M0 tumor could benefit from an adapted therapeutic management: radiofrequency (11.8%), active surveillance (7.7%).

Partial nephrectomy (PN) is the first-line treatment for T1a tumors when technically possible. It concerned 218 cT1a (82%). For the remaining cases, total nephrectomy (TN) was performed.

For cT1b-cT2 tumors, NT is recommended (if NP is not possible) and this concerned 149 cases (71.6%).

Lymph node dissection is not recommended for cN0 patients. For 474 nephrectomies, 26 (5.5%) didn't follow recommendations.

For cT1b/cT2N0M0 tumors, adrenalectomy is recommended if there is adrenal invasion. It was performed outside the recommendations in 36 cases (17.3%) of the 208 nephrectomies.

In 266 nephrectomies for cT1aN0M0 tumors, 13 adrenalectomies (4.9%) were performed outside the guidelines.

CONCLUSION. Diagnostic and therapeutic management of cT1 and cT2 kidney cancers in the Hérault region mostly follows the CCAFU recommendations.

S4-P23 PROGNOSTIC IMPACT OF PREPHASE TREATMENT PRIOR TO FIRST-LINE TREATMENT IN DIFFUSE LARGE B CELL LYMPHOMAS: A CANCER REGISTRY STUDY WITH PROPENSITY SCORE MATCHING.

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BACKGROUND. Prephase (PP) is recommended to avoid tumour lysis syndrome prior to standard first-line treatment (first-cycle effect) in diffuse large B cell lymphomas (DLBCL). Given the negative prognostic impact of decreasing immunochemotherapy (ICT) intensity dose, we aimed to evaluate overall survival (OS) according to PP. Secondary outcomes were progression-free survival (PFS) and grade III-IV toxicities during the first cycle.

METHODS. All DLBCL cases diagnosed between 2014 and 2017 in the Poitou-Charentes area (France) and aged between 18 and 80 years were identified by the General Cancer Registry. Patients with at least one cycle of ICT were included. PP was defined as any treatment prior to first-line, excluding anthracycline and/or immunotherapy (Rituximab). We performed propensity score matching (PSM) to control characteristics at diagnosis, reduce bias and approximate a randomized trial.

RESULTS. Three hundred and forty patients received first-line ICT in 17 hospital centers: 126 (37%) with prephase and 214 (63%) without prephase (NPP). Before PSM, PP patients had more bulky mass (53% vs 33%, P=0.0003) and aaIPI >= 2 (76% vs 46%, P<0.0001); PP patients had 2-year OS of 67% (vs 85%, P=0.0018), 2-year PFS of 61% (vs 77%, P=0.0011) and 32% grade III-IV toxicities (vs 24%, P=0.14). After PSM, 97 patients remained in each group without significant difference in characteristics at diagnosis; matched PP patients had 2-year OS of 71% (vs 77%, P=0.32), 2-year PFS of 61% (vs 74%, P=0.12) and 26% gradeIII-IV toxicities (vs 27%, P = 0.75).

CONCLUSION(S). PP does not seem to decrease the first-cycle effect and does not seem to improve OS nor PFS. Further studies are needed to evaluate the efficacy and safety of prephase treatment, especially for elderly patients or those with high tumor load.

S4-P24 PATTERNS OF CARE AND SURVIVAL FOR LUNG CANCER: RESULTS OF THE EUROPEAN POPULATION BASED HIGH RESOLUTION STUDY

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OBJECTIVES. To describe lung cancer patterns of care, adherence to selected clinical guidelines and evaluate their effect on the prognosis

MATERIALS AND METHODS. We analysed 4602 patients (7 CRs in Belgium, Estonia, Portugal, Spain, Switzerland), diagnosed in 2010-2013 and followed-up to 30/09/2019. Covariates considered in the multivariable models were: country, age, gender, ICD-O codes for topography and morphology, TNM stage, main treatment and diagnostic procedures, Charlson comorbidity index, smoking, performance status. Five-year expected relative survival was estimated by the Ederer II method. The effects of the covariates on treatment and survival were tested by multivariable logistic regression models (statistical significance of the Odd Ratios(OR) and Relative Risk Ratios (RR) at $p<0.05$).

RESULTS. Overall, 66.5% patients with stage I-II at diagnosis (5-year relative survival 45.0 (CI=40.1-50.5) were operated; 59% with stage III- IV (5-year relative survival 10.1 (CI=8.3-11.7) received systemic treatment only (chemo- radio- or targeted). Factors significantly associated with the odds of receiving surgery were: age at diagnosis >=70 (OR=0.4, CI=0.2-0.6), tumour localization in lower (OR=4.0, CI=1.5-11.2) or upper lobe (OR=4.0, CI=1.5-10.9), country (Estonia OR=2.5, CI=1.4-4.7).

In the multiple regression model including all cases, the RR was significantly associated with age (yearly increase of RR=1.01, CI=1.0-1.01), stage (RR by each increasing stage category=1.6, CI=1.5-1.7), surgery (RR=0.19, CI=0.15-0.23); NOS morphology (RR=1.27 CI=1.09-1.48), localization in main bronchus RR=1.41, CI=1.21-1.64), smoking (RR=1.37, CI=1.16-1.61), impaired performance status (RR=1.83 CI=1.55-2.16)

CONCLUSION. Although the prognosis of lung cancer patients is uniformely poor in all countries, the survival benefit of diagnosis at early stages were confirmed, indirectly supporting the relevance of accurate diagnosis investigation and screening for subjects at risk. Smoking and comorbidity can worsen prognosis.

S4-P25 20 YEARS OF EVALUATION OF BREAST CANCER SCREENING PROGRAMMES IN SWITZERLAND WITH CANCER REGISTRIES DATA: RESULTS, LESSONS AND PERSPECTIVES

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OBJECTIVES: Breast cancer screening programmes have staggeredly been developed in Switzerland since 1999, concomitantly to opportunistic screening. Regional programmes contributed to the implementation of population-based cancer registries in some cantons. Evaluation of regional programmes and national monitoring of all Swiss programmes are regularly performed in order to maximize the quality and benefit-risk ratio of mammography screening.

METHODS: Anonymous records of invited women aged 50-74 years were extracted for each regional programme. At the national level, participation, quality and effectiveness of screening was monitored over the period 2010-2018 for 10 Swiss programmes and 1.92 million invitations based on European norms. For some longstanding programmes, screening participants since 1999 were probabilistically linked to the corresponding regional cancer registry in order to identify interval cancers. Clustered sequence analysis and optimal matching methods were applied to identify patterns of screening behaviour. Cumulated risks of recall, false-positive and detection rates over 10 and 20 years were computed.

RESULTS: Participation rates vary more across programmes (26-60%) than over time (40-50%). The increase in participation since 2015 was accompanied by an attenuation of regional differences. Quality of screening in Switzerland generally attained the recommended values and slightly improved over time. However, quality varied substantially across programmes. First screened women aged 50-51 had a 3-fold higher risk to experience a false-positive result than older women, whereas women aged 70-74 had the highest likelihood of a screen-detected cancer. In some longstanding programmes, the cumulated risk of a false-positive result was 19.4% over 10 years (5 participations) and 28.4% over 20 years (10 participations), and increased among more recently screened women. Interval cancers were relatively frequent in the second year after screening in some programmes. Their prognostic profile lie in-between those of screen-detected and symptomatic breast cancers, and were significantly more often triple-negative (4.3% vs 1.9%) and associated with BI RADS-D breasts (6.0% vs 3.4%) than screen-detected cancers.

CONCLUSIONS: Difficulties in comparing performance of recent and old screening programmes and in uniformly linking data from several programmes and cancer registries were mostly overcome. Estimating the impact of organised screening on breast cancer mortality in presence of opportunistic screening and efficient treatments remains a major challenge.

S4-P26 COMPARISON OF TIME TO TREATMENT IN COLORECTAL CANCER BETWEEN SCREENED VERSUS NON-SCRENEED PATIENTS IN TARRAGONA, CATALONIA, SPAIN

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OBJECTIVES: Delays from diagnosis to treatment are associated with poor outcomes in colorectal cancer (CCR) patients. Implementation of CRC screening programmes achieved reductions in both mortality and incidence. For people outside the age group or no participants in CRC screening, implementation of programmes can increase awareness of physicians in CRC diagnosis and referral to treatment. Our aim was to assess the clinical characteristics and time to treatment between screened CRC (SCRC) and non-screened CRC (NSCRC) patients diagnosed in the province of Tarragona, Catalonia, Spain.

METHODS: Incidence data for invasive and in situ CRC, in patients 50-69 years old at diagnosis, in the period 2012-2017, were obtained from Tarragona Cancer Registry. Variables: Mode of detection (SCRC and NSCRC), histology, behaviour, stage at diagnosis, date of diagnosis, date of first treatment and type of first treatment (surgery, chemotherapy and radiotherapy). Time to treatment in days was calculated. Comparisons of time to treatment between SCRC and NSCRC patients were performed by t Student and adjusted by stage.

RESULTS: 1541 patients. Mean age 61.2±5.4 years old. 19.8% SCRC. 35.4% in left colon, 25.4% in right colon and 24,5% in rectum sites. 90.8% invasive. 39.1% stages I-II. 72.4% with surgery as first treatment. Mean time to first treatment: 36.5±69.3 days.

As expected, SCRC patients presented lower proportion of invasive tumours (75.4 vs 94.6%, $p<0.001$) and higher proportion of stages I-II (54.9 vs 35.0%, $p<0.001$). No significant differences were observed in time to first treatment between SCRC vs NSCRC patients: 31.7±34.0 vs 37.7±75.6 days, $p=0.239$. Likewise, no differences were observed in time to treatment between SCRC and NSCRC after adjustment neither for stage nor for mode of first treatment. Subgroup analysis by colon cancer and rectosigmoid junction/rectum also showed no differences in time to treatment.

CONCLUSIONS: In Tarragona province, we did not observe differences in the time to treatment in CRC patients aged 50-69 years between screened and non-screened patients, which indicates that there are no differences in the care pathway for CRC by mode of detection in this age group.

S4-P27 EXPLORING THE IMPACT OF THE IMPLEMENTATION OF SCREENING PROGRAMS FOR COLORECTAL CANCER ON INCIDENCE AND MORTALITY IN EU

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OBJECTIVES. According to 2020 estimates, the colorectal cancer (CRC) is the second most frequently diagnosed cancer and the second cause of cancer death in EU. Organised population based colorectal cancer screening programmes (SP) have been implemented in the EU since the early 80's to decrease mortality. This analysis reports geographical comparisons in incidence and mortality for the EU population aged 50-74 years (the recommended EU age group for screening) before and after the implementation of SP.

METHODS. We included in the analysis 7 countries covered by national CRs and 34 areas covered by regional CRs with SP starting before 2010 and one country without screening in place. All these registries had at least 15 years of incidence recorded in the European Cancer Information System (ECIS). Malignant CRC cases (ICD-O-3: C18-C20) age 50 – 74 were included in the analysis with the exclusion of morphology codes 9050-9055, 9140, 9590-9992. Age standardised incidence and mortality rates (ASR) were extracted from the ECIS web application. Using the Joinpoint Trend Analysis Software, the annual percent change (APC) and the corresponding confidence intervals (CIs) were calculated.

RESULTS. An increase in incidence was observed in the majority of the areas / countries immediately after the screening started. One of the first SP was implemented in Florence (Italy) in 1982; an increase in incidence was here observed until 1998 (APC 2.02) followed by a significant decrease (APC -1.78). In Austria, where the SP started in 2003, a decrease in mortality was observed starting from 2007. In Slovenia the incidence showed an increase in 2010 followed by a decrease. In Bulgaria, where no screening program is in place, both incidence and mortally report increasing trends.

CONCLUSIONS. Geographical and time-trend variations in CRC incidence and mortality have been identified among countries implementing CRC SP until around 2009 and countries not implementing SP. Further analysis will be performed as soon as ECIS data will be updated.

Session 5

QUALITY REGISTRATION

S5-O18 CHARACTERISTIS OF FOCO, THE NEW EDUCATION PLAN IN THE NATIONAL CANCER REGISTRY OF CUBA (RNC).

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BACKGROUND: The RNC is one of the oldest population-based registries in Latin America, covering the whole population of the country, the highest in Latin America and the Caribbean. In the last years, has been a renewal technicians and specialists linked to the RNC and likewise, every year new doctors join the diagnosis and treatment of cancer patients, who must receive training in this area. We describe FOCO, the new integrated plan of education and training for human resources involved on RNC in collaboration with MediCuba Suiza and MediCuba Europa.

