

LIBRO DE RESÚMENES

Jornada Científica
CIBERESP 2024

11 y 12 de marzo, Sevilla



MINISTERIO
DE CIENCIA, INNOVACIÓN
Y UNIVERSIDADES



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Presentación

¡Bienvenidos!

Os damos la bienvenida a la **Jornada Científica CIBERESP 2024**, espacio donde poner en común y discutir los avances en la investigación logrados por la comunidad científica de CIBERESP.

En esta edición conoceremos los resultados de los proyectos intramurales de la convocatoria de 2022, y la investigación que realiza el personal científico joven de CIBERESP mediante una selección de pósteres. Disfrutaremos de una conferencia impartida por el Prof. Alfredo Morabia sobre la epidemiología y salud pública en el siglo XXI, y tendremos oportunidad de conocer la Infraestructura de Medicina de Precisión asociada a la Ciencia y la Tecnología (IMPACT) a través de los tres programas que la conforman: Cohorte, Data y Genómica. También como en años anteriores, se dará voz a otras áreas CIBER contando en esta reunión de 2024 con las de Salud Mental (CIBERSAM) y de Fragilidad y Envejecimiento Saludable (CIBERFES). Asistiremos a una mesa redonda donde se abordará la comunicación y divulgación de la investigación en el ámbito de la salud pública, y podremos conocer de cerca el trabajo que realizan los dos grupos nuevos incorporados en el área en 2023.

Nuestro agradecimiento a la organización de la reunión de este año: Jordi Alonso, M^a José Sánchez, Juan Carlos Galán, M^a José López, Enrique Calderón y Jordi Figuerola. Así como a la Facultad de Medicina de la Universidad de Sevilla por acogernos.

Os esperamos en Sevilla.

Fernando Rodríguez Artalejo

Director Científico de CIBERESP



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Os esperamos en Sevilla.



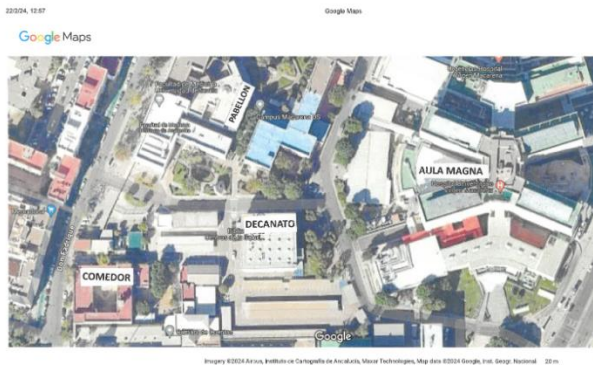
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¿Dónde se celebra?

La Jornada Científica de CIBERESP se celebrará en la Facultad de Medicina de la Universidad de Sevilla.



Lunes, 11 de marzo de 2024

10.00 - 16:30 h	Reunión de Comité de Dirección & Comité Científico Asesor Externo CIBERESP¹ Sala de Profesores. Edificio Decanato
15:30-16:30 h	Reunión de Personal científico joven CIBERESP² Aula 0.3. Pabellón Docente
Aula Magna de la Facultad de Medicina (Edificio Hospital)	
16:00-16:30 h	Registro
16:30-16:40 h	Bienvenida D. Fernando Rodríguez Artalejo. Director científico del área de Epidemiología y Salud Pública (CIBERESP) D. Jordi Alonso Caballero. Subdirector científico del área de Epidemiología y Salud Pública (CIBERESP)
16:40-18:10 h	Sesión resultados Proyectos Intramurales <ul style="list-style-type: none">- Population-based genomic epidemiology study for tailored strategies for surveillance and control of tuberculosis (TB-SEQ). D.ª Elisa Martó Catalá- The impact of COVID-19 pandemic and their restrictions on the chronification of benzodiazepine use. D. Ignacio Aznar Lou y D.ª Lucy Parker- EPI (Embarazo y Primera Infancia) DATA. D.ª Ana Esplugues Cebrián y D.ª Aitana Lertxundi Manterola- IMIMAGE – Opportunistic body composition assessment from routine imaging data in patients with multiple mieloma. D.ª Delphine Casabonne- Measuring the real impact of West Nile virus infection in Spain. D.ª Ana Vázquez González y D.ª Diana Gómez Barroso- Knowledge and attitudes of household contacts of COVID-19 cases towards the disease and its prevention through vaccination and non-pharmacological measures. D.ª Diana Toledo Zavaleta y D. Iván Martínez Baz Modera: D.ª Mª José López Medina
18:10-19:40 h	Presentación Pósteres de personal científico joven <ul style="list-style-type: none">- Association study of Single Nucleotide Polymorphisms related to One-Carbon Metabolism with Breast Cancer Risk in the EPIC-Spain study. D. José María Gálvez Navas- Exposure to green spaces, cardiovascular risk biomarkers and incident cardiovascular disease in older adults: the Seniors-Enrica II cohort. D.ª Esther García García-Esquinas- Health and social costs during the first year after stroke by degree of functional disability. D.ª Mercè Soler Font- Impact of the universal adolescent hepatitis B vaccination implementation in Spain. D.ª Núria Soldevila Pidemunt- Incidence rates and trends of large B-cell lymphoma in Spain (2002-2016): a population-based study.

¹ Reunión previa solo para el Comité de Dirección y Comité Científico Asesor Externo

² Reunión previa solo para el personal científico joven

	<p>D.^ª Marta Solans Margalef</p> <ul style="list-style-type: none"> - Influence of COVID-19 on substance use patterns in first-year university students in Spain: uniHcos project. <p>D.^ª Tania Fernández Villa</p> <ul style="list-style-type: none"> - Job performance in healthcare workers with Long-COVID: A scoping review. D.^ª Pía Delano Baudet - Lifetime swimming pool attendance and its relationship with breast, prostate and colorectal cancers: A Multicase–Control Study in Spain (MCC-Spain). D.^ª Carolina Donat Vargas - Prenatal exposure to phenols and longitudinal patterns of attention-deficit hyperactivity disorder (ADHD) from 4 to 11 years in the INMA Study. D. Vicente Mustieles Miralles - Psychological flexibility in chronic pain: Psychometric examination of the Spanish version of the Multidimensional Psychological Flexibility Inventory Short Form (MPFI-24). D. Jaime Navarrete Hidalgo - Responding to a European upsurge in severe neonatal echovirus 11 infections using molecular and genomic surveillance in Spain, 2019–2023. D.^ª María Dolores Fernández García - Socioeconomic inequalities in non-Hodgkin lymphoma mortality in Spain. D. Daniel Redondo Sánchez - The impact of hunger on mental wellbeing and health among adolescents and the moderating role of parental nativity: evidence from Spain before and during the COVID-19 pandemic. D.^ª Brenda Robles - Three rapid scoping reviews mapping available biomarkers, for prevention in cancer, cardiovascular and neurodegenerative diseases. D.^ª Elena Plans Beriso <p>Moderan: D.^ª Ayelén Rojas Benedicto, D.^ª Gabriela Debesa Tur y D. Víctor Zamora Ruiz</p>
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Martes, 12 de marzo de 2024

Aula Magna de la Facultad de Medicina (Edificio Hospital)

08:30-09:00 h	Registro
09:00-09:30 h	<p>Inauguración</p> <p>D. Luis C. Capitán Morales. Decano de la Facultad de Medicina. Universidad de Sevilla</p> <p>D. Fernando Rodríguez Artalejo. Director científico del área de Epidemiología y Salud Pública (CIBERESP)</p> <p>D.^ª Marina Pollán Santamaría. Directora del Instituto de Salud Carlos III</p>
09:30-10:30 h	<p>Conferencia inaugural: “Epidemiología y Enfoque de Salud Pública en la Investigación Biomédica del Siglo XXI”</p> <p>Prof. Alfredo Morabia. Editor de American Journal of Public Health (AJPH) y Prof. de Epidemiología de la City University of New York y Columbia University</p> <p>Presenta: D. Enrique Calderón Sandubete</p>
10:30-11:30 h	<p>Sesión Comité Científico Asesor Externo</p> <p>Modera: D. Jordi Alonso Caballero</p>

11:30-11:45 h	Descanso
11:45-13:15 h	<p>Sesión Infraestructura de Medicina de Precisión asociada a la Ciencia y la Tecnología (IMPACT):</p> <p>Cohorte IMPACT. D.ª Beatriz Pérez Gómez. Coordinadora del programa IMPACT Cohorte e investigadora del Centro Nacional de Epidemiología</p> <p>IMPACT-Data. D. Alfonso Valencia Herrera. Coordinador del programa IMPACT Data e investigador del Centro de Supercomputación de Barcelona</p> <p>IMPACT-GENÓMICA. D.ª Beatriz Sobrino Rey. Responsable del Nodo de Secuenciación de IMPACT Genómica de la Fundación Pública Galega de Medicina Xenómica</p> <p>Moderadora: D.ª M.ª José Sánchez Pérez</p>
13:15-14:15 h	<p>Sesión Comunicación y divulgación</p> <p>D.ª Milagros Pérez Oliva. Periodista del periódico El País</p> <p>Presenta: D. Juan Carlos Galán Montemayor</p>
14:15-15:15 h	Comida
15:15-16:05 h	<p>Ampliando fronteras CIBER: hacia un futuro más colaborativo</p> <p>D. Leocadio Rodríguez Mañas. Director científico del área de Fragilidad y Envejecimiento Saludable (CIBERFES)</p> <p>D.ª Ana González Pinto. Directora científica del área de Salud Mental (CIBERSAM)</p> <p>Moderan: D. Antoni Serrano Blanco y D. Jordi Alonso Caballero</p>
16:05-16:25 h	<p>Presentación grupos nuevos</p> <p>D. Javier Díez Domingo. Grupo CB22/02/00052 CIBERESP. Fundación para la Investigación Sanitaria y Biomédica de la Comunidad Valenciana (FISABIO)</p> <p>D. Juan Vicente Luciano Devis. Grupo CB22/02/00043 CIBERESP. Fundación Privada para la Investigación y Docencia San Juan de Dios</p> <p>Moderadora: D. Jordi Figuerola Borrás</p>
16:25-16:30 h	Descanso
16:30-17:30 h	<p>Asamblea</p> <p>D.ª Margarita Blázquez Herranz. Gerente de CIBER</p> <p>D. Fernando Rodríguez Artalejo. Director Científico del área de Epidemiología y Salud Pública (CIBERESP)</p>
17:30-17:35 h	Clausura
17:35 h	Fin

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COMUNICACIONES CORTAS

CC01. ASSOCIATION STUDY OF SINGLE NUCLEOTIDE POLYMORPHISMS RELATED TO ONE-CARBON METABOLISM WITH BREAST CANCER RISK IN THE EPIC-SPAIN STUDY

José María Gálvez-Navas^{1,2,3}, Esther Molina-Montes^{1,3,4}, Miguel Rodríguez-Barranco^{1,2,3}, José María Huerta^{1,5}, María Dolores Chirlaque^{1,5}, Marcela Guevara^{1,6}, Pilar Amiano^{1,7}, Antonio Agudo⁸, Esperanza de Santiago⁹, Clara Alcántara⁹, Elena López-Isac¹⁰, María-José Sánchez^{1,2,3}

¹ CIBER of Epidemiology and Public Health (CIBERESP), Madrid, Spain

² Cancer Registry of Granada, Andalusian School of Public Health, Granada, Spain

³ Instituto de Investigación Biosanitaria ibs.GRANADA, Granada, Spain

⁴ Department of Nutrition and Food Sciences, University of Granada, Granada, Spain

⁵ Regional Health Council-IMIB, Murcia, Spain

⁶ Navarra Institute for Health Research (IdiSNA), Pamplona, Spain

⁷ Ministry of Health of the Basque Government, San Sebastián, Spain

⁸ Catalan Institute of Oncology (ICO), Barcelona, Spain

⁹ GENYO-Centre for Genomics and Oncological Research, Granada, Spain

¹⁰ Department of Biochemistry and Molecular Biology II, University of Granada, Granada, Spain

Background: Breast cancer (BC) is the leading neoplasm in women. There are several well-established risk factors of BC. However, more than the 50% of new BC cases do not present any other risk factor than age. Carcinogenesis is characterised by the dysregulation of DNA expression, which is regulated by one-carbon metabolism (1CM). Thus, single nucleotide polymorphisms (SNPs) of genes in 1CM could be involved in the development of BC.