METHODS: The strategy of FOCO has been conceived including all professionals related to cancer data: registrars, doctors and Public Health managers. All of XVIII themes or areas of knowledge selected in this Plan are included on three level of education but stratified learning objectives and contents according to each of the training levels is done.

RESULTS: More than 15 professionals will participate on the teaching strategy of “Trainer of trainers”, which provides sustainability to the Project. Titular and Auxiliary professors are part of The General Board of FOCO and have the responsibility on decisions about the conduction of the educative plan, education platforms and selection of students for the Pilot phase. The educative principles and general organization of FOCO is shown.

DISCUSSION AND CONCLUSION: The learning needs of different professionals related to cancer data and cancer patients and the possibilities to use virtual platforms are the main motivations to develop this plan, taking into account the challenge we faced on the extreme health emergency caused by COVID 19 and the impact on cancer registries.

S5-O19 NEW LAW FOR CANCER REGISTRATION IN SWITZERLAND: CHALLENGES AND OPPORTUNITIES AFTER 2 YEARS.

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BACKGROUND: In Switzerland, the Cancer registration Act, a federal law in force since January 1st 2020, requires institutions and treating physicians to transmit regulated data on all cancer cases ans some cases of precancerous conditions to the competent cancer registry, and to inform their patients about it. What lessons have been learned during the past 2 years ?

CHALLENGES: Physicians faced with the diagnosis of a cancerous condition must specify the date of information of the patient when notifying the disease to the cancer registry. Collection of this information date is compulsory for the registration of any cancer case. This and the patient's right to object challenges the completeness of cancer registration for surveillance and research purposes. Another challenge is the great heterogeneity of the Swiss health information system, with each canton having its own organization. The structure of the data to be reported is defined centrally. This constrains institutions and physicians to comply with some registration standards when reporting cases but the system is far from reaching uniformity in data collection. Strengthening the partnership established between clinicians and epidemiologists is therefore a major challenge.

OPPORTUNITIES: Cancer registries must now record the unique "Old age and survivors" insurance identifier of every patient. This considerably facilitates data linkage across sources while limiting the risk of double registration. The digital transformation of health systems will enable faster collection and registration of cancer cases and a more efficient, standardized and traceable data analysis provided that registries invest in Information Technology resources to absorb this great amount of data. The use of artificial intelligence methods is an opportunity to improve data quality.

CONCLUSION: This legal basis is intended to enlarge cancer data collection and registration in a standardized, more complete and rapid manner. Legal amendments made after two years of application should help to ease the workload of cancer registries. In the mid-term, this law is expected to improve the reliability and efficiency of data analysis, which is crucial for the epidemiological surveillance of cancer in Switzerland, for the benefit of public health policy, clinical management and for the population.

S5-O20 AN UPDATED ELECTRONIC STAGING TOOL FOR POPULATION-BASED CANCER REGISTRIES: CANSTAGING+.

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BACKGROUND. While cancer staging is important for treatment planning and likely prognosis, discussion with patients is also important to facilitate monitoring of cancer outcomes at population level. Population based cancer registries (PBCRs) are key partners in assigning stage at diagnosis while adhering to internationally agreed, complex and regularly updated staging rules.

MATERIALS AND METHODS. In a collaborative international collaboration, we developed a user-friendly electronic staging tool, CanStaging+, for PBCRs based on UICC TNM classifications for adult cancers and on Toronto Paediatric Cancer Stage guidelines for childhood cancers, publicly available both online and as an offline tool, which will be demonstrated during the presentation. We also assessed variations in staging data collection across PBCRs from submissions to Cancer Incidence in 5 continents.

RESULTS. 346 registries out of 464 (75%) reported having collected cancer staging information between 2008 and 2012. The proportion varied greatly by world region, with 96% of some North America and Europe registries reporting collecting any staging information to only 52% in Latin America and the Caribbean. The collection of staging data also varied by cancer site, being higher for breast and cervix and lower for lung cancer.

CanStaging+ with anatomical drawings is designed to help maximise availability, standardisation and comparability of cancer staging internationally. The tool provides automatic calculation of the international TNM staging classification editions 7 and 8 for a variety of tumour sites. CanStaging+ now provides the two-tiered approach of Toronto childhood cancer staging for fifteen childhood cancer types. In addition it also hosts guideline for the Essential TNM including its diagram. In the future we aim to expand the tool to include translation in multiple languages.

CONCLUSIONS. We present an electronic staging tool for cancer registries available on and offline to enhance the completeness and comparability of cancer staging internationally. Specifically, for this conference we will present the new updates in particular on the childhood cancer staging tool. The project has been a true international collaborative effort, and continued collaboration is seek to join different sub-works of CanStaging+ e.g., expansion, implementation or capacity building.

S5-O21 THE AIRTUM STANDARDIZATION PROGRAM (STAND_AIRTUM) TO EVALUATE AND ENHANCE DATA STANDARDIZATION

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OBJECTIVES: Data Standardization is mandatory to enable national and international comparisons between different geographic areas and calculate time trends. Moreover, standardized data are necessary for studies on descriptive epidemiology, aetiology, risk factors and pattern of care. AIRTUM (Italian Association of Cancer Registries) has a long history in the promotion of data standardization and quality check, working groups were established to certificate the data of new registries and to check data to be included in the Association database. In order to assess the level of standardisation and data quality and expand these to other high resolution variables, AIRTUM has started a program (Stand_AIRTUM) to systematically evaluate the standardization of the data of Cancer Registries belonging to its network.

METHODS: Using the 'Quality Check Software' by ENCR-JRC and the 'IARCcrgTools' software by IARC internal consistency of data has been checked. To ensure comparability of cancer incidence rates from different populations worldwide the completeness, correctness and validity of data have to be assured; the Stand_AIRTuM program calculated several indicators to evaluate data quality, including the stability of incidence rate over time, the comparison of incidence in different populations, the age-specific incidence curve, the proportion of cases morphologically verified, the mortality to incidence ratio, the proportion of unspecified sites and the death certificate percentage.

RESULTS: Up to March 2022, 21 registries sent to Stand_AIRTuM a total of 789371 incident records from 1986 to 2017 to the standardization project. The standardisation of the variables of the Cancer Registry files was tested. The check software highlighted an initial average percentage of errors of 0.09% on the total number of cases (from 0.0% to 0.73%), with an average warning percentage of 2.86% (0.12% to 9.57%). Other indicators described in the methods section were also applied and an effort to standardise the data was performed at individual registry level that lead to more homogenous datasets.

CONCLUSIONS: Despite many difficulties encountered in the last years by Italian registries, mainly due to the Italian application of the European Community General Data Protection Regulation (GDPR, n. 2016/679) and COVID 19 pandemic impact, cancer registry data showed a satisfactory level of standardisation. This result will allow to use registry data in different areas of public health and scientific researches.

S5-P28 SPEED UP THE STANDARDISATION OF CLINICAL AND EPIDEMIOLOGICAL DATA – LUXEMBOURG'S NATIONAL CANCER REGISTRY DATA ALIGNMENT TO OMOP-CDM

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OBJECTIVES. Luxembourg's National Cancer Registry (Registre National du Cancer, RNC) includes rich population-based data, including data on treatments and follow-up, of all new cancer cases diagnosed and/or treated in Luxembourg. Established to assess incidence, mortality, and survival trends of cancer cases at national level, the RNC will gain further national and international benefits by linking its data with other data sources. In this study, the RNC explores to evolving its data structure towards more harmonised health data formats, and to further facilitating the use of clinical and epidemiological cancer-related data to improve patient outcomes.

METHODS. IT tools and processes are set up and implemented, as those developed by the international Observational Health Data Sciences and Informatics (OHDSI) open science collaboration, to convert the RNC data into the Observational Medical Outcomes Partnership Common Data Model (OMOP-CDM) – a model capturing patient data in the same way across different institutions. The European Health Data & Evidence Network (EHDEN), having received funding from the Innovative Medicines Initiative 2 (IMI2) Joint Undertaking (JU) under grant agreement No 806968, supports the data conversion process.

RESULTS. Using Python, R and OHDSI mapping tools, a pipeline was created transforming the data from the RNC relational model (containing four main variable tables: patient, tumour, treatment and multi-disciplinary team meeting) into the OMOP-CDM. During this process, about 600 variables and 9000 records from the current database are reviewed. In future, all new cancer cases collected by the RNC can be transformed into the same OMOP-CDM format by using this pipeline. The OHDSI software stack is also implemented, providing tools to the RNC describing and analysing data in the OMOP-CDM format.

CONCLUSIONS. With this new data format transformation, the RNC is broadening the use of its rich epidemiological cancer data, greatly facilitating the reuse of its data for research projects and potentially contributing its data to larger initiatives. This data harmonisation is particularly interesting for small-sized registries or for rare diseases, as pooling of data from numerous sources increases the amount of available data and improves chances of positive outcomes for patients.

S5-P29 LOCATING AND ACCESSING USEFUL ELECTRONIC RESOURCES FOR TUMOR REGISTRY PROFESSIONALS

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OBJECTIVE. In order for cancer registries to achieve the required quality and reliability, professionals need specific prior training in the use of standardized manuals and coding systems. but ongoing training is also essential to keep them up-to-date on all new developments and changes.

It is precisely this need for ongoing training and updating the justification and starting point for this study with the aim of knowing whether there is any platform or source of information that gathers all the electronic resources necessary and useful for the development of the functions of a registry of tumors.

METHODS. The search for information is carried out in databases, content managers and search engines all specialized in science and technology. In turn, they filter in the area of health and in disciplines related to tumor registries.

Information is searched from primary institutional and organizational information sources whose field of action and activity are, in whole or in part, related to tumor registries.

RESULTS. In the search of databases, content managers and specialized search engines, information related to tumor registries is located as a result of the scientific activity of researchers from different disciplines.

The search for information from primary institutional and organizational sources related to the activity that develops in the tumor registries locates electronic resources of their own, useful and necessary for the activity in the tumor registries.

There is no source of information that brings together all or the most important electronic resources that are frequently consulted in tumor registries.

CONCLUSIONS. It confirms the need to provide tumor registry staff with a tool that brings together all the resources and sources of information necessary for the performance of their tasks.

S5-P30 COLLECTION AND QUALITY OF OCCUPATION DATA IN CANCER REGISTRIES OF WESTERN SWITZERLAND: A MIXED-METHOD STUDY

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OBJECTIVES: The lack of occupational exposure data leads to a strong underestimation of the occupation-related burden of diseases. This issue is prominent in Switzerland where there is no estimate of occupation-related diseases burden, even for cancers such as malignant pleural mesothelioma or lung cancer. To overcome this situation, we launched a research project aimed at assessing the need for and quality of occupation data in cancer registries of Western Switzerland. We also aimed to find an optimal strategy for prospective collection of these data.

METHODS: We applied a mixed research method. We analysed completeness and accuracy of occupational data collected and coded by cancer registries compared with those provided by the Swiss Federal statistical office (SFSO). During a focus group, current strategies of occupational data collection and needs of registries were assessed.

RESULTS: Occupation collection and coding practices varied considerably between registries. Independently of the level of precision (5-3-2-1-digit aggregation level), quality of occupational data was higher in registries which actively searched and verified occupational information. Classification of occupations using the 3-digit code was an acceptable compromise in terms of precision. Having such occupations routinely collected in Swiss cancer registries would be valuable for epidemiological surveillance of occupational cancers. However, it could be insufficient to fulfill research objectives, where occupational coding should be more precise to determine patients' exposures.

CONCLUSIONS: Collection of occupational data by cancer registries faces many challenges in Switzerland and seems feasible only in the frame of research projects. Use of a standardized questionnaire retracing individual occupational history is recommended to enable assessment of individual occupational exposures. However, this approach will hamper the epidemiological surveillance mission of registries. A possible solution would be linkages of occupational data available in other sources such as the SFSO.

S5-P31 A COLLABORATIVE WORK TO IMPROVE DATA QUALITY FROM BRAZILIAN PBCR – THE CASE OF CI5 DATA SUBMISSION

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OBJECTIVES: develop collaborative technical work to improve data quality and enlarge visibility between the National Cancer Institute of Brazil and the Brazilian PBCRs in the framework of international collaboration with GICR/IARC

METHODS: Out of 30 PBCRs, 19 (60%) fulfilled CI5 timeliness criteria to send their databases to the CI5 data call; their standard quality indices were examined. We developed a Data Quality Webinar with six sessions (four recorded and two live sessions), in collaboration with the Hub LA using a GIRC/ IARC Learning material translated to Portuguese. This was followed by the development of a smart exportation script from INCA's PBCR software (BPW) to the database format according IARC/ IACR specifications. The "Call for Data" document and the "Questionnaire" were translated to Portuguese and a guide was elaborated, showing step by step, how to prepare the different files required for the data submission. Virtual meetings with PBCR were effectuated to give personalized assistance, when necessary.