Objectives: To determine the main SNPs related to 1CM and to evaluate their association with BC risk in the EPIC-Spain cohort.

Methods: Case-control study including of 279 cases and 282 controls from the EPIC-Spain cohort, with genetic information obtained through genome-wide genotyping (Infinium Global Screening Array). SNPs selection criteria was: 1) Bibliographic consultation of 1CM related genes, 2) GWAS Catalog search of genes and SNPs associated with 1CM, 3) SNPs with a minor allele frequency > 1% in the study population, 4) SNPs in low Linkage Disequilibrium. Genetic analysis was performed via Fisher's exact test for different models of inheritance using the software PLINK 1.9.

Results: A total of 25 SNPs in 20 genes related to 1CM were selected. Genetic analyses showed statistically significant associations with BC risk for: *CHDH* rs6801605 in the genotypic and recessive models ($p = 0.03$ and $p = 0.014$, respectively), *MTHFD1* rs8003567 in the genotypic model ($p = 0.045$), *DNMT1* rs2228611 in the additive and allelic model ($p = 0.02$ and 0.03 , respectively), *PRMT1* rs10415880 in the recessive model ($p = 0.024$) and *DNMT3B* rs6141813 in the recessive model ($p = 0.002$). Few associations remained significant after multiple testing correction.

Conclusions: SNPs in 1CM genes may be related to BC risk. Analyses are underway to explore associations of a genetic score representing the combined effect of these SNPs with BC risk.

CC02. EXPOSURE TO GREEN SPACES, CARDIOVASCULAR RISK BIOMARKERS AND INCIDENT CARDIOVASCULAR DISEASE IN OLDER ADULTS: THE SENIORS-ENRICA II COHORT

Cara Scheer¹, Roberto Pastor^{2,3}, Rosario Ortola^{3,4}, Mercedes Sotos-Prieto^{3,4,5,6}, Verónica Cabañas-Sánchez^{3,4}, Pedro Gullón^{7,8}, Elena Plans-Beriso², Carlos Ojeda Sánchez⁹, Rebeca Ramis^{2,3}, Pablo Fernández-Navarro^{2,3}, Fernando Rodríguez-Artalejo^{2,3,6}, Esther García-Esquinas^{2,3}

1 Fulda University of Applied Sciences. Fulda, Germany

2 Department of Chronic Diseases, National Center of Epidemiology, Carlos III Health Institute. Madrid, Spain

3 CIBER of Epidemiology and Public Health (CIBERESP), Madrid, Spain

4 Department of Preventive Medicine and Public Health, School of Medicine, Universidad Autónoma de Madrid. Madrid, Spain/

CIBER of Epidemiology and Public Health (CIBERESP), Madrid, Spain

5 Department of Environmental Health, Harvard T.H. Chan School of Public Health. Boston, MA, USA

6 IMDEA Food Institute. CEI UAM+CSIC, Madrid, Spain

7 Department of Surgery, Social and Medical Sciences. School of Medicine and Health Sciences, Universidad de Alcalá. Alcalá de Henares, Madrid, Spain

8 Centre for Urban Research, RMIT University. Melbourne, Australia

9 Guadalajara University Hospital. Guadalajara, Spain

Background: The impact of residential green spaces on cardiovascular health in older adults remains uncertain.

Methods: Cohort study involving 2114 adults aged ≥ 65 years without cardiovascular disease (CVD), residing in five dense municipalities of the Madrid region and with detailed characterization of their socioeconomic background, health behaviors, CVD biological risk factors, mental, physical, and cognitive health. Greenness exposure was measured using the Normalized Difference Vegetation Index (NDVI) at varying distances from participants' homes. Traffic exposure, neighborhood environment, neighborhood walkability, and socioeconomic deprivation at the census level were also assessed. Serum N-terminal pro-B-type natriuretic peptide (ProBNP), high-sensitivity troponin T (hs-TnT), interleukin 6 (IL-6), and Growth Differentiation Factor 15 (GDF-15) were measured at baseline, and incident CVD events identified through self-report and electronic medical records (ICPC-2 codes K74, K75, K77, K90, and K92).

Results: After adjusting for sex, age, educational attainment, financial hardship and socioeconomic deprivation at the census level, an interquartile range (IQR) increase in NDVI at 250, 500, 750, and 1000 meters around participants' homes was associated with mean differences in ProBNP of -2.90% (95%CI: -4.93; -0.86), -2.24% (-4.14; -0.34), -1.60% (-3.04; -0.16), and -1.60% (-2.89; -0.31), respectively; and mean differences in hs-TnT among diabetic participants of -3.93% (95%CI: -6.48; -1.38), -3.97% (-6.71; -1.24), -2.69 (-4.88; -0.49) and 1.87% (-3.85; -0.10), respectively. Of similar magnitude, although only statistically significant at 250 and 500 m, were the observed lower IL-6 levels with increasing greenness. GDF-15 levels were independent of NDVI. In prospective analyses (mean follow-up 6.3 years), an IQR increase in residential greenness at 500, 750, and 1000 m was associated with an approximately 10% lower risk of incident CVD. The variables that contributed most to the apparent beneficial effects of greenness on CVD were lower exposure to traffic and enhanced physical performance. Additionally, neighborhood walkability and increased physical activity were notable contributors among individuals with diabetes.

Conclusions: Increased exposure to residential green space was associated with a moderate reduction in CVD risk in older adults residing in densely populated areas.

CC03. HEALTH AND SOCIAL COSTS DURING THE FIRST YEAR AFTER STROKE BY DEGREE OF FUNCTIONAL DISABILITY

Mercè Soler-Font^{1,2}, Aida Ribera-Solé^{2,3*}, Ignacio Aznar-Lou^{1,2}, Alba Sánchez-Viñas^{1,2}, John Slof⁴, Emili Vela^{5,6}, Mercè Salvat-Plana^{2,7,8}, Antoni Serrano-Blanco^{1,2,9}, Natàlia Pérez de la Osa¹⁰, Marc Ribó¹¹, Sònia Abilleira⁷

¹ Health Technology Assessment in Primary Care and Mental Health Settings (PRISMA), Institut de Recerca Sant Joan de Déu, Santa Rosa 39-57, 08950 Esplugues de Llobregat, Spain

² Consortium for Biomedical Research in Epidemiology & Public Health (CIBERESP), Monforte de Lemos 3-5, 28029 Madrid, Spain

³ Research on Aging, Frailty and Care Transitions in Barcelona (REFIT-BCN), Parc Sanitari Pere Virgili and Vall d'Hebron Institute (VHIR), Barcelona, Spain

⁴ Department of Business, Universitat Autònoma de Barcelona, Bellaterra, Spain

⁵ Information Systems Area. Catalan Health Service

⁶ Digitalization for the Sustainability of the Healthcare System (DS3), IDIBELL, Barcelona, Spain

⁷ Stroke Programme, Catalan Health Department

⁸ Agency for Health Quality and Assessment of Catalonia, Barcelona, Spain

⁹ Parc Sanitari Sant Joan de Déu, Doctor Antoni Pujadas 42, 08830 Sant Boi de Llobregat, Spain

¹⁰ Stroke unit, Neurology Service, Hospital Universitari Germans Trias i Pujol, Universitat Autònoma Barcelona

¹¹ Neurology Service, Hospital Vall d'Hebron

Background: Stroke poses a significant economic burden on individuals, families, and society. This study aimed to estimate societal costs during the first year after stroke by degree of functional disability measured with a 90-day modified Rankin Scale (mRS).

Methods: Descriptive study of the cumulative costs incurred during 1-year follow-up of a cohort of patients with suspected acute large-vessel occlusion (LVO) stroke in Catalonia (Spain) of the RACECAT trial, a multicenter, population-based, cluster-randomized trial. Cost data was collected between September 2017 and January 2019 through hospital accounting records, electronic health records and structured telephone-based interviews. Disability was assessed using the 90-day mRS. Direct medical and non-medical costs and indirect costs were included. Costs by 90-day mRS were analyzed through a Generalized Linear Model with family gamma and link log. We performed sensitivity analyses modifying unit costs for informal care and/or indirect costs.

Results: A total of 629 suspected LVO strokes were initially included. After exclusion criteria, the final sample included 567 patients: 299 LVO strokes, 133 non-LVO strokes and 135 intracranial hemorrhage. The mean age was 74 years and 59% of patients were male. Total mean costs increased with higher disability: €20,785±13,920 for mRS 0-2; €39,641±27,975 for mRS 3 and €52,940±37,846 for mRS 4-5. Direct medical costs represent the highest proportion of total costs at all disability levels, however, direct non-medical costs and indirect costs represent over 40% of the total cost in patients with higher disability levels.

Conclusions: The cost during the first year after stroke is high and increases by disability level. These results can contribute to a better calculation of the cost of the disease including non-medical and indirect costs. This information could help feed economic models.

CC04. IMPACT OF THE UNIVERSAL ADOLESCENT HEPATITIS B VACCINATION IMPLEMENTATION IN SPAIN

Angela Domínguez^{1,2}, Ana Avellón^{3,2}, M Victoria Hernando^{4,5}, Núria Soldevila^{2,1}, Eva Borràs^{6,1,2}, Ana Martínez^{6,2}, Conchita Izquierdo⁶, Núria Torner^{2,1}, Carles Pericas^{7,8,1}, Cristina Rius^{7,8,2}, Pere Godoy^{9,2}

¹ Department of Medicine, Universidad de Barcelona, Barcelona

² Programa 2 PREVICET, CIBER Epidemiología y Salud Pública (CIBERESP), Instituto de Salud Carlos III, Madrid

³ Hepatitis Unit, National Centre of Microbiology, Instituto de Salud Carlos III, Madrid

⁴ Centro Nacional de Epidemiología. Instituto de Salud Carlos III, Madrid

⁵ CIBER Enfermedades Infecciosas (CIBERINFEC), Instituto de Salud Carlos III, Madrid

⁶ Agència de Salut Pública de Catalunya, Barcelona

⁷ Agència de Salut Pública de Barcelona, Barcelona

⁸ Institut de Recerca de l'Hospital de la Santa Creu i Sant Pau (IRB Sant Pau), Barcelona

⁹ Institut de Recerca Biomèdica de Lleida (IRBLleida), Lleida

Background: Hepatitis B virus (HBV) is responsible for most of the chronic hepatitis disease burden caused by viral hepatitis variants worldwide, with vaccination as the cornerstone of global elimination initiatives.

Objectives: The aim of this study was to analyse the impact on acute hepatitis B virus infection of the introduction of universal adolescent HBV vaccination.

Methods: All acute HBV cases reported to the Spanish National Epidemiological Surveillance Network between 2005 and 2021 were included. For regions starting adolescent vaccination in 1991-1993 and in those starting in 1994-1996, HBV incidence rates were compared by calculating the incidence rate ratio (IRR) and 95% confidence interval (CI). 2017 Spanish national seroprevalence survey data were also analysed.

Results: Overall acute HBV incidence per 100,000 persons of 1.54 in 2005 fell to 0.64 in 2021, showing a significant descending trend ($p < 0.001$). Incidence in 2014-2021 was lower for regions that started adolescent vaccination in 1991-1993 rather than in 1994-1996 (IRR 0.76; 95% CI 0.72-0.83). In the 20-29 age group, incidence in the regions that started adolescent vaccination in 1991-1993 was also lower (IRR 0.87; 95% CI 0.77-0.98 in 2005-2013 and IRR 0.71; 95% CI 0.56-0.90 in 2014-2021). Seroprevalence survey results show that anti-HBc prevalence in the 35-39 age group was lower in the regions that started vaccination earlier, although the difference was not statistically significant.

Conclusions: Acute HBV incidence has decreased in all Spanish regions since systematic vaccination was introduced, and has decreased more in the young adult population in regions that began adolescent vaccination in 1991 to 1993 rather than in regions that began later.

CC05. INCIDENCE RATES AND TRENDS OF LARGE B-CELL LYMPHOMA IN SPAIN (2002-2016): A POPULATION-BASED STUDY

Aina Romaguera¹, Jan Trallero¹, Marta Solans^{2,3}, Cristina Ramirez⁴, Susana Merino⁵, Araceli Alemán⁶, Ana Vizcaíno⁷, Pilar Gutiérrez⁸, Cristina Díaz del Campo⁹, Ana Isabel Marcos¹⁰, Amaia Aizpurua¹¹, Josefina Perucha¹², Patricia Ruiz^{13,14}, Marcela Guevara^{2,15,16}, Clàudia Pla^{17,18}, Noura Jeghalef¹⁹, María-José Sánchez^{20,21,22}, María Dolores Chirlaque²³, Rafael Marcos-Gragera^{1,2,3}, and REDECAN.

¹ Epidemiology Unit and Girona Cancer Registry, Oncology Coordination Plan, Catalan Institute of Oncology, Girona Biomedical Research Institute Dr. Josep Trueta (IDIBGI), Girona, Spain

² CIBER of Epidemiology and Public Health (CIBERESP), Madrid, Spain

³ Research Group on Statistics, Econometrics and Health (GRECS), University of Girona, Girona, Spain

⁴ Albacete Cancer Registry, Health and Social Welfare Authority, Albacete, Spain

⁵ Department of Health, Asturias Cancer Registry, Public Health Directorate, Asturias, Spain

⁶ Canary Islands Cancer Registry, Public Health Directorate, Canary Islands Government, Tenerife, Spain

⁷ Castellón Cancer Registry. Cancer Information System. Department of Public Health. Comunitat Valenciana, Spain

⁸ Castilla y León Cancer Registry, Public Health Directorate, Castilla y León Government, Valladolid, Spain

⁹ Ciudad Real Cancer Registry, Health and Social Welfare Authority, Ciudad Real, Spain

¹⁰ Cuenca Cancer Registry, Health and Social Welfare Authority, Cuenca, Spain

¹¹ Basque Country Cancer Registry, Basque Government, Vitoria-Gasteiz, Spain

¹² La Rioja Cancer Registry, Epidemiology and Health Prevention Service, Logroño, Spain

¹³ Mallorca Cancer Registry, Public Health Department, Palma, Spain

¹⁴ Health Research Institute of the Balearic Islands (IdISBa), Palma de Mallorca, Spain

¹⁵ Navarra Cancer Registry, Navarra Public Health Institute, Pamplona, Spain

¹⁶ Epidemiology and Public Health Area, Navarra Institute for Health Research (IdiSNA), Pamplona, Spain

¹⁷ Tarragona Cancer Registry, Cancer Epidemiology and Prevention Service, Sant Joan de Reus University Hospital, Tarragona, Spain

¹⁸ Institut d'Investigació Sanitària Pere Virgili (IISPV), Reus, Tarragona, Spain

¹⁹ Registry of Childhood and Adolescents Tumors of the Comunitat Valenciana. Cancer Information System. Department of Public Health. Comunitat Valenciana, Spain

²⁰ Granada Cancer Registry, Andalusian School of Public Health (EASP)

²¹ Instituto de Investigación Biosanitaria Ibs.GRANADA, Granada, Spain

²² Department of Preventive Medicine and Public Health, University of Granada, Granada, Spain

²³ Department of Epidemiology, Regional Health Authority, Instituto Murciano de Investigación Biosanitaria (IMIB)-Arrixaca, Murcia University, Murcia, Spain

Background: Large B-cell lymphoma (LBCL) is one of the most frequent families of non-Hodgkin's lymphomas and manifests with rapidly growing masses or enlarged lymph nodes. Its incidence increases with age, thus being considered a disease of older adults. Despite being an aggressive neoplasm, survival can be long with appropriate treatment. Recent studies have reported an increase in the incidence of LBCL in current years, hypothesising that the growing elderly population may be responsible for it.

Objectives: To describe the incidence rates and trends of LBCL in the Spanish population (2002-2016) by age, using data from the Spanish Network of Cancer Registries (REDECAN).

Methods: The study included all primary cases of LBCL collected during 2002-2016 (or the available period) from 13 Spanish population-based cancer registries. Cases were codified using the third edition of the International Classification of Diseases for Oncology and classified with the WHO 2016 Classification of Tumours. Crude and age-specific incidence rates, along with age-standardised rates using the 2013 European standard population, were calculated and expressed as cases per 100,000 person-years. Incidence trends and annual percent change (APC) were analysed.

Results: Among the 8,339 cases collected, 53.3% were men. The median age at diagnosis was 68 years (interquartile range (IQR): 55-78). By large, the most frequent subtype was 'diffuse large B-cell lymphoma, not otherwise specified' (97.5%). Incidence increased with age, reaching a maximum at 75-79 years. Crude and age-standardised incidence rates were 6.21 (95% CI: 6.08-6.35) and 6.61 (95% CI: 6.47-6.76), respectively. The incidence increased markedly across the period of study, with an APC of 2.22 (95% CI: 1.72-2.72).

Conclusions: This study offers valuable information, improving the understanding of the epidemiology of LBCL in Spain. The rise in incidence rates and trends may be attributed to diagnostic improvements and the reduction of non-specific diagnoses.

CC06. INFLUENCE OF COVID-19 ON SUBSTANCE USE PATTERNS IN FIRST-YEAR UNIVERSITY STUDENTS IN SPAIN: uniHcos PROJECT

Tania Fernández-Villa^{1,2}, Lorena Botella-Juan², María Manuela Morales SuárezVarela^{3,4}, Carmen Amezcua-Prieto^{5,6}, Juan Alguacil-Ojeda^{7,8}, Carlos Ayán Pérez⁹, Susana Redondo¹⁰, Antonio José Molina de la Torre^{1,2}, Vicente Martín Sánchez^{1,2}, uniHcos Project Work Group.

1 Grupo CIBERESP CB06/02/1020

2 Grupo de investigación en interacciones Gen-Ambiente y Salud (GIIGAS) / Instituto de Biomedicina, Universidad de León, León

3 Grupo CIBERESP CB06/02/0045

4 Universidad de Valencia, Valencia

5 Grupo CIBERESP CB06/02/1014

6 Universidad de Granada, Granada

7 Grupo CIBERESP CB06/02/0034

8 Universidad de Huelva, Huelva

9 Universidad de Vigo, Vigo

10 Comisionado Regional para la Droga de la Junta de Castilla y León, Valladolid

Background: Substance abuse is a major public health problem among university students, because this stage is crucial for the establishment of habits and addictions. The COVID-19 pandemic, may have influenced substance use patterns among this population, due to increased social isolation, but also to a need to cope with the discomfort and stress of the situation.

Objectives: To assess pre- and post-pandemic substance use patterns in Spanish first-year university students.

Methods: Cross-sectional study of first-year university students from 11 Spanish universities participating in the uniHcos project between 2012-2022. Prevalences and their 95% confidence intervals of alcohol, cannabis and tobacco use patterns were assessed for students starting university in three time periods related to the COVID-19 pandemic (pre-pandemic, alarm state and new normal).

Results: 10518 students participated in the study (73.3% women) with mean age of 19 years (SD=1.6 years and range= 17-24 years). Consumption patterns declined drastically for all substances tested in the alarm state (especially in the frequency of past 30-days), returning to pre-pandemic values after the lifting of restrictions. These changes were most marked in risk behaviours such as binge drinking (49,5% vs. 31,34% vs 44,4% respectively). These differences were observed equally in both sexes, with higher consumption in men than in women.

Conclusions: This study has made it possible to know the prevalence of substance use in our young people in the pre- and post-pandemic periods. The results are provisional, given that a longer period of time is required to know the postpandemic effects and follow-up of the students.

CC07. JOB PERFORMANCE IN HEALTHCARE WORKERS WITH LONG-COVID: A SCOPING REVIEW

Pia Delano^{1,2}, Vicky Serra-Suton^{2,3}, Alejandra Vives⁴, Fernando G. Benavides^{1,2,5}, Mireia Utzet^{1,2,5}

¹Center for Research in Occupational Health (CiSAL), Universitat Pompeu Fabra, Barcelona, Spain

²Center for Biomedical Research Network (CIBER) of Epidemiology and Public Health, Madrid, Spain

³Agència de Qualitat i Avaluació Sanitària de Catalunya (AQuAS), Barcelona, Spain

⁴Departamento de Salud Pública, Escuela de Medicina, Pontificia Universidad Católica de Chile, Santiago de Chile, Chile

⁵Hospital del Mar Medical Research Institute (IMIM), Barcelona, Spain

Background: Healthcare workers may have a higher risk of developing long COVID with symptoms that persist and impact their daily living activities and job performance, affecting how healthcare systems work.

Objectives: To study the impact of long COVID in healthcare workers and in their job performance, described as return to work and work ability.

Methods: A scoping review was carried out regarding healthcare workers with long COVID and their job performance in four biometric databases up to 2022 including primary quantitative and qualitative studies. The selection of articles was performed by two independent reviewers following inclusion criteria. A data-charting form was used to extract the relevant information of the studies, performing a narrative qualitative synthesis of evidence.

Results: Thirteen studies were selected, most of them taking place in Europe. The 3-months criteria were the most frequently applied to define a long COVID case, with a reported prevalence median value of 64 (IQR 34-71). There was a wide spectrum of symptoms and time to return to work, with all the studies reporting over 100 days. Work ability was reported as decreased in the studies that assessed it, with 16% of participants requiring a modification of the work area and 58.7% fit to work with restrictions. Associated factors identified included older age, depression, pre-existing illness, and greater severity of acute symptoms of COVID-19. Gender and occupational category were found not to be associated with long COVID. However, physical exertion and night shift work may limit the job performance of healthcare workers with long COVID.

Conclusions: Healthcare workers with long COVID take over 100 days to return to work in the included studies, and may return even while not feeling recovered, with symptoms affecting their work ability. This may have an impact on the healthcare system that should be further studied.