RESULTS: Most PBCRs had a language barrier and were unfamiliar with the submission to CI5. From 19 PBCRs, 16 (84%) are sending their databases to the CI5 call, the double of the last call. The data quality indices improved after the webinar and assistance; the PBCR improved autonomy and reported that INCA team strategies and continuous assistance were crucial to help the PBCRs to attend the CI5 call.

CONCLUSIONS: Continuous training and support to develop skills to improve and analyze their databases is required. The collaboration between GICR, INCA and Brazilian PBCRs is crucial to improve data quality and strengthen international collaboration.

Session 6

METHOD AND EPIDEMIOLOGY

S6-O22 ENDOMETRIAL CANCER IN POPULATIONS OF AFRICAN DESCENT: A COMPARATIVE STUDY BETWEEN THE US STATE OF FLORIDA AND THE FRENCH CARIBBEAN

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OBJECTIVES: Endometrial cancer (EC) incidence and mortality are rising in the US and Europe. The more common endometrioid subtype is associated with better prognosis, while non-endometrioid histologies (e.g., serous, carcinosarcoma), which disproportionately affect African descent women, have worse 5-year survival. Here we study EC incidence and survival profiles for US African Americans, US Afro-Caribbeans, and majority African descent populations of Latin language in Guadeloupe and Martinique (part of the Republic of France).

METHODS: We analyzed 6,182 EC cases from Florida (2005-2018), Martinique (2005-2018), and Guadeloupe (2008-2018) Cancer Registries. Age-adjusted incidence rates and annual percent changes (APC) were estimated by racial/ethnic group and histologic subtype, and survival was compared using all-cause Cox proportional hazards models.

RESULTS: Overall EC rates are higher in US Black populations than in the French Caribbean (25.6 vs 12.7 per 100,000); this occurs for both endometrioid and non-endometrioid histologies. While trends for endometrioid cancers are stable, non- endometrioid rates have been uniformly increasing in US African Americans and French Caribbean women alike (APC 5.6% and 4.4%, respectively). For all EC cases combined, after adjusting for age, histology, stage at diagnosis, grade, receipt of surgery, and poverty level, women in the French Caribbean had a higher risk of death from all causes (HR 1.17, 1.02-1.34) in comparison to the reference US African Americans while US Afro-Caribbeans had lower all-cause mortality (HR 0.83, 0.74- 0.92). For endometrioid histologies, there were no differences between the US and the French Caribbean. However, French Caribbean women with non-endometrioid carcinomas had a 36% (HR 1.36, 1.11-1.68) higher risk of death than USAfrican Americans.

CONCLUSIONS: Complex differences in incidence rates by race and geography go beyond simplistic explanations such as the prevalence of obesity, hysterectomy, the higher risk among African descent women, and residence in a highly developed country. The alarming increasing trend for non-endometrioid carcinomas in both geographies warrants more research as does adherence to treatment protocols for carcinosarcoma and serous ECs given the survival disadvantage observed in the French Caribbean.

S6-023 BAYESIAN KERNEL MACHINE REGRESSION FOR ESTIMATING PROSTATE CANCER RISK OF HEAVY METAL MIXTURES IN THE EPIC-SPAIN COHORT.

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OBJECTIVES: The association of the exposure to several heavy metals with prostate cancer risk has been assessed in some studies, but the effects of complex interactions between heavy metals remains unclear. We aim to examine the association between metal mixtures exposure and prostate cancer risk in the European Prospective Investigation into Cancer and Nutrition cohort.

METHODS: The concentrations of 8 heavy metals (As, Cd, Cu, Hg, Se, V, W, Zn) was assessed in plasma samples of 304 males from the EPIC-Granada cohort (62 prostate cancer cases and 242 controls) by means of ICP-ORS-MS. We applied a Bayesian kernel machine regression distributed lag models (BKMR-DLM) to estimate the association between log-centered plasma metal concentrations with prostate cancer risk adjusted by potential confounders. BKMR-DLM were used to account for nonlinear, interactive, joint metal effects and time varying cumulative effects of heavy metals mixture exposures.

RESULTS: Four heavy metals (tungsten, cooper, mercury, and vanadium) were significantly and positively associated with prostate cancer risk in the adjusted models for age, education, physical activity, waist-to-hip ratio, body mass index, dietary patterns, smoking, and alcohol drinking habits. Using Bayesian kernel machine regression and distributed lag model (BKMR-DLM), the mixture vanadium+mercury+copper combined with another metal (arsenic, zinc, or cadmium) showed higher associations with prostate cancer risk (RR from 1.59 to 1.46). The mixture vanadium+mercury had also a positive significant association in combination with cadmium, zinc, arsenic, or selenium. The overall mixture of 8 metals was also significantly associated with the prostate cancer risk (RR=1.45; 95% CI: 1.21 to 1.68).

CONCLUSIONS: In summary, we found positive associations between the plasma levels of four metals (tungsten, cooper, mercury, and vanadium) and prostate cancer risk. The overall mixture concentrations were also associated with increased prostate cancer risk. Future studies are warranted to validate these findings in other prospective studies.

Funding: Health Council of the Andalusian Regional Government (Project number: PS-0281-2016)

S6-024 EFFECTS OF ATTENDANCE TO AN ORGANIZED FECAL IMMUNOCHEMICAL TEST SCREENING PROGRAM ON THE RISK OF COLORECTAL CANCER: AN OBSERVATIONAL COHORT STUDY

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OBJECTIVES. The primary objective of the study was to compare overall and sex-, age-, tumor-stage- and tumor-site-specific CRC incidence rates between attenders and non-attenders. The secondary objectives were to compare (i) overall and sex-, age-, tumor-stage- and tumor-site-specific incidence-based CRC mortality rates, and (ii) overall all-cause, non-CRC-related mortality rates.

METHODS. The program started in 2005. The target population included over 1,000,000 people aged 50-69 years. The FIT was a one- sample OC-Sensor (Eiken Chemical Co., Tokyo, Japan) (cut-off, >=20 μg hemoglobin/g feces). The average annual response rate to invitation was 51.4%. The records of people invited up to June 2016 were extracted from the screening data warehouse. Attenders were subjects who responded to the first 2 invitations or to the single invitation sent them before they became ineligible. Non-attenders were subjects who did not respond to any of these invitations. The records were linked with the regional CRC registry. People registered up to December 2016 were identified. Self-selection-adjusted incidence rate ratios (IRR) and incidence-based CRC mortality rate ratios (MRR) for attenders to non-attenders, with 95% confidence intervals (CI), were calculated.

RESULTS. The cohort generated 2,622,131 man-years and 2,887,845 woman-years at risk with 4,490 and 3,309 CRC cases, respectively. The cohort of attenders was associated with an IRR of 0.65 (95% CI, 0.61-0.69) for men, 0.75 (0.70-0.80) for women, and 0.69 (0.66-0.72) for both sexes combined. The self-selection-adjusted IRR was 0.67 (95% CI, 0.62-0.72) for men, and 0.79 (0.72-0.88) for women. The IRR for stage I, II, III and IV CRC was 1.35 (95% CI, 1.20-1.50), 0.61 (0.53-0.69), 0.60 (0.53-0.68) and 0.28 (0.24-0.32) for men and 1.64 (1.43-1.89), 0.60 (0.52-0.69), 0.73 (0.63-0.85), and 0.35 (0.30-0.42) for women. The overall incidence-based CRC MRR was 0.32 (95% CI, 0.28-0.37) for men, 0.40 (0.34-0.47) for women and 0.35 (0.31-0.39) forboth sexes combined. The adjusted MRR was 0.35 (95% CI, 0.29-0.41) for men and 0.46 (95% CI, 0.37-0.58) for women.

CONCLUSIONS. Attendance to a FIT screening program is associated with a CRC incidence reduction of 33% among men and 21% among women, and a CRC mortality reduction of 65% and 54%, respectively.

S6-025 COMBINING AN EPIDEMIOLOGICAL SURVEILLANCE SYSTEM FOCUSED ON HEALTH ENVIRONMENT WITH THE FRENCH CANCER REGISTRY NETWORK : IS IT FEASIBLE?

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OBJECTIVE : Since 2017, the EPIdemiology of Cancer and ENvironmental Exposure team (EPICENE) and the Gironde hematological malignancy (HM) registry team have launched a geographical research program to explore the impact of several environmental risk factors (pesticides, ultraviolet radiation, electromagnetic fields) on the HM incidence. Because, the pilot studies were successful to demonstrate a good feasibility to combine an epidemiological surveillance system focused on healthenvironment and the frenchcancer registry network (FRANCIM), our objective is to describe both the technical functionalities of the platform thus designed and the regulatory constraints.

METHODS : A platform has been created to match health-environmental data with clinical data from population-based French cancer registries.

Indirect exposure data (IGN and Mine Paris Tech) at a spatial level (like/as the municipality or the complete address) were transmitted independently of patient related data. The use of National aera or adresse identification key permitted to secure manipulation of health data in respect to french/european law (confidentiality and GDPR). The platform, which is hosted in a health institution, benefits from the legal and optimal level of health data protection.

RESULTS: This new platform has already permitted to estimate the spatial risks of HM as a function of two environmental exposure factors, UV and residential proximity to pesticide use. It was also used to reach/resolve methodological developments on statistical models for geographical data analysis.

Moreover, the platform was able to treat large databases (nearly 9,000 municipalities and several tens of thousands of HM) using powerful geographical statistical models. Geographical epidemiology analysis methods were available to estimate cancer risk based on available environmental exposures. This system allows ecological and case-control studies to be conducted.

CONCLUSIONS: Using this new health-environnemental platform, the French network of cancer registries is now able to propose new health-environment indicators in addition to the classical cancer incidence and survival estimates. The platform constitute the necessary tool for merging clinical and exposure data on a large scale. Furthermore, this plateform could be used in the cluster analyses in relationship with these environmental exposure factors.

S6-P32 DEVELOPMENT OF CANCER HOSPITAL REGISTERS IN CUBA

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BACKGROUND: The Cuban Cancer Registry is one of the oldest population-based registries in Latin America, covering whole population of the country. There are no cancer registries at the hospital level. At that level, some procedures are developed and cancer report information is stored. The design of a hospital cancer registry is being developed using the experience of different institutions from France and through the collaboration of a France /Cuba Project:"Accord Hubert Curien / Carlos J. Finlay".

METHODS: The main objective of the project is to establish the scientific and organizational bases for development hospital cancer registries in Cuba. The design was made of a hospital cancer registry for a general hospital at national and provincial level and to National Institute of Oncology. Breast and Lung cancer were selected to test the feasibility of models, methods and procedures.

RESULTS: The strategy followed in this project allowed the selection of variables in each cancer sites, the update of official models to collect the specific data, the proposal of general procedures for data quality control and data analysis. Expert consensus workshops and site visits will be planning. These activities with participation professors (oncologists and biostatistics) from France and Cuba should improve the preliminary design and contribute the training of doctors and other professionals involved in hospital cancer registries.

DISCUSSION AND CONCLUSION: Implement the pilot test of two cancer sites and three different scenarios will permit the assessment of the establishment and development of cancer registries in a wide types of hospitals, how to improve the collection of information, facilitate data analysis and in the future, how could be the extension of this model inside the country.

S6-P33 INTEGRATED SYSTEM FOR CANCER REGISTRY: A NEW APPROACH

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OBJECTIVES: Development of a single tool capable of receiving information from different types of cancer registries: outpatient, hospital-based and population-based. Construction in a way that allows the inclusion of multiple health units and groups that serve the units. It's Need to know the Brazil's supplementary health system.

METHODS: Developed an integrated system for cancer records, compatible with the web platform, responsive to devices such as a tablet, and compatible with the existing systems like a INCA's systems. It will be developed in three phases. The first phase has already been concluded with the creation of an minimum viable product (MVP), with the premises of culture and active collection. In the phase, planned routines will be elaborated for data collection with improvement of validations. And in phase three, an artificial intelligence capable of scanning other databases will be created to complement the information.

RESULTS: MVP creation, with different standardized forms for cancer registry types. In addition, a pilot is being conducted on a population-based cancer registry and a hospital registry.

CONCLUSIONS: The system is friendly and well accepted in the country's supplementary health network. In addition, they have the advantages of collecting different types and agglutination into a single cancer registry tool, speeding up the information collection process.

S6-P34 THE MULTI-SOURCE INFORMATION SYSTEM OF THE POITOU-CHARENTES POPULATION-BASED CANCER REGISTRY. ALGORITHMIC APPROACHES TO OPTIMIZE THE FIELD OF SURVEILLANCE, EVALUATION AND RESEARCH IN THE ERA OF BIG DATA.

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BACKGROUND – The General Cancer Registry of Poitou-Charentes (GCRPC), created in 2007, has experimented over 10 years a multi-source information system combining innovative methods of information processing and representation, driven by the computerization of medical data and the increasing interoperability of information systems. This work presents the founding principles and the expected benefits in the field of surveillance, evaluation and research.

METHODS – Highly structured data are collected on multiannual basis from 110 partners representing seven data sources (clinical, biological and medical administrative data). Supervised machine learning techniques were experimented to get around the possible lack of codification of pathology reports. Data integration and record linkage ensure entity reconciliation and semantic alignment to subscribe to algorithmic approaches. Two algorithms assist registrars by dematerializing the manual tasks usually carried out prior to tumor registration. A first algorithm generate the tumor record and its different components. A second algorithm summarizes the care pathway of each individual as an ordered sequence of time-stamped events. All raw and processed data are available and displayed in a secure interface. On this basis, all presumed incident cancer cases are checked and registered according to international rules, taking into account the textual documents (pathology, biology and multidisciplinary team meeting reports) and the tracer events issued from hospital discharge data.

RESULTS – The GCRPC registers an average of 13,000 new cases annually on four departments, with nearly 35% return to medical records required for the epidemiological surveillance objective. It is accredited by the evaluation committee of French registries and provides objective indications on high quality of data according to the four well-defined dimensions of comparability, validity, timeliness and completeness.

CONCLUSION – The algorithmic methods developed here have led to major efficiency gains by simplifying operational tasks upstream of tumor registration and ensuring high quality data. Data linkage on qualified and structured datasets enhances the contextualization and knowledge of care pathways, and support the strategic role of population-based cancer registres for real-world evaluation of care practices and health services research. This model promotes the reuse of standardized medical data available on a national scale, making it fully reproducible.

Session 7

INCIDENCE AND RECURRENCE

S7-026 HODGKIN LYMPHOMA IN BRAZIL: TRENDS IN INCIDENCE AND MORTALITY OVER FOUR DECADES.

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OBJECTIVE: The objective was to describe trends in incidence and mortality in Hodgkin lymphoma (HL) over four decades in Brazil.

METHODS: Incidence data were collected from Population-Based Cancer Registries (capitals) available online in the period 1988-2017, and mortality data from 1979-2019 in Brazil. Age-standardized mortality rates were calculated. Average Annual Percent Change (AAPC) was estimated for mortality and was analyzed in two calendar periods (1979-1999 and 2000-2019) using Joinpoint program.

RESULTS: Trends in incidence of HL for males in Brazil decreased in two capitals; Belo Horizonte -3.7% (CI95% -7.1; -0.3) and Salvador -8.5% (CI95% -13.0; -3.8) and was stable in all the others. For females two capitals had decrease in incidence (Salvador -9.5% (CI95% -15.3; -3.2) and Porto Alegre -3.9% (CI95% -7.0; -0.8)). Incidence rates remained stable in all other capitals. About mortality; males have yet a higher mortality rate in comparison with females. Although its decrease was more pronounced -2.2% (CI95% -2.5; -1.8) than for female ones -1.4% (CI95% -1.7; -1.1). Age distribution across the Brazilian states had a higher young incidence (15 to 30) while for oldest group above sixties there is no clear pattern beyond the states.

However, when analyzing the whole country, the bimodal distribution appeared.

CONCLUSION: Incidence trends of HL in Brazil has been stable over four decades while mortality rate is low and it is still declining all over the analyzed period. More studies are necessary for understanding real age distribution of this malignancy in Brazil, including more data from the countryside.

S7-027 INCIDENCE AND TRENDS OF MARGINAL ZONE LYMPHOMAS IN THE PROVINCE OF GIRONA, 1994-2018

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OBJECTIVES: Marginal zone lymphomas (MZLs) are indolent B-type non-Hodgkin lymphoid neoplasms and are classified into three large groups: 1) splenic marginal zone, 2) nodal, and 3) extranodal. The objective of this study is to analyze the incidence and population trend of MZL in the province of Girona, as well as to describe these indicators based on the location in the case of extranodal ones.

METHODS: Population-based study of MZL collected in the Girona Cancer Registry between 1994-2018. Cases coded with morphological codes 9699 and 9689 according to the International Classification of Diseases for Oncology (ICD-O-3) were included. Sociodemographic data, tumor location and stage were obtained from clinical records. Crude incidence rates (CR) and age-adjusted incidence rates were calculated according to the 2013 European standard population (ASRE) and expressed per 100,000 inhabitants. Joinpoint regression models were calculated for the trend analysis, calculating the annual percentage changes (APC) of the ASRE for the different MZL groups.

RESULTS: 472 MZL were included, 44 (9.3%) were nodal, 288 (61.0%) extranodal, 122 (25.9%) splenic, and the rest (n=18) MZL, SAI. Overall, the median age at diagnosis was 68 [IQR: 57-77], and 51.5% were diagnosed in men. Globally, the CR for the MZL was 2.90 (95% CI: 2.64-3.16), the ASRE 3.26 (95% CI: 2.97-3.57) and APC 1.83 (95% CI: 0.73-2.93). Specifically, the CR and ASRE for nodal MZL were 0.27 (95% CI: 0.19-0.35) and 0.30 (95% CI: 0.22-0.40), respectively. These lymphomas showed an APC of 7.94% (95% CI: 1.47-14.83), this being higher in men than in women. For extranodal MZL, CR and ASRE were 1.88 (95% CI: 1.67-2.09) and 2.11 (95% CI: 1.88-2.36), respectively. The APC was -0.11 (95% CI: -1.39 – 1.19). The most frequent locations of this type of MZL were the gastric (35.4%), skin (13.2%), respiratory system (11.8%) and eyes and adnexa (10.1%). Finally, the CR and ASRE of the splenic MZL were 0.75 (95% CI: 0.62-0.88) and 0.85 (95% CI: 0.71-1.02) with an APC of 5.41 (95% CI: 3.24-7.62).

CONCLUSIONS: This study can reveal differences in the incidence and trend of the incidence of MZL in Girona depending on the subgroup, showing a significant increase in the splenic and nodal groups. Our data further complements the few epidemiological studies of site-specific extranodal MZL.

S7-028 INCIDENCE, MORTALITY AND TRENDS IN CERVICAL CANCER IN SPAIN.

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OBJECTIVES: In 2020 the WHO launched a global strategy to accelerate the elimination of cervical cancer. The aim of this study is to know the current epidemiological situation of this cancer in Spain.

METHODS: Incidence and mortality data provided from the Spanish cancer registries and the National Institute of Statistics. Incidence data for Spain as a whole were estimated using the method based on incidence/mortality ratios. We analysed the trend in the incidence of invasive cervical cancer (ICC) in Spain for the period 2001-15, overall, by age group and by the two main histological subtypes, as well as the projection for Spain up to 2022. The evolution of incidence by province was also described. The trend of cervical cancer mortality in Spain for the period 2000-2019 was analysed. Results are presented in number of cases/deaths, age-standardized rates per 100.000 (ASRw) and annual percentage change (APC).

RESULTS: It is estimated that 2,480 cases of ICC will be diagnosed in Spain in 2022 (ASRw: 6.5), 2% of cancers in women. By age group: 1,032 in the 25-49y age group, 1,000 (50-69y) and 441 (70+y). Between 2001 and 2015, the incidence ASRw went from 7.1 to 6.0 (APC: -1.1% (-0.6; -1.6)). APC by age group: 25-49y -1.9% (-2.7; -1.0); 50-69y 0.3% (-0.8; 1.5) and 70+y -0.7% (-2.3; 0.9).

The proportion of squamous carcinomas to total cancers decreased from 69% to 67% between 2001-03 and 2013-15. The evolution of deaths from squamous cervix cancer by province was very heterogeneous (decrease/stability).

In the 5-year period 2015-2019 the average annual number of deaths from cervical cancer was 651 (ASRw: 1.4, 1.5% of all cancer deaths in women). Between 2000 and 2019, the mortality ASRw decreased from 1.6 to 1.4 with an APC of -0.6% (-1.4; 0.1). By age group the APC were: 25-49y -2.3% (-3.8; -0.7); 50-69y 0.0% (-1.2; 1.3) and 70+ys -0.3% (-1.5; 1.0).

CONCLUSIONS: Since 2001 there has been a slight decrease in incidence without yet reaching the WHO target (ASRw: 4.0) and that has been observed only in squamous cell carcinomas. The mortality ASRw is only 1.4, 1.5% of cancer mortality in women.

S7-029 INVASIVE WOMEN BREAST CANCER RECURRENCE RATE IN SOUTHERN SWITZERLAND: A POPULATION-BASED STUDY 2000-2020

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OBJECTIVES: The likelihood of recurrence is influenced not only by the biological characteristics of the disease but also by the provided quality of care. The aim of this study is to calculate the 5- and 10-year recurrence rates in women with invasive breast cancer (IBC).

METHODS: we consider all women with IBC diagnosed during the years 2000-2010 in canton Ticino, southern Switzerland. Exclusion criteria are the following: death certificate only cases, lymphoma and sarcoma, cases with distant metastasis at diagnosis, women not receiving surgical treatment or with missing biological tumour characteristics. Recurrence is defined as a new invasive cancer occurring after a previous cancer in the same breast, in the lymph nodes or in distant sites. Cancer appearing in the same breast, but with different histology group according to the IACR-ENCR multiple primaries ICD-O-3 group, or in contralateral breast with same or different histology group are considered as a new case. Only the first local, lymph-nodal or distant recurrence is considered. The 5- and 10-year recurrence-free survival (RFS) are calculated using the Kaplan-Meier method. Adjusted 5- and 10-years RFS are calculated using multivariate Cox regression taking into account the biological characteristics of the tumour (Luminal A, Luminal B, HER2-positive and triple-negative), stage and age at diagnosis. The follow- up is at 31.12.2021.

RESULTS: of the3006 cases of IBC during the period 2000-2010, 2323 (77.3%) met the inclusion criteria. 263 (11.3%, IC95%: 10.0%-12.6%) women experienced a recurrence within 5 years from the diagnosis, while 424 (18.3%, IC95%: 16.7%-19.8%) had a recurrence within 10 years from the diagnosis. Of the 424 women with recurrence within 10 years from the diagnosis 224 (52.8%) had distant metastasis, 148 (34.9%) local recurrence and 52 (12.3%) had lymph-nodal recurrence.

CONCLUSIONS: cancer recurrence rate is an important parameter to be integrated in the follow-up protocols of breast cancers women, helping thus in the choice of the appropriate follow-up. Moreover, it could represents an additional quality indicators of treatments, which can accompany the analysis of survival. In order to achieve a common approach for inter-regional comparative studies the standardisation of the definition of the recurrence event needs further elaboration.

S7-P35 LUNG CANCER: TRENDS BY SEX, HISTOLOGY AND STAGES FROM 1995 TO 2019 IN HÉRAULT, FRANCE

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OBJECTIVES. In France, lung cancer is the third most common cancer and the third leading cause of cancer death in women. Hérault is one of the French departments where the incidence of lung cancer is the highest in women. The main objective of this study is to analyse specificities of lung cancer in an administrative district in France, focusing on sex, histology types, staging and trends over time.

METHODS. The lung cancer incidence data from 1995 to 2019 were extracted from the Hérault cancer registry. Annual percent changes (APCs) and 95% CI of the age-standardized incidence rates by sex, histology type, stage TNM and age group were estimated using log-linear models.

RESULTS. Among the 15,999 patients studied, 27.9% were women, 44.8% adenocarcinoma and 43.8% stage IV.

Lung cancer incidence is increasing in the female population with APC 6.4% [5.7%; 7%] and slightly increased in the male population APC 0.9% [0.7% ; 1.1%].

The incidence rates of squamous cell carcinoma and small cell carcinoma significantly decreased for both genders, whereas that of adenocarcinoma significantly increased among almost all age groups in both genders.