CC08. LIFETIME SWIMMING POOL ATTENDANCE AND ITS RELATIONSHIP WITH BREAST, PROSTATE AND COLORECTAL CANCERS: A MULTICASE-CONTROL STUDY IN SPAIN (MCC-SPAIN)

Carolina Donat-Vargas^{1,2,3,4,5}, Miquel Vallbona-Vistós^{1,2}, Gemma Castaño-Vinyals^{1,2,3,6}, Victor Moreno^{3,5,7}, Nuria Aragonés^{3,8}, Elena Boldo^{3,9,10}, Vicente Martín^{3,11}, Ines Gómez-Acebo^{3,12}, Marcela Guevara^{3,13,14}, Pilar Amiano^{3,15}, Ana Molina-Barceló¹⁶, Guillermo Fernández-Tardón^{3,17}, Maria Dolores Chirlaque^{3,18,19}, Manolis Kogevinas^{1,2,3,6}, Marina Pollan^{3,10}, Cristina M Villanueva^{1,2,3,6}

¹ Instituto de Salud Global de Barcelona (ISGlobal), Barcelona, Spain

² Universitat Pompeu Fabra (UPF), Barcelona, Spain

³ CIBER Epidemiología y Salud Pública (CIBERESP), Madrid, Spain

⁴ Unit of Cardiovascular and Nutritional Epidemiology, Institute of Environmental Medicine, Karolinska Institutet, Stockholm, Sweden

⁵ University of Barcelona, Barcelona, Spain

⁶ IMIM (Hospital del Mar Medical Research Institute), Barcelona, Spain

⁷ Catalan Institute of Oncology, Bellvitge Biomedical Research Institute (IDIBELL), Barcelona, Spain

⁸ Cancer Surveillance Unit, Public Health Division, Department of Health of Madrid, Madrid, Spain

⁹ Cancer Epidemiology Research Group, Oncology and Hematology Area, Instituto de Investigación Sanitaria (IIS) Puerta De Hierro, Madrid, Spain

¹⁰ Cancer and Environmental Epidemiology Unit, National Centre for Epidemiology, Carlos III Institute of Health, Madrid, Spain

¹¹ Research Group in Gene-Environment-Health Interactions (GIIGAS), University of Leon, León, Spain

¹² IDIVAL (Valdecilla Institute of Research), University of Cantabria, Santander, Spain

¹³ Navarra Public Health Institute, Pamplona, Spain

¹⁴ Navarra Institute for Health Research (IdiSNA), Pamplona, Spain

¹⁵ Public Health Division of Gipuzkoa, Biodonostia Research Institute, San Sebastian, Spain

¹⁶ Cancer and Public Health Area, Foundation for the Promotion of Health and Biomedical Research-Public Health Research (FISABIO), Valencia, Spain

¹⁷ Oncology Institute IUOPA, Universidad de Oviedo, Asturias, Spain

¹⁸ Department of Epidemiology, Murcia Health Council, IMIB-Arrixaca, Murcia, Spain

¹⁹ Department of Health and Social Sciences, Universidad de Murcia, Murcia, Spain

Background: Swimming pool water contains high concentrations of volatile and skin-permeable disinfection byproducts (DBPs). The potential risk posed by the carcinogenicity of these compounds and its potential to counteract the positive effects of physical exercise remains uncertain.

Objectives: To evaluate the association between lifetime swimming pool attendance and breast, prostate and colorectal cancers

Methods: During 2010-2013, hospital-based cancer cases and population-based controls were recruited in Spain, providing detailed information on swimming pool attendance, which was grouped into low, medium, and high frequency. Odds ratios (OR) and 95% confidence intervals (CI) were estimated using mixed models with recruitment area as random effect and adjusted for potential confounders (age, educational level, family history of cancer, oral contraceptive use, smoking status, energy intake, body mass index, recreational physical activity).

Results: Final samples for swimming pool attendance analyses were 1,422 breast cases/2,969 controls, 952 prostate cases/2,231 controls, and 1,777 colorectal cases/5,094 controls. Swimming pool attendance throughout lifetime varied between 54-61%, as reported by the participants included in the studies for each specific type of cancer. The OR of lifetime pool users vs. non-users (i.e. <10 times in a lifetime) was 0.83 (0.70-0.98) for breast, 0.90 (0.74-1.10) for prostate, and 0.79 (0.69-0.91) for colorectal cancer. The association with breast cancer was stronger in postmenopausal women than in premenopausal. Compared to non-attendance, a protective exposure-response trend was observed for OR for breast and colorectal cancer. For prostate cancer, no exposure-response pattern was observed.

Conclusions: Our results suggest that, although carcinogenic DBPs are present in swimming pools, attending them does not pose a risk to human health. Conversely, our findings indicate that swimming pool attendance, possibly owing to the physical activity involved, may serve as a protective factor against cancer, particularly breast and colorectal cancers. Nevertheless, these findings warrant further confirmation through additional research.

CC09. PRENATAL EXPOSURE TO PHENOLS AND LONGITUDINAL PATTERNS OF ATTENTION-DEFICIT HYPERACTIVITY DISORDER (ADHD) FROM 4 TO 11 YEARS IN THE INMA STUDY

Vicente Mustieles^{1,2}, Mariana F. Fernández^{1,2}, Maria-Jose Lopez-Espinosa^{1,3,4}, Andrea Beneito³, Jesús Ibarluzea⁵, Mikel Subiza-Pérez⁵, Jordi Júlvez^{1,6,7}, Jordi Sunyer^{1,6}, Martine Vrijheid^{1,6}, Maribel Casas^{1,6}

¹ CIBER de Epidemiología y Salud Pública (CIBERESP)

² Universidad de Granada, Spain

³ Universidad de Valencia, Valencia, Spain

⁴ Epidemiology and Environmental Health Joint Research Unit, FISABIO–Universitat Jaume I–Universitat de València, Valencia, Spain ⁵ Biodonostia Health Research Institute, San Sebastian, Spain; University of the Basque Country UPV/EHU, Donostia-San Sebastián, Spain

⁶ ISGlobal, Barcelona, Spain & Universitat Pompeu Fabra (UPF), Barcelona, Spain

⁷ Clinical and Epidemiological Neuroscience (NeuroÈpia), Institut d'Investigació Sanitària Pere Virgili (IISPV), 43204 Reus, Spain

Background: Previous small-sized studies suggested an association between prenatal bisphenol A exposure and ADHD symptoms. Data on other phenols is scarce.

Objectives: To assess whether prenatal exposure to bisphenol A, triclosan, benzophenone-3 and parabens was associated with repeated assessments of children's ADHD symptoms from 4 to 11 years of age.

Methods: Phenols were measured in urine samples in the 1st and 3rd trimesters of gestation, and creatinine-adjusted concentrations were averaged to estimate prenatal exposure among 1,083 mother-child pairs from the Infancia and Medio Ambiente (INMA) Sabadell, Valencia and Guipuzkoa cohorts. ADHD symptoms were assessed at 4 years using the ADHD-DSM-IV form and at 7, 9 and 11 years using the Conner's Parent Rating Scales (CPRS). Both raw scores and dichotomized outcomes were evaluated. Adjusted linear and logistic mixed-effects models were run. The mixture effect was investigated using Bayesian Weighted Quantile Sum regression.

Results: Each natural-log unit increase in prenatal bisphenol A concentrations was associated with increasing total ADHD and particularly hyperactivity scores (β : 0.15; 95%CI: 0.02, 0.28). Evidence of effect modification was observed, with boys driving the deleterious associations found with hyperactivity scores (β : 0.25; 95%CI: 0.05, 0.46 - p-sex interaction=0.08). Logistic mixed models confirmed this pattern, showing that prenatal bisphenol A exposure was associated with a higher risk of hyperactivity diagnosis in the whole population (OR: 1.28; 95%CI: 1.00, 1.65), again driven by boys (OR: 1.52; 95%CI: 1.07, 2.17 - p-sex interaction=0.159). At 11 years of age, each quartile increase in the mixture of phenols was associated with higher hyperactivity scores in both boys and girls together (β : 0.43; 95%CI: 0.12, 0.71), largely driven by bisphenol A (weight: 64%).

Conclusions: Our results, supported by a previous meta-analysis of rodent toxicological studies, identified prenatal bisphenol A exposure as a probable contributor to children's hyperactivity risk.

CC10. PSYCHOLOGICAL FLEXIBILITY IN CHRONIC PAIN: PSYCHOMETRIC EXAMINATION OF THE SPANISH VERSION OF THE MULTIDIMENSIONAL PSYCHOLOGICAL FLEXIBILITY INVENTORY SHORT FORM (MPFI-24)

Jaime Navarrete^{1,2}, Carla Rodríguez-Freire¹, Juan P. Sanabria-Mazo^{1,2,3}, Mayte Serrat⁴, Jordi Alonso^{2,5,6}, Montserrat Ferrer^{2,5}, Albert Feliu-Soler^{2,7}, Rubén Nieto⁸, Juan V. Luciano^{1,2,7}

¹ Teaching, Research & Innovation Unit, Parc Sanitari Sant Joan De Déu, Doctor Antoni Pujadas 42, 08830 Sant Boi De Llobregat, Spain

² CIBER of Epidemiology and Public Health (CIBERESP), Madrid, Spain

³ Department of Basic, Developmental and Educational Psychology, Faculty of Psychology, Autonomous University of Barcelona, Bellaterra, Spain

⁴ Unitat d'Expertesa en Síndromes de Sensibilització Central, Servei de Reumatologia, Vall d'Hebron Hospital, Barcelona, Spain

⁵ Health Services Research Unit, Hospital del Mar Research Institute Barcelona (IMIM), Spain

⁶ Department of Medicine and Life Sciences, Universitat Pompeu Fabra, Barcelona, Spain

⁷ Department of Clinical and Health Psychology, Faculty of Psychology, Autonomous University of Barcelona, Bellaterra, Spain

⁸ eHealth Lab Research Group, Faculty of Health Sciences, Universitat Oberta de Catalunya, Barcelona, Spain

Background: The therapeutic contribution of Acceptance and Commitment Therapy in chronic pain management is widely appreciated. The understanding of its mechanisms of change relies mainly on the assessment of the Hexaflex processes. The Multidimensional Psychological Flexibility Inventory (MPFI) was designed to comprehensively measure them.

Objectives: The purpose of this cross-sectional study was to adapt into Spanish the 24-item version of the MPFI (MPFI-24) and to examine its reliability and construct validity.

Methods: A translation and back-translation process was followed. Eligible participants were adult individuals with longstanding chronic pain (≥ 3 months). An online survey link, encompassing self-report assessments related to sociodemographic data, chronic pain diagnosis, pain acceptance (CPAQ), psychological inflexibility towards pain (PIPS), pain interference in daily life, pain catastrophizing, pain-related kinesiphobia, psychological distress, and the Spanish MPFI-24 was posted and shared across patient associations. The final sample was composed of 309 individuals with chronic pain (88.3% women; age range: 18 – 79 years old), primarily from Barcelona, Spain.

Results: Factor analysis showed that the Spanish version of the MPFI-24 is twelve-factorial (six factors of flexibility plus six factors of inflexibility), as the original version, but without second-order general factors. Internal consistency was adequate with Cronbach's α and McDonald's ω ranging both from .75 to .93, except for MPFI-Acceptance ($\alpha = .34$, $\omega = .52$) and MPFI-Present moment awareness ($\alpha = .63$, $\omega = .80$). Pearson's correlations between the MPFI-24 and the other measures scores were significant and in the expected direction, except for the MPFI-Acceptance and MPFI-Experiential Avoidance subscales. Finally, the MPFI-24 scores significantly explained additional variance of psychological distress beyond the CPAQ and PIPS.

Conclusions: The Spanish version of the MPFI-24 should be used in combination with specific-measures of acceptance, present moment awareness, and experiential avoidance. Regarding scoring, the respective twelve subscales should be used separately, whereas computation of total scores of flexibility and inflexibility is not recommended.

CC11. RESPONDING TO A EUROPEAN UPSURGE IN SEVERE NEONATAL ECHOVIRUS 11 INFECTIONS USING MOLECULAR AND GENOMIC SURVEILLANCE IN SPAIN, 2019-2023

María Dolores Fernandez-García^{1,2}, Nerea García-Ibañez¹, Yolanda Lao-Ramírez¹, Juan Camacho¹, Cristian Launes³, Carmen Muñoz-Almagro³, Cristina Calvo⁴, Noemí López-Perea⁵, María Cabrerizo^{1,2} and the Spanish study group for Enterovirus and Parechovirus infections (PI22CIII-00035)⁶

¹ Laboratorio de Enterovirus y Virus productores de Gastroenteritis, Centro Nacional de Microbiología, Instituto de Salud Carlos III, Madrid

² CIBER de epidemiología y salud pública, Grupo 13

³ Grupo de investigación en enfermedades infecciosas pediátricas. Fundación de investigación Sant Joan de Déu (Barcelona). CIBER de epidemiología y salud pública, Grupo 57

⁴ Servicio de Pediatría, Enfermedades Infecciosas y Tropicales Pediátricas, Hospital Universitario La Paz, Fundación IdiPaz, Red de Investigación Traslacional en Infectología Pediátrica (RITIP). CIBER en enfermedades infecciosas, Grupo 25

⁵ Vigilancia de Enfermedades Inmunoprevenibles, Centro Nacional de Epidemiología, Instituto de Salud Carlos III (Madrid). CIBER de epidemiología y salud pública, Grupo 32

⁶ A. Gutierrez-Arroyo (C. Grasa); I. Mellado, B. Bravo (Hospital La Paz, Madrid); A. Moreno Docón, AI. Menasalvas (Hospital Virgen de la Arrixaca, Murcia); C. Berengua, M del Cuerpo (Hospital de la Santa Creu i Sant Pau, Barcelona); A. Navascués (Complejo Hospitalario de Navarra); M.C. Nieto, E. Garrote (Hospital de Basurto, Bilbao); M. Pérez-Ruiz, A. Medina (Hospital Regional Carlos Haya, Málaga); A. Bordes, E. Lagarejos (Hospital Dr. Negrín, Las Palmas de Gran Canaria); G. Megias, J. Ramos-Valencia (Complejo Asistencial de Burgos)

Background: An increase in severe and fatal enterovirus (EV) infections from July 2022 and in spring 2023 associated with echovirus 11 (E11) strains that clustered into a new divergent lineage-1 were reported in France and Italy. Majority were neonate twins.

Objective: Describe clinical and virological characteristics of E11-positive cases in the last years (Jan.2019-Aug.2023) to investigate if the new-lineage-1 has emerged and circulated in Spain associated with severe neonatal infections.

Methods: EV-positive samples are sent to the CNM through the voluntary EV-surveillance program for typing (RT-PCR in 3'-VP1 region and Sanger sequencing). We conducted a retrospective analysis including all laboratory-confirmed E11 samples. E11-sequences were analysed phylogenetically with global sequences. Available samples collected in 2022-23 were subjected to Whole-Genome sequencing (WGS).

Results: The study included 94 E11-positive samples corresponding to 89 patients (38 in 2019, 2 in 2020, 20 in 2022 and 29 in 2023). Of all patients, 31 (32%) were neonates. Clinical symptoms in E11-cases were fever (n=16), meningitis/meningoencephalitis (M/ME) (n=12) and sepsis (n=3). Eight neonates (3 with sepsis and 5 with M/ME) required PICU admission. One sepsis case was a pre-term twin with fatal hepatitis. Among 78 E11 sequences, 26 (33%) clustered into new-lineage-1. New-lineage-1 included E11 strains circulated since June 2022 associated with severe and non-severe neonatal and non-neonatal infections. Among the 8 E11 strains from neonates admitted in PICU, four (50%) clustered in new-lineage-1. WGS analysis of 7 E11 complete genomes revealed that three were novel E11 recombinant genomes. All clustered outside new-lineage-1 and were associated with fatal sepsis, AFP and M/ME cases from 2022/23.

Conclusions: New-lineage-1 E11 strains have circulated in Spain since June 2022. However, our results suggest no association with an increase in fatal neonatal EV-infections. The detection of novel, disease-associated, recombinant forms emphasizes the importance of genomic surveillance to monitor evolution of EVs.

CC12. SOCIOECONOMIC INEQUALITIES IN NON-HODGKIN LYMPHOMA MORTALITY IN SPAIN

Daniel Redondo-Sánchez^{1,2,3}, Marta Solans^{2,4}, Marc Saez^{2,4}, Dafina Petrova^{1,2,3}, Rafael Marcos-Gragera^{2,5}, Pablo Fernández-Navarro^{2,6}, María-José Sánchez^{1,2,3}

¹ Instituto de Investigación Biosanitaria ibs.GRANADA, Granada, Spain

² CIBER of Epidemiology and Public Health (CIBERESP), Madrid, Spain

³ Escuela Andaluza de Salud Pública, Granada, Spain

⁴ Research Group on Statistics, Econometrics and Health (GRECS), Girona, Spain

⁵ Epidemiology Unit and Girona Cancer Registry, Oncology Coordination Plan, Catalan Institute of Oncology, Girona Biomedical Research Institute Dr. Josep Trueta (IDIBGI), Girona, Spain

⁶ Cancer and Environmental Epidemiology Unit, National Center for Epidemiology, Carlos III Institute of Health, Madrid, Spain

Background: Cumulative evidence suggests that socioeconomic inequalities in mortality exist for most cancer sites across Europe. However, evidence regarding non-Hodgkin lymphoma (NHL), the 12th most deadly cancer in Spain, is scarce.

Objectives: We aim to describe NHL mortality in Spain nation-wide as a function of socio-economic deprivation.

Methods: We analyzed all deaths from NHL (C82-86 and C96 in CIE-10) during 2011-2017 in Spain. Each death was assigned the Spanish Society of Epidemiology deprivation index of the census tract of residence at death. Crude and age-standardized rates were computed for each year, sex and quintile of deprivation, considering the 2013 European standard population (ASR-E). Mortality was analyzed by quintile of deprivation sex, age group, and year of death.

Results: 18,657 NHL cancer deaths were observed during 2011-2017 (53% in men), with 6.1 deaths per 100,000 men and 5.2 deaths per 100,000 women. After standardizing by age, men were 58% more likely to die from NHL than women (ASR-E ratio = 1.58). Men and women living in most affluent areas had higher mortality from NHL cancer (ASR-E = 8.2 and 5.0 respectively), compared to those in the most deprived group (ASR-E = 7.3 and 4.5 respectively). The mortality from NHL increases over time in both sexes (ASR-E = 5.8 in 2011 vs. 6.4 in 2017) with a constant rise occurring in the men residing in the most affluent areas (ASR-E = 7.7 in 2011 vs. 8.9 in 2017).

Conclusions: We found relevant socioeconomic inequalities in NHL mortality, with people living in most affluent areas having more risk of death for NHL, though more research is needed to understand the underlying causes. Results for the two most common NHL subtypes (i.e. diffuse large B-cell lymphoma and follicular lymphoma) and smoothed NHL cancer mortality maps will be presented.

CC13. THE IMPACT OF HUNGER ON MENTAL WELLBEING AND HEALTH AMONG ADOLESCENTS AND THE MODERATING ROLE OF PARENTAL NATIVITY: EVIDENCE FROM SPAIN BEFORE AND DURING THE COVID-19 PANDEMIC

Brenda Robles^{1,2}, César Osmar Molina Dávila³, Esther Sanchez Ledezma^{4,5}, Gemma Serral Cano^{2,4,5}, María José López Medina^{2,4,5}, Andrés Cabrera-Leon^{2,6}, Marc Saez^{1,2}, María A. Barceló^{1,2}

¹ Research Group on Statistics, Econometrics and Health (GRECS), University of Girona, Girona, Spain

² Centro de Investigación Biomédica en Red de Epidemiología y Salud Pública (CIBERESP), Instituto de Salud Carlos III, Madrid, Spain

³ Departamento de Economía, Universidad de Sonora (UNISON), Hermosillo, México

⁴ Agència de Salut Pública de Barcelona (ASPB), Barcelona, Spain

⁵ Institut de Recerca Sant Pau (IR SANT PAU), Barcelona, Spain

⁶ Escuela Andaluza de Salud Pública (EASP), Granada, Spain

Background: The COVID-19 pandemic has exacerbated food insecurity globally. Emerging evidence links food insecurity to adverse mental wellbeing/health outcomes, particularly among adolescents. Parental nativity has also been identified as a significant predictor influencing adolescents' health behaviors and outcomes. However, few studies have examined the following objectives:

Objectives: 1-Examine the relationship between hunger (proxy of food insecurity) and various mental wellbeing/health outcomes among adolescents before and during the COVID-19 pandemic; 2-Assess the extent to which parental nativity moderates these associations.

Methods: We analyzed data from the 2016 and 2021 Risk Factors in Secondary School Students Survey (Spanish acronym *FRESC*), cross-sectional surveys carried out using representative samples from educational centers in Barcelona. Data were matched to enhance comparability between respondents in the 2016 and 2021 surveys. Bayesian multi-level regression models were executed to examine the association between hunger (independent variable) and five mental wellbeing/health dependent variables (i.e., high mental wellbeing, low emotional problems, low behavioral problems, low inattention/hyperactivity problems, low peer problems), controlling for key covariates. Parental nativity interaction terms were then introduced into these models. Data were cleaned using Stata v14.1 and analyzed using R v4.2.2.

Results: The final matched analytic sample included 7,046 participants. Participants experiencing hunger compared to those who did not have a 2% lower incidence rate of having high mental wellbeing [IRR=0.98, 95% CI=0.95–1.00]. Likewise, participants who experienced hunger compared to those who did not reported lower odds of low emotional problems (OR=0.22, 95% CI=0.14-0.35), low behavioral problems (OR=0.56, 95% CI=0.37-0.85), and low problems with peers (OR=0.24, 95% CI=0.15-0.37). Parental nativity status moderated the association between hunger and several of the mental wellbeing/health outcomes.

Conclusions: These findings suggest that adolescent hunger is a mental wellbeing/health concern, with existing inequalities based on parental nativity. Public health investments should target both the burden of hunger and corresponding disparities.

CC14. THREE RAPID SCOPING REVIEWS MAPPING AVAILABLE BIOMARKERS, FOR PREVENTION IN CANCER, CARDIOVASCULAR AND NEURODEGENERATIVE DISEASES

Elena Plans-Beriso^{1,*}, Chantal Babb-de-Villiers^{2,*}, Dafina Petrova^{3,4,5}, Cristina Barahona-López^{5,1}, Paul Diez-Echave^{5,1}, Orlando Rómulo Hernández^{5,1}, Nicolás Fernández-Martínez^{4,5}, Heather Turner², Ester García-Ovejero¹, Oana Craciun¹, Pablo Fernández-Navarro^{1,5}, Nerea Fernández de Larrea^{1,5}, Esther García García-Esquinas^{1,5}, Isla Kuhn⁶, Virginia Jiménez-Planet⁷, Víctor Moreno^{5,8,9}, Fernando Rodríguez-Artalejo¹¹, María José Sánchez^{4,5}, Marina Pollan-Santamaria^{1,5}, Laura Blackburn², Mark Kroese^{2,†}, Beatriz Pérez-Gómez^{1,5,†}

¹ Department of epidemiology of chronic diseases. National Centre for Epidemiology. ISCIII, Madrid, Spain

² PHG Foundation, University of Cambridge, Cambridge, United Kingdom

³ Instituto de Investigación Biosanitaria ibs. GRANADA, Granada, Spain

⁴ Escuela Andaluza de Salud Pública (EASP), Granada, Spain

⁵ CIBER of Epidemiology and Public Health (CIBERESP), Madrid, Spain

⁶ Cambridge University Medical Library, Cambridge, United Kingdom

⁷ National Library of Health Sciences. Instituto de Salud Carlos III, Madrid, Spain

⁸ Oncology Data Analytics Program, ICO, L'Hospitalet de Llobregat, 08908 Barcelona, Spain

⁹ Colorectal Cancer Group, ONCOBELL Program, Institut de Recerca Biomedica de Bellvitge (IDIBELL), L'Hospitalet de Llobregat, 08908 Barcelona, Spain

¹⁰ Department of Clinical Sciences, Faculty of Medicine and health Sciences and Universitat de Barcelona Institute of Complex Systems (UBICS), University of Barcelona (UB), L'Hospitalet de Llobregat, 08908 Barcelona, Spain

¹¹ Department of Preventive Medicine and Public Health, Universidad Autónoma de Madrid, Madrid, Spain; IMDEA23 Food Institute, CEI UAM+CSIC, Madrid, Spain

* These authors contributed equally to this work. † These authors contributed equally to this work.

Background: Personalized prevention enhances health outcomes through targeted interventions based on individual biological, environmental, and behavioral factors, including genetic data. Technological advancements play a crucial role, particularly in identifying and validating biomarkers for enhanced risk stratification and informed preventive strategies.