The incidence rates of males are significantly increased among stage I, II, IV whereas that of stage III is slightly decreased -0.9% [-1.7% ; -0.16%]. The incidence rates of female are significantly strongly increased among all stage: Stage I 10.9%[9% ; 12.9%], stage IV 6.6%.[5.5% ; 7.7%]

CONCLUSION. This population-based study confirmed the specific features of lung cancer: slightly increase of incidence on male whereas stronger increase on female, increase adenocarcinoma incidence for both gender, increase of all stage at diagnosis for both gender but faster increase for female specially stage IV and stage I.

These results raise the question of possible differences to lung cancer susceptibility between males and females and the question of screening of lung cancer.

S7-P36 EPIDEMIOLOGIC TRENDS IN PATIENTS WITH HEAD AND NECK CANCER IN THE MANCHE FRENCH DEPARTMENT

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OBJECTIVES: Head and neck cancers are a heterogeneous group of malignancies, affecting various sites, with different prognoses but generally have a poor overall prognosis. The aim of this study was to describe the trends in Incidence and Survival for patients with head and neck cancers in relation to tumour location in the population of the Manche French department.

METHODS: Data from the Manche Cancer Registry were analyzed for the period 1994-2019. World age-standardized incidence were analyzed using a Poisson regression model, in order to estimate average annual percent changes (AAPCs). Standardized net survival estimates were modeled by penalized survival performed with SurvPen R-package.

RESULTS: Head and neck tract cancers represented less than 6% of invasive solid cancers in Manche. The distribution of cancers of the Head and neck differs in terms of location and trend between men and women. Firstly, oropharynx and larynx cancers were most numerous for men, whereas oral cavity cancers were more frequent for women. Second, the incidence of oral cavity and pharynx cancers in women of the Manche Cancer Registry increased quickly by 1.8% per year, whereas it decreased significantly in men (from 36.4 cancers/100,000 men between 1994 and 1998 to 19.7 cancers/100,000 men between 2014 and 2018). Incidence rates were slightly higher in Manche than in France, but they decreased faster (-3% per year). On the other hand, incidence of laryngeal cancers in men decreased less significantly in the Manche department (-2.3%) compared to France, while it not significantly increased in women to reach values still higher in Manche (1.3 100,000 women) than in France. Standardized net survival at 5 years was better for patients with laryngeal cancer (59%) than for those with oral cavity and pharynx cancers. Hypopharyngeal cancers had the worst prognosis, while nasopharyngeal and lip cancers had better prognoses. There was an encouraging improvement in survival (at 1, 5 or 10-year) of patients with upper respiratory cancers in our department as in France.

CONCLUSIONS: Gaps between female and male incidence of Head and neck cancers were reduced with time to the detriment of women. Despite the progress in terms of survival, efforts on the prevention of risk factors (alcohol, tobacco, papillomavirus) must be improved, especially among women.

S7-P37 MELANOMA INCIDENCE AND MORTALITY AND SKIN BIOPSY UTILIZATION IN ITALY: TRENDS AND CORRELATIONS

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OBJECTIVE. Cutaneous malignant melanoma (CMM) incidence has increased in many Caucasian populations. It is hypothesised that part of this trend is attributable to screening and overdiagnosis. We analysed the ecological association between trends in CMM incidence and mortality and the correlation between skin biopsy rates and incidence rates of in situ CMM and thin invasive CMM in Italy in the last two decades.

METHODS. Eleven local cancer registries covering a population of 8 056 608 (13.4% of the Italian population in 2010) provided the records of primary CMM cases registered between 2003 and 2017. Annual age-standardised (Europe 2013) mortality and incidence rates were calculated by invasion (in situ, invasive) and Breslow thickness (<=1 mm (or thin CMM), 1.01-2 mm, 2.01-4 mm, 4 mm). Age-standardized skin biopsy rates were calculated for the Emilia-Romagna region alone (35% of the total study population). Skin biopsy rates were based on administrative health data. Trends were described with the estimated average annual percent change (EAAPC). Correlations between skin biopsy rates and incidence rates were tested with the Spearman correlation coefficient. Multivariable linear regression was used to evaluate the association between skin biopsy rates and CMM incidence rates, adjusted for year and age.

RESULTS. CMM incidence increased significantly but the increase was steeper for in situ CMM (EAAPC: men, 9.1; women, 6.4) followed by thin CMM (6.7; 4.6) and CMM >4 mm thick (3.7; 3.7). Mortality was stable (men, 0.3; women, -0.3). Skin biopsy rates increased particularly between 2003 and 2010. Among men, the annual biopsy rate correlated significantly both with in situ CMM incidence rates (Spearman=0.582; P=0.023) and <=1 mm thick CMM incidence rates (Spearman=0.611; P=0.016), with anadditional number of 6.8 (95% CI, 4.2-9.5) in situ CMM and 6.6 (4.0-9.3) thin CMM diagnosed per 1,000 skin biopsies.

Among women, the correlations and the increase in diagnoses were not significant.

CONCLUSIONS. These results are compatible with the hypothesis that CMM incidence trends are, at least in part, attributable to overdiagnosis. Further research is needed to explain the negative findings among women and to quantify the contribution of overdiagnosis to the incidence increase.

S7-P38 MACERATA PROVINCE - INCIDENCE 1996-2000 VS 2011-2015: ALL CANCER SITES AND LUNG CANCER

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OBJECTIVES. The following study aims to evaluate the incidence trend for all cancer sites and for lung cancer comparing the data collected by the Macerata Province Cancer Registry in the period 1996-2000 with the data collected by the Marche Cancer Registry in the period 2011-2015, relating to the resident population in the Macerata Province.

MATERIALS AND METHODS. We analyzed and compared the temporal trend of the incidence of neoplastic diseases for all oncological sites, with a focus on the cancer lung: the number of new cases of tumor (excluding skin and non-malignant CNS); crude and standardized incidence rates (STD 2013) by age and gender; mean and median age; distribution by oncological site; analysis for large age groups; national comparisons based on the calculation of the STD rate with respect to the territorial realities: Central Italy; Northern Italy, Southern Italy and Islands (Cancer numbers in Italy 2019).

RESULTS. In the period 1996-2000, in Macerata Province, 9215 cases were diagnosed for all cancer sites (5209 M and 4006 F). In the period 2011-2015 the diagnosed cases are 10961 (6010 M and 4951 F).

For the lung cancer, in the period 1996-2000, in Macerata Province, 932 cases were diagnosed (776 M and 156 F). In the period 2011-2015 the diagnosed cases are 959 (687 M and 272 F).

CONCLUSIONS. From the analysis of the standardized rate for all cancer sites, in the two periods examined, a tendency to decrease in the male sex (-19.1) and a slight increase in the female sex (+ 32.1) emerges.

Lung cancer, in the two periods examined, shows a tendency to decrease in the male sex (-26.5) and an increase in the female sex (+9.6). For the lung, the decrease in incidence in men as opposed to the significant increase in women seems to find an explanation in smoking, which decreased in the male population and instead increased in the female one.

S7-P39 INCIDENCE OF THE MAIN CANCERS IN FRANCE IN 2023

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BACKGROUND: Cancers remain a principal cause of mortality worldwide and according to WHO are responsible for 10 million deaths in 2020. Analysis of the cancer incidence evolution is essential for surveillance and control of this disease. In France, the national network of cancers registries frequently produces epidemiological data to allow and update the national health policy. The last incidence study occurred in 2018 and we propose to update the data. This current edition focuses on the incidence and aims to provide estimates of cancers in 2023. The particularity is that the study includes years of the COVID 19 pandemic and we suppose that the potential delays in diagnosis or disruptions in the care organisation will have been overcome so that the expected incidence in 2023 would be the same as without the epidemic. The impact of COVID-19 on the incidence of cancers is not investigated here.

METHODS: The data collection includes all the new cases of cancers recorded in the metropolitan cancers registries from 1985 to 2018 and the 20 most common cancer sites were analysed. Incidence trends are modelled with multidimensional penalized splines and estimations for 2023 produced for each cancer site by sex and age.

RESULTS: The number of new cases of cancer in 2023 in metropolitan France is increasing both in men and women. Similarly, the world standardized incidence rate (SIR) is rising. While for some locations the trends are in accordance with previous estimates, some sites show surprising recent trends.

CONCLUSIONS: These results confirm the importance of cancer registration and show that the evolution is not completely predictable. Despite the increase in the size of the population and its aging, the risk linked to cancer itself is not yet under control. It is therefore essential to continue prevention and screening actions to hope reducing the mortality and the impact linked to cancer. Even if the pandemic consequences were not studied, these results can be used as a reference for a next comparison with real data when they will be available.

S7-P40 THYROID CARCINOMA ANATOMOPATHOLOGIC AND HISTOPATHOLOGIC PATTERNS AND TRENDS : A POPULATION-BASED STUDY IN ALGERIA

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BACKGROUND : We analyzed data from a population-based cohort study to describe anatomopathologic features according to histologic subtype of thyroid cancer (TC) patients diagnosed during 1993-2013 in Oran, Algeria.

METHODS : Medical records and pathologic reports of patients who had undergone thyroid surgery were reviewed. Histyologic and anatompathologic patterns and trends were described.

RESULTS : From 1993 to 2013 1 443 patients were diagnosed with TC. Papillary thyroid carcinoma (PTC) and follicular thyroid carcinoma (FTC) were the most frequent histologic subtypes (59,5% and 30,4% respectively). Age at diagnosis varied with histology. PTC and FTC were diagnosed during the fourth decade of life and anaplastic thyroid carcinomas (ATC) during the fifth decade. Thyroid nodules were observed in 92,5% of TC patients and increased significantly with time (81,1% in1993-1997 to 95,1% in 2008-2013 ; $p<0{,}001$). Tumor size decreased significantly with time (32,6±19,4 mm in1993-1997 to 24,4±16,8 mm in 2008-2013 ; $p<0{,}01$) and led to an increased frequency of microcarcinomas of the thyroid (MCT) (6,1% in 1993-1997 to 25,2% in 2008-2013; $p=0{,}014$). Self-neck check was the most frequent circumstance of TC diagnosis, except for patients with FTC who had (and were followed-up) for benign thyroid disease (goiter and nodules) in 94,9% of cases. PTC and FTC were associated with thyroid cold nodules in 49,0% and 51,2% of cases. PTC was the predominant histologic subtype in MCT (86,2%). ATC was only observed in TC >10 mm. Capsular effactions and angioinvasions were observed in 57,7% and 50,1% of TC patients, with higher frequency in FTC (80,0% and 89,5% respectively; $p<0.001$) and ATC (72,3% et 76,5% ; respectively $p<0{,}001$). Multifocality was rare, and only observed in PTC (18,8%).

CONCLUSION : The trend towards increased PTC-to-FTC ratio observed in Oran over the past two decades may be due, at least in part to the national programme of salt iodine supplementation introduced in the early 1990s. Our findings showing a high frequency of TC associated with thyroid benign diseases, and the presence of TC aggressive features in 25% of TC <= 10 mm highlight the importance of sustained follow-up of patients diagnosed with benign thyroid conditions.

S7-P41 COLORECTAL CANCER INCIDENCE TRENDS IN A REGION OF SOUTHEASTERN SPAIN, 1983-2018

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INTRODUCTION: Colorectal cancer is the third most frequent type of malignant tumor worldwide, being the most frequent cancer in Spain. This study aims to know how its incidence patterns have been, over 36 years, in the Region of Murcia.

METHODS: Data were obtained from the population-based Cancer Registry of the Region of Murcia. The incidence of colon and rectal cancer is analyzed from 1983 to 2018, by gender, age group (< 50, 50-69 and >=70), periods (1983-1990, 1991-2000, 2001-2010 and 2011-2018) and invasive and in situ behavior. Joinpoint Regression Program (Epitools Package) was used to analyse the magnitude and direction of temporal trends, calculating the average of the anual percentage change (AAPC).

RESULTS: Between 1983 and 2018, 27,460 cases of colorectal cancer were diagnosed in the Region of Murcia, 22,243 invasive and 5,217 in situ; 59.1% were men.

The AAPC from 1983 to 2018 was for men and invasive colon cancer for <50 1,448 (p 0.002), for 50-69 3,296 (p 0,000), and for >=70 3,443 (p 0,000); for in situ colon cancer 29,357 (p 0,000), 28,888 (p 0,000) and 38,124 (p 0,000); for invasive rectum cancer 0,632 (p 0,247), 1,305 (p 0,001) and 1,366 (p 0,089); and for in situ rectum cancer 18,93 (p 0,029), 33,984 (p 0,000) and 24,676 (0,110).

For women, the AAPC from 1983 to 2018 was for invasive colon cancer for <50 0,573 (p 0,241), for 50-69 1,474 (p 0,004), and for >=70 1,317 (p 0,001); for in situ colon cancer 17,472 (p 0,000), 20,92 (p 0,000) and 30,318 (p 0,000); for invasive rectum cancer -0,748 (p 0,308), 0,048 (p 0,902) and -0,159 (p 0,804); and for in situ rectum cancer 24,713 (p 0,000), 23,796 (p 0,000) and 29,5 (p 0,000).

CONCLUSIONS: The trend of invasive colon cancer has been slightly increasing throughout the period in both sexes, higher in men and in the older age groups. In invasive rectum cancer, increases are observed in 50-69 in men. Highlithed the trend in incidence of in situ colon and rectum cancer, which have experienced a large increase in both sexes, greater in the older groups.

S7-P42 INCIDENCE OF STOMACH CANCER IN PROVINCE OF SALAMANCA, 2011-2016

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OBJECTIVES. There are geographic variations in the incidence of stomach cancer, ranking 8th in Europe and 9th in Spain in 2018. In Salamanca, it was the sixth most diagnosed cancer in men and women in the study period.

The objective of the study was to describe and compare the incidence and distribution by age and sex of stomach cancer in the province of Salamanca against national data.

METHODS. Incidence data provided from the Castilla y León Population Cancer Registry (Province of Salamanca) from 2011-2016. Annual number of new cases per year (overall, by age group and sex), crude (CR) and age-standardized incidence rates to the 2013 European standard population (ARSE) were obtened. The Salamanca ARSE was compared to those estimated for Spain by REDECAN in 2019: 22.4 (95% CI: 20.2, 24.7) in men and 10.8 (95-% CI: 9.8, 11.7) in women.

RESULTS. Stomach cancer in Salamanca accounted for 4.2% of new cases, with an average annual incidence of 95 cases (SD: 6.5) and an overall CR of 27.5 (95% CI: 21.9, 33.0). It occurred more frequently among men than women (sex ratio: 1.4) and increased with age; By age group, 82.7% of cases were diagnosed in those over 64 years, 15.5% in those between 45 and 64 years and 1.8% in those under 45 years. The overall ASRE was 21.1 (95% CI: 12.3, 29.9), with male predominance, 28.3 (95% CI: 20.7, 35.9) vs 15.2 (95% CI: 10.1, 20.2) in women. Although this ASRE by sex were higher than those estimated for Spain (28.3 vs 22.4 in men and 15.2 vs 10.8 in women), differences were not statistically significant.

CONCLUSIONS. Stomach cancer was among the 6 most common in Salamanca in both men and women and showed male and in those over 65 years predominance. The observed incidence was similar to that estimated for Spain in both sexes. Comparisons can be affected by size of the population studied as well as differences in stomach cancer incidence across the years compared.

S7-P43 INCIDENCE TRENDS OF THE MAIN CANCER TYPES IN THE CITIES OF CUIABÁ AND VÁRZEA GRANDE, MATO GROSSO, MIDLLE WEST REGION OF BRAZIL

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OBJECTIVE: To analyze the incidence trends of the fifth main cancers by sex, in the cities of Cuiabá and Várzea Grande, Mato Grosso, Midlle West Region of Brazil from 2000 to 2016.

METHODS: Time trends analysis. The incidence data was obtained from the Population Based Cancer Registry of Cuiabá, between 2000 to 2016. Trends were analyzed by the Joinpoint regression model and to calculate the average annual percent change (AAPC), with a confidence interval of 95% (95%CI).

RESULTS: The main five cancer types excluding nonmelanoma skin cancer were: prostate (C61), lung (C33-C34), colon, rectum and anus (C18-C21), stomach (C16) and oral cavity (C00-C10) in men. In women were: breast (C50), cervix uteri (C53), colon, rectum and anus (C18-C21), lung (C33-C34) and thyroid (C73). In men, were observed a significant decline to stomach cancer (AAPC:-5.2%; 95%CI:-7.7;-2.6) and lung cancer (APPC:-2.2%; 95%CI:-4.0;-0.3). To prostate cancer, colon, rectum and anus and oral cavity a stability was observed. In women, were observed an increasing trend in breast cancer (AAPC:2.8%; 95%CI:0.2;5.5) and thyroid (AAPC:8.3%; 95%CI:4.6;12.2). For cervix uteri cancer was observed a significant decline (AAPC:-7.2%; 95%CI:-9.0;- 5.3). Colon, rectum and anus and lung cancer remains stable.

CONCLUSIONS: There were a decline in stomach and lung cancers in men. In women there are an increasing breast and thyroid cancer. A decrease was observed for cervix uteri cancer and stability for colon, rectum and anus and lung tumors. There was a shift in incidence towards younger age groups. These results demonstrate that effective measures should be taken to control cancer, as well the implementation of structured actions to reduce the growth trend and the disease burden.

S7-P44 EPIDEMIOLOGICAL TRENDS OF HAEMATOLOGICAL MALIGNANCIES IN BELGIUM 2004-2018: OLDER PATIENTS SHOWS THE GREATEST IMPROVEMENT OVER TIME

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OBJECTIVES. Haematological malignancies (HM) are common (11% of the total cancer burden in Belgium in 2018) and, at the same time, rare and heterogeneous.

We aim to analyse the epidemiological trends of HM in Belgium over a recent 15-year period, with a particular focus on the impact of age at diagnosis by type of HM.

METHODS. We studied the 23 main HM types registered at the population-based Belgian Cancer Registry for the incidence years 2004-2018 (follow-up until 01/07/2020).

We estimated age-standardised (WSR) incidence, Average Annual Percentage Change (AAPC), 5- & 10-year relative survival (RS) and RS trends.

RESULTS. The WSR incidence rates of HM increases in Belgium (AAPC: 1.2%), mainly in the 70+.

The 10-yr RS varies by age group and HM type. Acute lymphoblastic leukaemia (ALL) shows the greatest variation, from >90% below 10 yrs to <20% in 70+.

For each type of HM, outcome gets progressively worse with age. The greatest decrease in 5yr-RS is observed for aggressive HM, acute myeloid leukaemia (AML), ALL and Burkitt lymphoma: from 67%, 90%, 97% in children/adolescents to 2%, 12%, 16% in 80+, respectively.

The 5-yr RS of all HM increases over the 15 years with 5 percentage point (pp) from 64% in 2004-08 to 69% in 2014-18. ALL shows the greatest improvement (+14pp). No clear improvement is observed for most myeloid neoplasms except chronic myeloid leukaemia (CML) (+8pp).

Analysis by age group reveals impressive increases in the 80+, such as +45pp in Hodgkin lymphoma, +38pp in Waldenström macroglobulinaemia/lymphoplasmocytic lymphoma, +28pp in follicular lymphoma, +16pp in CML, +13pp in primary myelofibrosis, +12pp in chronic lymphocytic leukaemia. ALL shows a strong improvement (+22pp) in the 60-79. Peripheral T/NK-cell lymphoma and myelodysplastic syndrome (MDS) exhibit the greatest increase (+14pp and +13pp, respectively) in 20-59, and AML (+17 pp) in children.

CONCLUSIONS. The increased incidence and improved survival over time can be partly explained by the diagnostic and therapeutic innovations over the 2 last decades. This real-world population-based study provides useful information on patients usually excluded from clinical trials (those with advanced age, comorbidities, other malignancies). Older patients showed the greatest improvement over time. However, this study also highlights entities that need significant improvement, such as AML and MDS.

S7-P45 BREAST CANCER INCIDENCE IN THE VICINITY OF LANDFILLS IN GUADELOUPE, FRENCH WEST INDIES

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OBJECTIVES. Guadeloupe is a French archipelago of 400 000 inhabitants located in the West Indies. A previous analysis of geographical variations of cancer incidence in this territory showed a high incidence of breast cancer in some areas characterized by the presence of landfills. There are three open landfills in Guadeloupe in close proximity to homes. Our objectives were to study whether living near a landfill increased the risk of developing breast cancer and whether the association differed by hormonal status.

METHODS. We studied women breast cancers, using data collected by the population-based cancer registry of Guadeloupe over the period 2008-2017 (2040 cases). We conducted an ecological study at a small-area level. Exposure was defined as the distance from the residence to the nearest landfill. We used Besag-York-Mollié regression models to estimate the relative risk of breast cancer and 95% credible intervals for different zones around a landfill (< 2km, 2-4 km, 4-6 km), using an index of social deprivation as covariate. Analyses were conducted for all breast cancers and according to hormone receptor status, including estrogen (ER), progesterone receptor (PR), and human epidermal growth factor receptor 2 (Her2).

RESULTS. For all breast cancers, there was no association between living near a landfill and cancer incidence. However, for ER- breast cancer, a significantly increased relative risk was found for living less than 2 km (RR: 1.28 [1.11 ;1.49]) and between 2 and 4 km (RR: 1.12 [1.01 ;1.25] from a landfill. An increased risk of PR- breast cancer was also found for those living within 2 km from a landfill (RR: 1.16 [1.01 ;1.33]. Other hormonal subtypes were not associated with the vicinity of landfills.

CONCLUSION. There was an increased risk of developing ER- and/or PR- breast cancer for women living near a landfill. This risk decreased when moving away from the landfill and was no longer detectable beyond 4km.

S7-P46 INCIDENCE AND MORTALITY TRENDS FOR COLORECTAL CANCER IN NAVARRA

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OBJECTIVES: Colorectal cancer is the first in frequency of all cancer in incidence in Navarra. The colorectal screening programme began in Navarra in 2014. We present the trends in incidence and mortality rates in Navarra in the last four decades.

METHODS: The incidence data come from Navarra Cancer Registry, for the period 1975 to 2016. The source of mortality data was the Navarra Mortality Registry, from 1976 to 2020. All invasive cancers of the sites (CIE10) C18 for colon and C19, C20 and C21 for rectum and anus were studied together. We calculated the rates adjusted by age to the new European Standard population. Trends in incidence and mortality rates in four age groups, 30-49, 50-59, 60-69 and >=70 years old were analysed. The joinpoint regression analysis was performed to identify points where a statistically significant change in trend would have occurred.

RESULTS: Incidence and mortality rates in men double the rates registered in women. The most recent data show an incidence rate of 197.8 and 93.4 per 100,000 inhabitants in men and women while mortality rates were 62.1 y 30.4, respectively.

In men and women colorectal cancer incidence rates increased steadily since 1975 to 2016, representing more than a two-fold increase in overall rates.

Joinpoint regression analysis revealed that the mortality rates remained stable in women and men under 70 years of age. In persons over 70 years of age, the rates increased by 0.7% per year in men, and remained stable in women.

CONCLUSION: Colorectal cancer incidence and mortality rates show a different picture in Navarra, especially in younger age groups in which an upward trend for incidence and stable trend for the mortality was observed. The impact of the early detection programme in the incidence and mortality rates for colorectal should be study in the coming years.

S7-P47 TRENDS IN INCIDENCE AND SURVIVAL OF PANCREATIC CANCER IN THE SOUTHEAST OF SPAIN FROM 1983-2018: A POPULATION-BASED STUDY

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BACKGROUND/OBJECTIVES: Pancreatic cancer is the fourth leading cause of cancer-related mortality in Europe and one of the most fatal cancers worldwide, with five-year relative survival rates below 10%. Its increasing incidence and poor survival are global concerns. The aim of this study was to provide population-based incidence and survival trends of pancreatic cancer in the Spanish region of Murcia from 1983 to 2018.

METHODS: Data were obtained from the population-based Murcia Cancer Registry. All primary invasive incident pancreatic cancer cases occurring during the 1983-2018 period were included. Age-specific and age-standardized incidence rates per 100,000 person-years (py) were obtained, and Joinpoint regression analysis was used to estimate annual percentage changes (APC) in pancreatic cancer incidence. Cases diagnosed within the 1990-2010 period were followed up until December 31st, 2015, to calculate 5-year observed and net survival rates using the Pohar-Perme method. All the results were stratified by sex and age group.

RESULTS: A total of 3827 new patients were diagnosed with pancreatic cancer in the study period. Incidence rates doubled between the 1983-1988 and the 2013-2018 time periods (from 11.9 to 23.3 per 100,000 in men and from 7.8 to 16.2 per 100,000 in women). Incidence were higher in men than women in all the periods analyzed and age groups. An increasing trend was observed in both sexes overall, with a significant positive annual percentage change. The APC rise was more elevated in women, especially in the 55-64 y age group (APC: +7.7%; 95% CI: 4.9-10.5 in women vs. APC: +2.73; 95% CI: 1.8-4.3 in men). Net survival was 7.2%, (8.3% in women and 6.7% in men), and gradually decreased with age.