Objectives: Part of the "PeRsonalised Prevention roadmap for the future HEalThcare" (PROPHET) project, this report aims to address gaps in current personalized preventive approaches. The objective is to present a research landscape of biomarkers for personalized primary or secondary prevention in cancer, cardiovascular, and neurodegenerative diseases within clinical or public health settings.

Methods: Under the PROPHET project, three concurrent rapid scoping reviews focused on cancer, cardiovascular, and neurodegenerative diseases. Adhering to a common protocol based on the PCC (Population, Concept, and Context) framework, reviews considered Medline and Embase for English-language studies between 2020 and 2023. Data extraction encompassed key information on biomarkers, study methods, and relevant details.

Results: Biomarker research is most prolific in cancer, followed by cardiovascular diseases (CVD), while neurodegenerative diseases have significantly fewer articles. In cancer, molecular biomarkers, particularly genetic ones, dominate, whereas CVD predominantly explores molecular biomarkers associated with ischemic heart disease and stroke. Neurodegenerative disorders, notably Alzheimer's disease, garner more attention, but research on other diseases is limited. Molecular biomarkers stand out across all diseases, followed by imaging biomarkers, except in cancer, where anthropometric measures are explored.

Conclusions: This report highlights significant research on molecular biomarkers for personalized prevention in cancer, CVD, and neurodegenerative diseases. Gaps exist, particularly in studying specific cancers and neurodegenerative diseases beyond Alzheimer's, as well as certain biomarker types like epigenetic and microbiome-based biomarkers. Digital technologies, notably artificial intelligence, show promise, especially in molecular and imaging techniques. Identifying and validating biomarkers for personalized prevention in public health settings require additional research to address current limitations and advance prevention strategies.

PÓSTERES

P01. A COMPREHENSIVE APPROACH TO ASSESS THE EXISTING EVIDENCE AND APPROPRIATENESS OF ANTICANCER DRUGS ON ADVANCED CANCER: THE ASTAC PROJECT

Javier Bracchiglione^{1,2}, Marilina Santero¹, Josefina Salazar¹, Gerardo Rodríguez-Grijalva¹, Carolina Requeijo¹, Adriana Gabriela Meade¹, Anna Selva³, Olga Savall¹, Angela Merchan¹, Yahveth Cantero¹, Edgar Hernández¹, Nicolás Meza⁴, Roberto Acosta-Dighero⁴, María Jesús Quintana¹, Karla Salas-Gama^{2,5,6}, Xavier Bonfill^{1,2}, ASTAC Study Group.

¹ Iberoamerican Cochrane Centre, Institut de Recerca Sant Pau (IR SANT PAU), Barcelona, Spain

² CIBER Epidemiología y Salud Pública (CIBERESP), Madrid, Spain

³ Clinical Epidemiology and Cancer Screening, Parc Taulí Hospital Universitari, Institut d'Investigació i Innovació Parc Taulí (I3PT_CERCA), Sabadell, Spain

⁴ Interdisciplinary Centre for Health Studies (CIESAL), Universidad de Valparaíso, Viña del Mar, Chile

⁵ Quality, Process and Innovation Direction, Vall d'Hebron University Hospital, Barcelona, Spain

⁶ Health Services Research Group, Vall d'Hebron Institut de Recerca (VHIR), Vall d'Hebron Hospital University, Vall d'Hebron Barcelona Hospital Campus, Barcelona, Spain

Background: Appropriateness of Systemic Treatments for Advanced Cancers' (ASTAC) is a collaborative research project aiming to assess the appropriateness of anticancer drugs (ACDs) in advanced, digestive non-intestinal cancers (ADNIC).

Objectives: To describe the ASTAC experience as an approach for appropriate broad evidence synthesis.

Methods: We synthesised the evidence on efficacy and safety through overviews, evidence gap maps (EGMs) and systematic reviews (SRs): We searched five databases for SRs, randomised controlled trials (RCTs) and observational studies. We classified the identified SRs according to cancer location and conducted three overviews of SRs, creating matrices of evidence and *de-novo* meta-analyses. We used all the identified SRs (plus the RCTs and observational studies already identified) and ran a new and broader search strategy. We conducted three EGMs, that informed which new SRs were more appropriate to conduct. We used the RCTs included in the EGMs for conducting new SRs. At this stage, we also conducted a complementary forward citation search. We compared our SR analyses with those made by authors of other SRs. To judge the appropriateness of ACDs for patients with ADNICs in a local context, we also conducted multicenter retrospective cohort studies.

Results: So far, we have published three overviews, three EGMs and two SRs. We are in the final phase of other three SRs and two cohort studies. Overall, there is low to very-low confidence on the effects of ACDs, showing clinically non-significant benefit in survival, with a tendency to increase toxicity.

Conclusions: ASTAC has been a successful, comprehensive project. We managed to combine optimally different methodological approaches for synthesising evidence, contrasting them with current clinical practice. It seems that evidence to treat ADNICs with anticancer drugs is sparse and, in consequence, treatments could be often considered inappropriate.

P02. A GEOGRAPHICAL ANALYSIS OF CANCER INCIDENCE IN THE PROVINCE OF GIRONA, 2000-2020

Adrián Nieto Ortiz^{1,2}, Jan Trallero¹, Marta Solans^{3,4}, Arantza Sanvisens¹, Montse Puigdemont¹, Anna Vidal Vila¹, Maikel Verdaguer¹, Daniel Redondo-Sánchez^{3,5,6}, Miguel Rodríguez-Barranco^{3,5,6}, María José Sánchez-Pérez^{3,5,6}, Marc Saez^{3,4}, Rafael Marcos-Gragera^{1,3}

¹ Epidemiology Unit and Girona Cancer Registry, Oncology Coordination Plan, Catalan Institute of Oncology, Girona Biomedical Research Institute Dr. Josep Trueta (IDIBGI), Girona, Spain

² Glòria Compte Research Institute. Empordà Health Foundation

³ CIBER of Epidemiology and Public Health (CIBERESP), Madrid, Spain

⁴ Research Group on Statistics, Econometrics and Health (GRECS), University of Girona, Girona, Spain

⁵ Andalusian School of Public Health (EASP)

⁶ Instituto de Investigación Biosanitaria Ibs.GRANADA, Granada, Spain

Background: Exposure to environmental contamination from heavy metals and battery chemicals has been identified as a risk factor for multiple types of cancer. The Girona Cancer Registry was contacted to evaluate the impact on cancer incidence of a factory in Sant Julià de Llor/Bonmatí that has been recycling lead and other battery components since 1964 that has been associated with lung, stomach, and brain neoplasms.

Objectives: The aim of this study is to determine whether the municipality of Sant Julià de Llor/Bonmatí and its neighboring municipalities have a higher incidence risk of cancer.

Methods: All new cases in the province of Girona diagnosed during 2000-2020 were analyzed. Specific analysis for anatomical sites of lung, stomach and brain were conducted. The observed and expected cases for each site, municipality, age group and sex, were modeled using generalized regression models with zero-inflated Poisson distribution. The relative risks (RR) and exceedance probabilities (EP) were estimated.

Results: A total of 97,206 cancer cases were included (58.0% males; median [interquartile range] of 68 [59-79] years). Among them, there were 7,908 lung, 2,433 stomach and 1,186 brain neoplasms. The overall results showed no higher incidence risk in the municipality where the factory is located, with a RR and EP of 0.94 and 0.16, respectively. However, adjacent municipalities showed RR of 1.06, 1.10 and 1.19 with an EP of 0.8 or higher. Furthermore, no higher RR of cancer incidence was observed for specific sites.

Conclusions: The study revealed increased overall cancer risk in municipalities near the factory, but not in the municipality of the factory's location. Further investigation is required to determine if the increased risk is linked to lead and battery chemicals or other etiological risk factors, and to explore other potential cancer sites that may explain the higher risk observed.

P03. AUTOPHAGY-RELATED POLYMORPHISMS AS SUSCEPTIBILITY BIOMARKERS FOR MONOCLONAL GAMMOPATHY OF UNDETERMINED SIGNIFICANCE: A META-ANALYSIS OF FIVE LARGE EUROPEAN COHORTS AND FUNCTIONAL CHARACTERIZATION

José Manuel Sanchez-Maldonado^{1,2,3,4}, Angelica Macaуда³, Murat Güler³, Rob Ter Horst^{5,6}, Angelika Stein³, Pelin Ünal³, Hauke Thomsen⁷, Yolanda Benavente^{8,9}, Ramón García-Sanz¹⁰, Stefano Landi¹¹, Antonio Jose Cabrera Serrano^{1,2}, Mihai G. Netea^{5,12}, Víctor Moreno^{8,9}, Delphine Casabonne^{8,9}, Daniele Campa¹¹, Asta Försti^{13,14}, Federico Canzian³, Juan Sainz^{1,2,4,9}

¹ Genomic Oncology Area, GENYO. Centre for Genomics and Oncological Research: Pfizer / University of Granada / Andalusian Regional Government, PTS, Granada, Spain

² Instituto de Investigación Biosanitaria IBS.Granada, Granada, Spain

³ Genomic Epidemiology Group, German Cancer Research Center (DKFZ), Heidelberg, Germany

⁴ Department of Biochemistry and Molecular Biology I, University of Granada, Granada, Spain

⁵ Department of Internal Medicine and Radboud Center for Infectious Diseases, Radboud University Medical Center, Nijmegen, The Netherlands

⁶ CeMM Research Center for Molecular Medicine of the Austrian Academy of Sciences, Vienna, Austria

⁷ MSB Medical School Berlin, Germany

⁸ Cancer Epidemiology Research Programme, Institut Català d'Oncologia (IDIBELL), L'Hospitalet de Llobregat, Barcelona, Spain

⁹ Consortium for Biomedical Research in Epidemiology and Public Health (CIBERESP), Barcelona, Spain

¹⁰ Diagnostic Laboratory Unit in Hematology, University Hospital of Salamanca, IBSAL, CIBERONC, Centro de Investigación del Cáncer-IBMCC (USAL-CSIC), Salamanca, Spain

¹¹ Department of Biology, University of Pisa, Pisa, Italy

¹² Department for Immunology & Metabolism, Life and Medical Sciences Institute (LIMES), University of Bonn, 53115 Bonn, Germany

¹³ Division of Pediatric Neurooncology, German Cancer Research Center (DKFZ), German Cancer Consortium (DKTK), Heidelberg, Germany

¹⁴ Hopp Children's Cancer Center (KITZ), Heidelberg, Germany

Background: Monoclonal Gammopathy of Undetermined Significance (MGUS) is a pre-tumoral condition characterized by <10% of plasma cell infiltration in the bone marrow and <3g/dL of unfolded proteins in serum. Previous studies have suggested that autophagy plays a role in determining predisposition to MGUS.

Objectives: We investigated whether 52.000 genetic variants within 234 autophagyrelated genes influence the risk of developing MGUS.

Methods: We performed a meta-analysis of four independent MGUS populations including 1,099 cases and 280,406 controls of European ancestry (UKBiobank, German, Czech and Swedish GWAS) to identify genetic variants associated with MGUS risk. Subsequently, we validated the association of the most interesting variants with MGUS risk in the IMMENSE cohort, which included 599 cases and 901 controls. Finally, we investigated whether those SNPs associated with MGUS risk influenced host immune responses using data of the Human Functional Genomic Project (HFGP).

Results: The overall meta-analysis showed that the ULK4rs6599175 SNP was significantly associated with the risk of MGUS ($p=2.0 \times 10^{-6}$). In addition, although it did not remain significant after multiple testing correction, we found that SNPs within the CDKN2A and ATG10 genes were associated with MGUS risk ($p=1.2 \times 10^{-4}$ and $p=1.2 \times 10^{-3}$). At functional level, we found that the ULK4rs6599175 SNP correlated with vitamin D3 levels in serum ($p=4.0 \times 10^{-4}$) whereas the CDKN2Ars2811710 and ATG10rs1109846 SNPs correlated with absolute numbers of CD4+EMCD45RO+CD27-cells ($p=9.3 \times 10^{-4}$) and IL1 β levels after stimulation of blood with *P. gingivalis* ($p=3.7 \times 10^{-4}$), respectively.