CONCLUSIONS: The incidence of pancreatic cancer in the Region of Murcia has significantly increased the last 35 years, especially among younger women. Net survival increased slightly from 6.0% to 7.7% in the last two decades, and remained very low in both sexes (<10%). These findings highlight the importance of tackling risk factors at the individual and population levels and stress the need for further efforts to identify novel risk factors and early diagnostic markers of pancreatic cancer in order to improve prevention and survival.

S7-P48 TRENDS IN LUNG CANCER INCIDENCE AND MORTALITY IN NAVARRA

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OBJECTIVES: Contrary to many European countries and the US, data from recent decades indicate an increase in the incidence of lung cancer in Spain, probably in relation to the delay in the implementation of measures limiting tobacco consumption in educational centers or workplaces up to 2005. Trends in lung cancer incidence and mortality by sex and age in Navarra are analyzed.

METHODS: Rates standardized according to the new European standard population were estimated using data from the population based cancer registry of Navarra and mortality registry from 1975-2016 and 1976-2020, respectively. Trends in incidence and mortality rates in four age groups, 30-49, 50-59, 60-69 and >=70 years old, were assessed using joinpoint regression. Each joinpoint denotes a statistically significant change in trend while the estimated annual percent change summarize the trend over a fixed predetermined interval.

RESULTS: In all years and in the four age groups analyzed, the incidence and mortality rates for lung cancer were higher in men than in women. Overall mortality rates in men showed a significant decrease by 1.2% by year since 2001, while they continued to increase in women by 4.4% by year in the period 1993-2020.

Since 1997-1998 incidence and mortality rates among men aged 30-49 years decreased by nearly 6% per year, while in the age group of 50-60 years the decline was observed only in mortality rates since 2007. In men aged 60-69 years a stabilization of rates was observed in both mortality and incidence rates, whereas men over 70 years old showed a decrease in mortality in 2005-2020 by 2% by year.

Women 60-69 years old have higher incidence and mortality rates than women over 70 years old and, in this age group, incidence and mortality rates continued to increase by 7% per year since the early 90s of the last century. Instead, women 30-49 years old showed a significant decrease in mortality rates since 2005 by 5% per year.

CONCLUSIONS: Tobacco consumption patterns in the different cohorts of the population in the last decades are reflected in the lung cancer statistics of Navarre. Renewed tobacco control efforts are clearly needed.

S7-P49 CHANGES IN PROSTATE CANCER INCIDENCE BY PROGNOSIS INDICATORS BETWEEN 2008 AND 2019 IN THE TARN

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(1) Tarn cancer Registry Albi

OBJECTIVES: The incidence of prostate cancer has been falling for several years in France. This decline is associated with a decrease in the use of PSA testing. This should logically lead to a decrease in the incidence of small cancers. However, there is a concern that the decrease in screening may lead to an increase in the incidence of advanced cancers.

MATERIAL & METHOD: We studied all prostatic cancers diagnosed in the Tarn from 2008 to 2019 (N=4261). We are describing 3 prognostic indicators: Clinical stage (T1-T2, T3-4 or N+ or M+), Gleason scores (<=6,7,8,>=9), PSA level (<10, [10-20[, >=20 ng/ml).Incidence is modelled with a Poisson model including year of diagnosis and age.

RESULTS: The incidence of good prognostic cancers has been steadily decreasing since 2008 (T1) (PSA <10 ng/ml) (Gleason 6). For the incidence of cancers with an intermediate prognosis, we observe a decrease for cancers with PSA between 10 and 20 ng/ml and stability for those with a Gleason score of 7 or 8 and T2 stage cancers. Finally, there is an average increase of 2% per year in T3-4 or N+ or M+ cancers and cases with a PSA >=20 but this increase is not linear. On the other hand, tumors with a Gleason score of 9 or 10 are increasing regularly by 4% per year.

CONCLUSIONS: The decrease in the use of PSA testing has been accompanied, as expected, by a decrease in the incidence of cancers with a good or very good prognosis. At the same time, the incidence of poor prognosis cancers is increasing slightly and irregularly. The evolution of the Gleason score must be interpreted with caution as it is closely linked to the evolution of this classification.

Session 8

OTHER EPIDEMIOLOGICAL STUDIES

S8-O30 HISTOPATHOLOGIC CHARACTERISTICS AND INCIDENCE TRENDS OF TESTICULAR CANCER IN A SOUTH-EASTERN SPANISH REGION ALONG A 36 YEARS PERIOD.

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(1) Region of Murcia Cancer Registry, (2) Epidemiology service. Health council Region of Murcia

OBJECTIVE: To describe incidence evolution of testicular cancer and its histological subtypes in a south-eastern Spanish region, alongside a 36 years period from 1983 to 2018.

METHODS: Data were retrieved from the population-based Cancer Registry of Murcia´s Region ("Registro de Cáncer de la Región de Murcia", RCM), selecting all cases of malignant tumours with CIE-10 code = C62 (Primary location in testicle) occurring between years 1983 to 2018. In order to calculate incidence rates, total and age-groups populations at mid-years were calculated from the Regional census.

Input variables included in the study were: year of diagnosis, patient age at diagnosis and morphology code (histology) according to ICD-O-3.

Output variables were: crude incidence rate, age-adjusted incidence rates (ASR) to European Standard Populations (ESP) from 1976 and 2013 and World Standard Population (always referred per 100,000 inhabitants) and groups of histology codes: Seminomatous Germinal Cell Tumours (GCT), Non-seminomatous GCT, Lymphomas and Others. Age at diagnosis was available since 1992; it was also grouped in 4 strata according to definition of Paediatrics and Adolescents and Young Adults (AYA) groups.

RESULTS: Along the observed period, 858 testicular cancers have been registered in RCM. ASR to ESP '76 ranges from 0.3 in 1983 to 7.6 in 2017.

ASR for AYA has risen from 5.6 in 1992 to 21.8 in 2018, with higher peaks in intermediate years, but overall trend, evaluated by moving averages, is linearly ascendant; incidence for older people is 5 times smaller, being even lower for children where cases range mostly from 1 to none per year.

Regarding histological groups, the vast majority are GCT, being almost identical the proportion of non-seminomatous and seminomatous in the long term, despite their ranks have been interchanged every few years while following a general ascendant trend.

CONCLUSIONS: Nowadays incidence and temporal trends are similar to those of other Spanish regions and most of European countries. Distribution by age and histological types are also concordant with European data, being the only striking feature in our study the very low cases of sex-cord stromal tumours.

Reasons for almost worldwide increment in testicular cancers have yet to be determined.

S8-O31 BREAST, CERVICAL AND COLORECTAL CANCER: RECOVERY AFTER IMPORTANT COVID-19 RELATED DECLINE IN INCIDENT CASES OF PRECANCEROUS LESIONS AND CANCERS IN THE SCREENING TARGET POPULATION IN BELGIUM.

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(1) Belgian Cancer Registry (BCR)

OBJECTIVES. During the first wave of the COVID-19 pandemic, screening activities in Belgium for breast, cervical and colorectal cancer were suspended from mid-March 2020 up to 3 months. Our nationwide cyto-histopathological database allowed the Belgian Cancer Registry (BCR) to evaluate how this impacted the detection of precancerous lesions and cancers in the age groups targeted for screening.

METHODS. All pathology laboratories in Belgium obligatory report the diagnoses of all breast, cervical and colorectal samples to BCR.

Data were analyzed separately for the major regions Flanders and Wallonia, since screening is organized at the regional level. We compared the number of newly diagnosed precancerous lesions (breast: B3 lesions, colorectal: adenoma, cervix: low grade lesions) and cancers (in situ and invasive combined) in 2020 versus 2019,

(a) for April (immediate impact), and

(b) for the whole year in the screening target population.

Evolution over time was captured with 14-day moving averages, using the 7th day of the period as the date reported.

RESULTS. All results below are shown for Flanders and Wallonia, respectively.

(a) We observed an important immediate impact.

- Breast: cancers declined by 53% and 58%; B3 lesions by 67% and 80%.
- Cervix: cancers dropped by 75 % and 74%; low grade lesions by 73% and 72%.
- Colorectal: cancers declined by 60% and 43%; adenomas by 81% and 86%.

(b) After cancer screening was resumed, diagnoses equaled or slightly exceeded 2019 levels in the second half of the year. Nevertheless, several parameters were still lower than in 2019 by the end of 2020.

- Breast: cancers were at -2% and -5%; B3 lesions increased +19% and +10%.
- Cervix: cancers were at -9% and -22%; low grade lesions -5% and +10%.
- Colorectal: cancers were at -11% and -7%; adenomas -16% and -11%.

CONCLUSIONS. The COVID-19 pandemic profoundly and immediately impacted the detection of precancerous lesions and cancers. Fortunately, the remaining decline at the end of 2020 was markedly lower.

However, the delay in diagnoses could have an impact of the prognosis and care of patients.

BCR will continue to monitor the trends in stage at diagnosis and outcomes for patients diagnosed during the COVID-19 pandemic in Belgium.

S8-O32 COVID-19 MULTIMORBIDITY SCORE IN CANCER PATIENTS USING ITALIAN ADMINISTRATIVE DATABASES

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OBJECTIVES: Severe to fatal COVID-19 manifestations have been observed to be strongly related to multimorbidity patterns. Nowadays no comorbidity scores are available to predict the risk of severe COVID-19 in cancer patients. In this context, we aimed at developing an ad-hoc score, based on administrative databases (i.e. hospital discharge records and pharmaceutical flow) to study the impact of comorbidities on the risk of severe COVID-19 in cancer patients.

METHODS: We used the Lombardy Regional Health Information System data that link several health care data sources of the resident population. Firstly, using hospital discharge records, we identified a cohort of patients with a new diagnosis of a solid cancer (ICD-9-CM codes 140*-199*) between February and December 2019. For these patients, sixty-one conditions and diseases, measured from hospital inpatient and pharmaceutical flow, were retrieved within 2 years before cancer diagnosis. Subsequently, using "DB-COVID-19", set up by the Regional Government during the pandemic, we identified patients with a severe (intensive care unit admission) or fatal manifestations of COVID-19 during the first pandemic wave (March-May 2020). The so-defined cohort was then randomly split into two separate sets (70% training and 30% validation) and a LASSO logistic model was used to identify the comorbidities independently associated to a severe/fatal form of COVID-19 manifestations.

RESULTS: We identified 55425 patients with a new diagnosis of a solid cancer. Thirty-five conditions were selected as independent predictors of developing a severe/fatal COVID-19 infection in the training set (area under the ROC curve was 0.85): these conditions will be used, together with age and sex, to build the weights of the multimorbidity score. The predictive performance of the multimorbidity score will be assessed using the validation set.

CONCLUSIONS: This score is based on administrative databases routinely available to population-based cancer registries (CRs), so it could be a useful tool for all CRs interested in conducting epidemiological studies on COVID-19 in cancer patients.

S8-033 CANCER AND PREGNANCY. ESTIMATES IN ITALY FROM RECORD-LINKAGE PROCEDURES BETWEEN CANCER REGISTRIES AND HOSPITAL DISCHARGE DATABASE

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OBJECTIVES. Concurrence of pregnancy and cancer is rare but given the current trend in delaying childbearing and aging of population (with cancer risk increasing by age), these two events are more often associated than in the past.

The present study aims at providing evidence to guide clinicians in taking care of women diagnosed with cancer associated with a reproductive event in Italy. We estimate the frequency of this condition on a population basis and evaluate the pregnancy outcomes and the possible interaction with the clinical cancer features compared to the population of Italian women of reproductive age without a cancer diagnosis.

METHODS. We propose a longitudinal retrospective study on incident cancer cases among women of reproductive age identified using population-based Cancer Registers data linked at the individual level with the Hospital Discharge database trough diagnostic codes and procedures related to pregnancy and its possible outcomes. All women diagnosed with cancer who underwent obstetric hospitalization within the previous year or two years after the diagnosis will be included in the study cohort. All Cancer Registers will provide the cases from the most recent available date, for a time-lapse of at least five years from 2003.

RESULTS. A pilot study coordinated by the National Institute of Health in collaboration with the Italian Society of Gynaecology and Obstetrics (SIGO) and the Italian Cancer Registries Association (AIRTUM) involved 18 Cancer Registries located in the North (8), Centre (2) and South (8) of the country, covering 25% of the Italian population. Cancer Registries databases linked to Hospital Discharges provide relevant information to estimate the incidence of cancer diagnoses concurrent with pregnancy, evaluate the different outcomes of pregnancy and describe care pathways for women.

CONCLUSIONS. By offering topographic and morphological data, the information provided by population-based Cancer Registries can allow a complete and precise identification of every single diagnosis. Some preliminary results are available but the analysis is still in progress.

For the first time in Italy, it will be possible to provide a description on a population basis of the phenomenon and to analyse the appropriateness of the care offered to pregnant women diagnosed with cancer.

“Funded by the Italian National Institute of Health”.

S8-P50 CANCER DIAGNOSIS IN CATALONIA (SPAIN) AFTER TWO YEARS OF COVID-19 PANDEMIC: AN INCOMPLETE RECOVERY

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(1) Hospital Cancer Registry Unit. Catalan Institute of Oncology, (2) Catalan Pathology Registry. Catalan Cancer Plan, (3) Catalan Electronic Health Record. EHealth Office, (4) CatSalut Information Systems and Health Department ICT unit, (5) Catalan Cancer Plan, (6) Hospital Cancer Registry Unit. Catalan Institute of Oncology / Catalan Pathology Registry. Catalan Cancer Plan

OBJECTIVES: This study aimed to estimate potential undetected cancers over the first two years of the COVID-19 pandemic in Catalonia.

METHODS: Cancer incidence was compared between pre-pandemic (2019) and pandemic (March 2020-January 2022) periods in the Catalan Pathology Registry (CPR) according to sex, age, and tumour site. The correlation between cancer diagnosis and COVID-19 healthcare workload was also evaluated. The expected incident cancers (E) during the pandemic were estimated by applying 2019 CPR cancer incidence specific rates by sex and 5-year age groups to the corresponding 2020 and 2021 Catalan population pyramids. CPR incident cancers were considered observed (O). Standardized incidence ratios (SIR) and 95% confidence intervals (CIs) were calculated using the O/E ratio.

RESULTS: After two pandemic years, cancer diagnosis decreased by 12% (SIR 0.88, 95% CI 0.87-0.89), or approximately 7,641 undetected cancers (12,991 including non-melanoma skin cancer). Excluding non-melanoma skin cancer, 72% of the cancer underdiagnosis was generated in 2020. Diagnoses decreased more in men (whole pandemic -14%; 2020 -21%; 2021 -8%) than in women (-9%, -19 %, -3%, respectively), dropping significantly overall in all pandemic waves but the fifth (1st -37%, 2nd-16%, 3rd -8%, 4th -6%, 5th -2%, 6th -6%), and across all adult age groups. In the first wave, CPR cancer diagnosis was inversely correlated with COVID-19 caseload in primary care (R -0.91, 95% CI -0.97, -0.75) and occupancy in conventionalhospital wards (R -0.91, 95% CI -0.99, -0.48) and intensive care (R -0.91, 95% CI 95% -0.98, -0.70).

CONCLUSION: Our study evaluated the overall pandemic impact on cancer diagnosis on a large scale and with minimal selection bias, showing that as of February 2022, cancer detection in Catalonia had not yet recovered to pre-pandemic levels. Pending cancer incidence data from population-based cancer registries, early CPR data could inform the development of Spanish cancer control plans.

S8-P51 IMPACT OF THE FIRST YEAR OF THE PANDEMIC ON THE MANAGEMENT OF ONCOLOGICAL DISEASE IN A PORTUGUESE COVID-19 REFERRAL HOSPITAL

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OBJECTIVES: This study aims to quantify the impact of the pandemic on the management of oncological disease in a Portuguese COVID-19 referral hospital by comparing the first year of the pandemic with the previous two years.

METHODS: New cancer cases who were diagnosed and treated at our institution were included in the study (2018: N=2520, 2019: N=2727, 2020: N=2212).

Annual percent changes (APC) in the number of cases and corresponding 95% confidence intervals (95%CI) were computed, through the analysis of interrupted time series, to assess the effect of the pandemic.

Time in days from first contact until diagnosis and from diagnosis until treatment was computed. Median values before and during the pandemic were compared using Kruskal-Wallis test.

Patients were followed for vital status until 31st December 2021. Survival at one year was quantified through Kaplan-Meier estimator and compared across the years using Log-rank test.

RESULTS: A growing number of cases was found for All cancers between 2018 and 2019 (APC [95%CI]: +5 [+2; +8]), followed by a decline during 2020 (APC [95%CI]: -8 [-14; -1]), and this change was statistically significant (p=0.002). Similar patterns were observed for most cancers, whereas breast, colorectal, endocrine, gynaecological, head and neck and other cancers showed significant upward trends during 2020, and no differences were found for paediatric cancers.

Overall, there was a significant decrease in median times to diagnosis and treatment, during the pandemic compared with the period before (median days [P25-P75]: 3 [0-23] vs 8 [0-30], p<0.001, and 20 [0-48] vs 30 [0-67], p<0.001). Most cancer types showed a similar pattern or non-significant differences, except for paediatric and skin cancers, which showed a significant increase in time to diagnosis.

Survival at one year did not differ during the study period (2018: 88.8%, 2019: 87.9%, 2020: 87.5%, p=0.244), except for head and neck cancers, which worsened prognosis during the pandemic.

CONCLUSIONS: Patient care in a COVID-19 reference hospital was disrupted during the first year of the pandemic, with fewer new cancer cases being diagnosed and treated. As a consequence, more favourable response times were achieved, with no major effect on short-term survival. Nevertheless, the long-term effect of the pandemic is yet to come.

S8-P52 COVID-19 OUTBREAK IN LOMBARDY: IMPACT ON REDUCING CANCER DIAGNOSES IN 2020

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OBJECTIVES: Our aim was to analyse, on a population level, the year-long decline in cancer diagnoses in the region of Lombardy (Italy), and to characterise the tumours with the greatest reduction in diagnosis overall and by patient age, sex, and tumour stage at diagnosis.

METHODS: We used the «DB-COVID-19» set up by the Lombardy Regional Government, a repository storing information on infected patients. For the entire resident population of Lombardy, the DB COVID-19 was integrated with Regional Health Information System data (e.g. basic medical care; outpatient care; pharmaceutical care; mortality data etc.). These databases were used to identify cancer patients' characteristics (e.g. sex and age) and cancer-related information (e.g. cancer site and stage at diagnosis). The frequency of new cancer diagnoses in 2019 and 2020 were compared in terms of percentage differences in undiagnosed cases.

RESULTS: We observed two peaks in the decline in cancer diagnoses, the first occurring in the first wave (March-May 2020; -41%) and the second in the second wave (October-December 2020; -19%). The reduction in cancer diagnoses persisted over the course of 2020 and was higher in males and patients aged 74+.

Diagnoses of all four common solid cancers analysed (female breast, lung, colorectal, and prostate) remained below pre- pandemic levels. For breast and colorectal cancers, the decline in diagnoses was high in the age groups targeted by population- based screening programmes. We observed a large reduction in localised stage cancer diagnoses for all four cancers.

CONCLUSIONS: Our data confirm that timely monitoring of cancer diagnoses and interventions to prevent disruption of routine diagnostic services are needed to mitigate the impact of emergencies on cancer patients.

S8-P53 AUTOMATIC EXTRACTION OF BRESLOW THICKNESS FROM FREE-TEXT SKIN MELANOMA PROTOCOLS TO EVALUATE THE CLINICAL IMPACT OF COVID-19 IN BELGIUM

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OBJECTIVES. The Belgian Cancer Registry reported a decline in new cancer diagnoses during the COVID-19 pandemic in Belgium, with melanoma being among the most affected tumour types. This raises concerns about the impact on tumour stage and patient prognosis. In this study, we aimed to assess how invasion depth of skin melanomas diagnosed in 2020 differed with previous years.

METHODS. Breslow thickness is commonly and consistently reported in skin melanoma pathology protocols, facilitating automated extraction using regular expressions. Our strategy had an estimated protocol-level sensitivity and precision of 96 % and 94 %, respectively. This approaches human-level performance while the throughput is orders of magnitude higher. We obtained skin melanoma protocols for incidence year 2020 through the accelerated delivery of data from the Belgian pathology laboratories. We applied the algorithm on a total of 21.696 skin melanoma protocols for incidence years 2017-2020 that were further aggregated into 13.010 tumour-level Breslow results for downstream exploration.

RESULTS. While incidence rates for melanoma are yearly increasing in Belgium with about 5%, the number of diagnoses slightly decreased in 2020 when compared to 2019 (-0.8%). The effect was most pronounced around the first lockdown period (-58% diagnoses in April 2020 versus April 2019). Nevertheless, the distribution of Breslow values was similar for tumours diagnosed in 2020 as compared to previous years.

Median Breslow thickness at diagnosis was considerably higher for nodular melanoma (3.4 mm) than superficially spreading melanoma (0.6 mm) but there was no obvious difference between 2020 and previous years for any of the subtypes

CONCLUSIONS. In this study, we confirmed the delay and decrease in melanoma diagnoses in 2020, but we could not observe an overall effect on Breslow thickness. The data also indicates that a considerable number of diagnoses were still lacking by the end of 2020, emphasizing the need for follow-up.

Overall, this study demonstrates that the accelerated delivery of data to a national cancer registry – combined with the use of simple, yet effective, computational tools to extract information from unstructured free-text data – provide a valuable toolkit to monitor the epidemiological situation using population-level data with a delay of only a few months.

S8-P54 EVALUATION OF THE IMPACT OF THE COVID-19 PANDEMIC ON INCIDENCE, DIAGNOSIS AND TREATMENT OF CANCER AT VILA FRANCA DE XIRA HOSPITAL, PORTUGAL

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OBJECTIVES. On March 2, 2020, the first case of COVID-19 was officially confirmed in Portugal. The pandemic has greatly affected health care, especially primary health care. Cancer patients are part of the risk group for contracting the most severe form of SARS- CoV2 infection. Many human and material resources have been directed to respond to the pandemic, and this, combined with reduction in demand for health care services for other reasons, has caused screening programs for cancer and follow-up of previously diagnosed cancer patients to take a back seat. In this study we evaluated the impact of the COVID-19 pandemic on the incidence, diagnosis and treatment of cancer in our hospital.

METHODS. Using data from our cancer registry database (population-based), we compared the incidence of cases of the three main types of cancer diagnosed at Vila Franca de Xira Hospital (breast, colorectal and prostate carcinoma), as well as the stage of presentation. The period under analysis was the last two years before the emergence of cases of COVID-19 in Portugal (2018- 2019) and two years of the course of the pandemic (2020-2021).

RESULTS. The data obtained shows that during the pandemic, there was a major reduction in the incidence of new cases of breast, colorectal and prostate cancer in our hospital. This reduction was much more pronounced in 2021 than in 2020. Overall, with respect to stage of presentation, there was no major variability.

CONCLUSION. Our study showed that the negative repercussions of the COVID-19 pandemic on the diagnosis and treatment of cancer were large. There was a significant reduction in the diagnosis of new cases, consultations and surgical acts. These findings allow us to predict that if nothing is done to counteract this trend, we will have in the medium term, an increase in the negative consequences in diagnosis, treatment and cancer mortality as a result of the COVID-19 pandemic.

S8-P55 EVALUATING COVID-19 PANDEMIC IMPACT ON 2020 CANCER BURDEN ESTIMATES

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(1) European Commission's Joint Research Centre

INTRODUCTION. The estimated cancer incidence values reported by the European Cancer Information System (ECIS) for the year 2020 were based on data recorded and collected before the onset of the Coronavirus disease 2019 (COVID-19). This means the impact of the pandemic in cancer diagnosis and registration could not be included in the projected values. The aim of this study is to compare 2020 projected cancer burden with available observed values and provide an overview across European countries of the COVID-19 impact on cancer incidence burden.

METHODS. Some cancer registries in Europe started publishing preliminary results on cancer incidence for 2020 and update their historical incident data. In the framework of the ECIS, we are collecting newly available incident data from European cancer registries.

RESULTS. Preliminary incidence numbers for 2020 on selected cancers report a significant decrease of incident cases as compared to previous available years, both in males and females. We compare updated trends and 2020 preliminary data with the corresponding ECIS estimates. For selected cancers, sex, and age groups where prediction intervals of 2020 ECIS estimates do not cover the 2020 observed numbers, we highlight statistically significant drops in the historical trend.

CONCLUSIONS. These analyses are performed for European registries who released preliminary data for 2020. The possible impact of COVID-19 in European cancer registration is analysed across countries, age groups, sexes, and cancers.

GRELL ASCENSION MEETING 2022

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