Conclusions: This study confirmed that the ULK4rs1109846 SNP is associated with the risk of MGUS and suggested a potentially interesting association for the CDKN2Ars2811710 and ATG10rs1109846 SNPs. Our study also showed that these SNPs influence the risk of MGUS through the modulation of vitamin D3 levels, absolute numbers of specific subsets of immune cells and the regulation of IL1 β levels after stimulation with *P. gingivalis*.

P04. CLINICAL PROFILE AND SEASONAL PATTERN OF ADULT PATIENTS HOSPITALIZED WITH RESPIRATORY SYNCYTIAL VIRUS INFECTION IN SEVILLE

Francisco Javier Medrano^{1,2,3}, Eduardo Briones^{1,3,4}, Laura Merino-Díaz⁵, Antonio Vallejo^{1,3}, Juan Carlos Galán-Montemayor^{6,7}, Enrique Calderón^{1,2,3}

¹CIBER de Epidemiología y Salud Pública (CB06/02/0014)

²Servicio de Medicina Interna, Hospital Universitario Virgen del Rocío, Sevilla

³Facultad de Medicina, Universidad de Sevilla

⁴Unidad de Salud Pública, Distrito Sevilla

⁵Servicio de Microbiología, Hospital Universitario Virgen del Rocío, Sevilla

⁶CIBER de Epidemiología y Salud Pública (CB06/02/0053)

⁷Servicio de Microbiología, Hospital Ramón y Cajal, Madrid

Background: SARS-CoV-2, Respiratory syncytial virus (RSV) and Influenza are the most important pathogens associated with acute respiratory infection worldwide. RSV causes significant paediatric and adult morbidity and mortality. However, recent studies focusing on the impact of severe RSV infections in adults remain scarce.

Objectives: To assess in our area, the clinical outcome, seasonal pattern and underlying diseases of adult patients hospitalized with RSV infection.

Methods: Retrospective cross-sectional study that included all admissions of adults with RSV infections to the Hospital Universitario Virgen del Rocío de Sevilla from June 1, 2021 to May, 30 2023. The data were obtained by crossing the local Minimum Basic Data Set database with the positive results by polymerase chain reaction for RSV from our microbiology service.

Results: During the study period, a total of 239 adult patients with RSV infection were hospitalized. The mean age was 71.8 ± 17.3 years, 108 (45.2%) of them were men. The distribution by age range was as follows: 16-64 years, n= 63 (26.4%), 65-79 years, n= 82 (34.3) and ≥ 80 , n=94 (39.3%). Of the 239 cases, 73.2% were admitted in December, January or February, 2.9% were admitted to the intensive care unit and 11.3% died during hospitalization. The underlying conditions were: chronic obstructive pulmonary disease (COPD) (24.5%), heart failure (21.1%), cancer and/or immunosuppression (15.2%), concomitant respiratory infections due to other pathogens (11%), others (6,3%) and none (22.8%).

Conclusions: In our environment, severe RSV infections in adults occur mainly in those over 65 years of age, they have a seasonal pattern and high mortality. The main risk groups are patients with COPD, heart failure or cancer and/or immunosuppression.

P05. COMPARISON OF NEXT GENERATION TECHNOLOGIES AND BIOINFORMATICS PIPELINES FOR CAPSULAR TYPING OF *STREPTOCOCCUS PNEUMONIAE*

Desiree Henares^{1,2,3}, Stephanie W^{4,5}. Lo, Amaresh Perez-Argüello^{1,2}, Alba Redin^{1,2}, Pilar Ciruela^{6,7}, Juan Jose Garcia-Garcia^{3,8,9}, Pedro Brotons^{1,2,3,10}, Jose Yuste^{11,12}, Raquel Sá-Leao¹³, Carmen Muñoz-Almagro^{1,2,3,10}

¹ Department of RDI Microbiology, Hospital Sant Joan de Déu, Barcelona, Spain

² Infectious Diseases and Microbiome, Institut de Recerca Sant Joan de Déu, Barcelona, Spain

³ Group CB15/00067 CIBER Center for Epidemiology and Public Health (CIBERESP), Instituto de Salud Carlos III, Madrid, Spain

⁴ Parasites and Microbes Programme, Wellcome Sanger Institute, Hinxton, United Kingdom

⁵ Milner Center for Evolution, Life Sciences Department, University of Bath, Bath, United Kingdom

⁶ Surveillance and Public Health Emergency Response, Public Health Agency of Catalonia (ASPCAT), Barcelona, Spain

⁷ Group CB06/02/0076 CIBER Center for Epidemiology and Public Health (CIBERESP), Instituto de Salud Carlos III, Madrid, Spain

⁸ Pediatrics Department, Hospital Sant Joan de Déu, Barcelona, Spain

⁹ Department of Surgery and Medical-Surgical Specialties, Facultat de Medicina i Ciències de la Salut, Universitat de Barcelona, Barcelona, Spain

¹⁰ School of Medicine, Universitat Internacional de Catalunya, Barcelona, Spain

¹¹ Spanish Pneumococcal Reference Laboratory, National Center for Microbiology, Instituto de Salud Carlos III, Madrid, Spain

¹² Group CB06/06/0003 CIBER of Respiratory Diseases (CIBERES), Instituto de salud Carlos III, Madrid, Spain

¹³ Laboratory of Molecular Microbiology of Human Pathogens, Instituto de Tecnologia Química e Biológica António Xavier, Universidade Nova de Lisboa (ITQB NOVA), Oeiras, Portugal

Background: Whole genome sequencing (WGS)-based approaches for pneumococcal capsular typing have become an alternative to serological methods. *In silico* serotyping from WGS has not yet been applied to long-read sequences produced by third-generation technologies.

Objectives: The objective of the study was to determine the capsular types of pneumococci causing invasive disease in Catalonia (Spain) using serological typing and WGS and to compare the performance of different bioinformatics pipelines using short- and long-read data from WGS.

Methods: All invasive pneumococcal pediatric isolates collected in Hospital Sant Joan de Déu (Barcelona) from 2013 to 2019 were included. Isolates were assigned a capsular type by serological testing based on anticapsular antisera and by different WGS-based pipelines: Illumina sequencing followed by serotyping with PneumoCaT, SeroBA, and Pathogenwatch vs MinION-ONT sequencing coupled with serotyping by Pathogenwatch from pneumococcal assembled genomes.

Results: A total of 119 out of 121 pneumococcal isolates were available for sequencing. Twenty-nine different serotypes were identified by serological typing, with 24F (n= 17; 14.3%), 14 (n= 10; 8.4%), and 15B/C (n= 8; 6.7%) being the most common serotypes. WGS-based pipelines showed high concordance with serological typing (>91% of accuracy). The main discrepant results were found at the serotype level within a serogroup: 6A/B, 6C/D, 9A/V, 11A/D, and 18B/C. Only one discrepancy at the serogroup level was observed: serotype 29 by serological testing and serotype 35B/D by all WGS-based pipelines.

Conclusions: Thus, bioinformatics WGS-based pipelines, including those using third-generation sequencing, are useful for pneumococcal capsular assignment. Possible discrepancies between serological typing and WGS-based approaches should be considered in pneumococcal capsular-type surveillance studies.

P06. COSTS OF HEPATITIS A OUTBREAKS IN AUTONOMOUS COMMUNITIES WITHOUT AND WITH PEDIATRIC VACCINATION AGAINST HEPATITIS A DURING THE 2010–2018 PERIOD

Pere Plans^{1,2}, Carmen Varela^{3,2}, Carles Pericas^{4,2}, Conchita Izquierdo¹, Marina Peñuelas^{3,2}, Ana Martínez^{1,2}, María Guerrero^{3,2}, Núria Torner², Alejandro Martínez⁶, Eva Borrás^{1,2,5}, Francisco Roig⁷, Nuria Soldevila^{2,5}, Cristina Rius^{8,2}, Ana Maria Avellón^{3,2}, Pere Godoy^{9,2}, Angela Domínguez^{5,2}, PREVICET Working Group on Viral Hepatitis

¹ Agencia de Salud Pública de Cataluña, Barcelona

² CIBERESP, Instituto de Salud Carlos III, Madrid

³ Centro Nacional de Epidemiología, Madrid

⁴ Institut de Recerca Biomèdica, Hospital Sant Pau, Barcelona

⁵ Departamento de Medicina, Universidad de Barcelona, Barcelona

⁶ Servicio de Epidemiología, Consejería de Salud de la Región de Murcia, Murcia

⁷ Subdirección General de Epidemiología y Vigilancia de la Salud, Comunidad Valenciana, Valencia

⁸ Agencia de Salud Pública de Barcelona, Barcelona

⁹ Institut de Recerca Biomèdica (IRB Lleida), Lleida

Background: Hepatitis A virus (HAV) is associated with cases, outbreaks, hospitalizations and deaths despite hepatitis A vaccines are available.

Objectives: To assess health costs and surveillance costs associated with VHA outbreaks in Autonomous Communities without and with pediatric vaccination against hepatitis A during the 2010–2018 period

Methods: Five Autonomous Communities without (Castilla y León, Murcia, Navarra, Comunidad de Madrid, Comunidad Valenciana) and two Autonomous Communities with pediatric VHA vaccination (Catalunya, Ceuta) registered all outbreak-associated cases during the study period. Costs were assessed from the number of affected and hospitalized persons, epidemiological surveillance activities and resources used. Total costs and costs per 100.000 population were compared in Autonomous Communities without and with pediatric VHA vaccination.

Results: A total number of 450 VHA outbreaks, 1824 hospitalizations and 10620 persons affected were reported during the study period. 74% of outbreaks, 74% of hospitalizations and 78% of persons affected were reported in Autonomous Communities without pediatric VHA vaccination. Total costs were 1.6 and 0.4 million € in Autonomous Communities without and with pediatric VHA vaccination, respectively. Total costs per 100,000 population were 1.7 times greater (10008 € vs. 5998 €) in Autonomous Communities without pediatric VHA vaccination. Hospitalization costs per 100,000 population were 2.1 times greater (6616 € vs. 3125 €) in Autonomous Communities without pediatric VHA vaccination. Health care costs per 100,000 population were 1.8 times greater (7417 € vs. 4021 €) in Autonomous Communities without pediatric VHA vaccination. Epidemiological surveillance costs per 100,000 population were 1.3 times greater (2590 € vs. 1977 €) in Autonomous Communities without pediatric VHA vaccination.

Conclusions: Total costs and costs per 100.000 population associated to hepatitis A outbreaks were greater in Autonomous Communities without pediatric VHA vaccination. Pediatric VHA vaccination could reduce the health impact and health costs associated with VHA outbreaks.

P07. DRIED BLOOD SPOT IN VACCINE RESPONSE IN CHILDREN (DRIVE STUDY)

Rodríguez-Molino Paula^{1,2,3}, Rodríguez-Galet Ana^{4,5}, Hurtado-Gallego Jara^{1,2,3}, Alcolea Ruiz Sonia^{1,2,3}, Atucha Jorge^{1,2,3}, Méndez-Echevarría Ana^{1,2,3}, Falces Romero Iker^{2,6}, Cámara Carmen⁷, Del Rosal Teresa^{1,3,8}, García López-Hortelano Milagros^{1,2,3}, Calvo Cristina^{1,2,3}, Galán Juan Carlos^{5,8}, Sainz Talía^{1,2,3}, and Holguín África^{4,5,9}

¹General Pediatrics, Infectious and Tropical Diseases Department, Hospital La Paz, Madrid, Spain

²Centro de Investigación Biomédica en Red en Enfermedades Infecciosas, CIBERINFEC

³Instituto de Investigación La Paz (IdiPAZ), Madrid, Spain

⁴Instituto de Investigación Ramón y Cajal (IRYCIS), Madrid, Spain

⁵Department of Microbiology, Ramón y Cajal University Hospital, Madrid, Spain

⁶Department of Microbiology and Parasitology, La Paz University Hospital, Madrid, Spain

⁷Department of Immunology, La Paz University Hospital, Madrid, Spain

⁸Centro de Investigación Biomédica en Red en Enfermedades Raras, CIBERER

⁹Centro de Investigación Biomédica en Red en Epidemiología y Salud Pública, CIBERESP

Background: Most children with incomplete vaccination reside in countries where vaccination coverage is frequently unknown. In comparison to serum samples, dried blood samples (DBS) are more cost-effective, non-invasive, and easy to obtain, transport, and store without the need for a cold chain. Data on herd immunity are crucial for designing strategies to prevent future outbreaks.

Objectives: We present preliminary data on the correlation in paired serum/DBS samples of protective IgG levels against six pathogens causing vaccine-preventable diseases in an ongoing prospective project.

Methods: We selected 150 patients below 18 years old from a tertiary hospital in Madrid to assess immunoprotection against six vaccine-preventable pathogens (diphtheria, tetanus, pertussis, measles, mumps, and rubella) in paired serum (5µL) /DBS (100µL eluted in 1 mL of phosphate-buffered saline or PBS, equivalent to 5µL of serum per test). We used the VirClia chemiluminescent immunoassay (Vircell). Clinical-epidemiological data were collected from patients.

Results: Preliminary data from the ongoing study involving 87 patients showed variations in the percentage of subjects with protective IgG in serum across different pathogens: 87% for rubella, 83% for mumps, 68% for measles, 91% for diphtheria, 79% for tetanus, and 9% for pertussis. Positive results for DBS testing were 92% for rubella, 90% for mumps, 69% for measles, 100% for diphtheria, 76% for tetanus, and 2% for pertussis. Paired DBS/serum samples exhibited similar results with a high correlation (>85%) for all pathogens. Coincident results in serum and DBS were found in 57% of patients for the six pathogens.

Conclusions The antibody levels against the six tested pathogens indicated a protective humoral response in the study group, with high correlation between serum and DBS. These preliminary findings, when completed, will endorse the utility of DBS in monitoring vaccination coverage in seroprevalence studies, especially in resource-limited settings where serum specimens may be unavailable.

P08. EFFECTIVENESS OF PHARMACOLOGICAL INTERVENTIONS FOR THE PREVENTION OF ADVERSE EVENTS IN INTENSIVE CARE UNITS: AN OVERVIEW

María Paz Carrera Fabia^{1,2}, Efrain Pantoja^{2,3}, José Ángel Muñoz², Daina Parellada², Leticia Barajas⁴, Nuno Amparo⁵, Karla Salas^{3,10}, Juan Marcos Parise-Vasco⁶, Yamila Diaz⁷, Carolina Reiquejo^{8,9}, Julia Salvador³, Stefanie Suclupe³, Ivan Solà^{1,9,10}, Javier Bracchiglione^{1,10}, María José Martínez-Zapata^{1,9,10}

¹ Cochrane Iberoamerica, Barcelona, España

² Universidad Autónoma de Barcelona, Barcelona, España

³ Dirección de Calidad, Procesos e Innovación, Hospital de la Vall d'Hebron, Barcelona, España

⁴ Unidad de Investigación de Medicina Basada en Evidencias, Centro Cochrane, Hospital Infantil de México Federico Gómez

⁵ Unidad de Salud Pública del ACES Alentejo Central, Portugal

⁶ Centro de Investigación en Salud Pública y Epidemiología Clínica. Facultad de Ciencias de la Salud Eugenio Espejo. Centro Asociado Cochrane de Ecuador. Red Iberoamericana. Universidad UTE, Quito, Ecuador

⁷ Departamento Programas de Salud, Instituto Nacional de Enfermedades Respiratorias, Dr. Emilio Coni - ANLIS Malbrán - Ministerio de Salud Argentina

⁸ Servicio de Epidemiología Clínica HSCSP, Barcelona, España

⁹ Institut de Recerca Sant Pau, Barcelona, España

¹⁰ CIBERESP, Madrid, España

Background: In intensive care units (ICU), safety is of the utmost importance due to the high vulnerability of patients. The incidence of adverse events is estimated to be twice as high as in other less complex units.

Objectives: To provide an overview of the existing evidence on the effects of pharmacological interventions to prevent or reduce adverse events in ICUs.

Methods: We searched for Systematic Reviews (SRs) in Medline, CINHALL, Cochrane Library, and Epistemonikos from inception until December 2022. Two reviewers independently evaluated titles and abstracts and selected articles in full text; a third reviewer addressed discrepancies. One reviewer extracted data from included SRs and a second checked for accuracy. We assessed methodological quality of the included SRs using AMSTAR-2 and overlap of primary studies using the corrected covered area (CCA).

Results: We included 65 SRs with 1242 primary articles, most of which were randomized clinical trials. Quality was low in 13 (20%) SRs and critically low in 35 (53.8%) SRs. Overall CCA was 1.2%. SRs focused on ventilator-associated pneumonia (VAP), delirium, gastrointestinal bleeding, hospital-acquired infections, and thrombosis. The pharmacological interventions included families of drugs or specific drugs. The controls were placebo, usual care, or another active drug. Oral topical chlorhexidine suggested benefit for the prevention of VAP and nosocomial pneumonia. Dexmedetomidine and melatonin showed favorable effects for preventing delirium, and dexmedetomidine decreased the duration of mechanical ventilation and ICU stay. Proton pump inhibitors showed benefit in preventing gastrointestinal bleeding. No interventions were associated with prevention of ICU mortality, overall mortality, or reduction of hospital stay.

Conclusions: We found some effective interventions in preventing adverse events in ICU, however the confidence in these findings is mainly low or critically low.

P09. EPI (EMBARAZO Y PRIMERA INFANCIA) DATA

Ana Esplugues¹⁻³, Aitana Lertxundi^{4,5}, Ferran Ballester¹⁻³, Marisa Estarlich¹⁻³, Sabrina Llop^{2,3}, Jesús Ibarluzea⁴⁻⁶, Loreto SantaMarina⁵⁻⁶, Amaia Irizar⁴, Mikel Subiza⁷, Jordi Júlvez⁸, Carmen Freire^{9,10}, Ana Fernández-Somoano¹¹, Elisa Llubra-Olivé¹², M Dolores GómezRoig¹³, Itziar Vergara⁵, Mario Murcia¹⁴, Raquel Soler-Blasco¹⁻³, Juana Mari DelgadoSaborit¹⁵, Paula Carrasco¹⁵

¹ Departament d' Infermeria. Facultat d'Infermeria i Podologia

² Unidad Mixta de Investigación en –Ambiente y Salud. UJI-FISABIO-UV

³ FISABIO. Fundación para el Fomento de la Investigación Sanitaria y Biomédica de la Comunitat Valenciana

⁴ Departamento Medicina Preventiva y Salud Pública. Universidad País Vasco

⁵ Biodonostia

⁶ Departamento de Sanidad. Subdirección Gipuzkoa. Gobierno Vasco

⁷ Departamento de psicología clínica. Universidad País Vasco

⁸ IISPV Institut d'Investigació Sanitaria Pere Virgili

⁹ IBS Granada

¹⁰ Departamento de Medicina Legal, Toxicología y Antropología Física. Universidad de Granada

¹¹ Departamento de Medicina. Universidad de Oviedo

¹² Hospital de la Santa Creu i Sant Pau

¹³ Hospital Sant Joan de Déu Barcelona

¹⁴ DGSP. Conselleria Sanitat. Generalitat Valenciana

¹⁵ Epidemiología perinatal, Salud ambiental e investigación clínica. Universitat Jaume I

Background: The prenatal period is crucial for good physical and neuropsychological development throughout life. To this end, to conduct research on pregnancy cohorts on a continuous basis over time is a public health priority.

Objectives: To explore the accessibility and availability of data from the health records of pregnant women and children up to the age of 6 years that can be used to initiate a birth cohort in 5 autonomous communities of Spain.

Methods: Exploratory analysis of the data included in the health registry from the time a woman becomes pregnant until the child is 6 years old. The autonomous communities analyzed were Andalusia, Asturias, the Basque Country, Catalonia and Valencia. The objectives have been achieved by following these steps 1) Identification and selection of key health informants. 2) Interviews with key informants. 3) Mapping of the flow of information to obtain the variables of interest. 4) Generation of an inventory of health registry variables

Results: Although all communities follow the Pregnancy and Child health surveillance program, the way data is collected is different and makes it difficult to do direct comparisons. In addition, many of the variables are collected in text form, which makes it difficult to extract these data for research purposes.

Conclusions: Conducting a pregnancy and early childhood cohort based on health records would be possible if an effort were made to homogenise the information collected in the medical records, or if there were a structure capable of developing and validating algorithms to identify and work with the variables of interest even if they are collected in different ways. An example of this is BIFAP, the Spanish primary healthcare database, although it does not yet have data from all autonomous communities and is based only in records from family doctors and paediatricians.

P10. EPIDEMIOLOGICAL FACTORS AND CLINICAL PRESENTATION OF NEWLY DIAGNOSED MGUS PATIENTS FROM TWO HOSPITALS: THE IBERICAT COHORT

Ainhoa Botella¹, Yolanda Benavente^{1,2}, Sara Hermosa^{1,2}, Gabriela Bustamante³, Maria Teresa Quiñones Rocés¹, Itziar Carro Arostegui¹, Cristina Baca Cano¹, Abel Domingo Garcia³, Cristina Espi Soldevila¹, Angelica Aranda Montaña⁴, Sheila Sanchez Perez⁴, Antonio José de la Torre^{5,2}, Antonio Sánchez Baos¹, Vicente Martín^{5,2}, María Rubín García⁵, Maria Elena Cabezudo³, Delphine Casabonne^{1,2}

¹ Catalan Institute of Oncology (ICO-IDIBELL), L'Hospitalet de Llobregat, Spain

² Centro de Investigación Biomédica en RED: Epidemiología y Salud Pública (CIBERESP), Madrid, Spain

³ ICO Hospitalet - Hospital Moises Broggi

⁴ Hospital Moises Broggi

⁵ University of Leon, Spain

Background: Monoclonal gammopathy of undetermined significance (MGUS), a precursor to multiple myeloma (MM), affects 5% of people over 50, with 1% progressing annually to MM. Typically discovered incidentally during unrelated medical checkups. MGUS lacks standardized guidelines for follow-up care. Understanding the risk of progression from MGUS to MM requires further research. To address these gaps, we initiated a cohort study on newly diagnosed MGUS cases exploring biomarkers, clinical, genetical and epidemiological factors associated with progression risk.

Objectives: To study at baseline the demographics and clinical profiles of all consecutively newly diagnosed MGUS patients in the IBERICAT study cohort.

Methods: Between January 2020 to June 2023, all newly diagnosed MGUS patients from two Catalan hospitals (Catalan Institute of Oncology and San Juan Despí Moisés Broggi) were invited to join the IBERICAT study. Upon providing consent, participants submitted samples (blood, stool, and saliva), completed a comprehensive questionnaire, shared anthropometric details and clinical information. Medical data was extracted from the Electronic Health Record (EHR). Descriptive statistics of the baseline cohort profile at baseline were analysed using Stata.

Results: Among 595 newly diagnosed patients, 488 opted to participate (82%). The ratio female to male was about 1 and the mean age was 69 years old (SD 13, 24 to 95 years old). The majority was referred from primary care (42%) and main immunoglobulin subtypes were IgG (63%), IgA (17%) and IgM (22%). Questionnaire data are available for around 50% of participants and we will present epidemiological factors in relation with clinical characteristics.

Conclusions: Detailed information about MGUS patients referred to hospitals is limited in Spain. The IBERICAT study will provide new insights into this precursor stage.

P11. EXPLORING RSV POSITIVITY RATES IN OLDER ADULTS IN THE REGION OF VALENCIA BETWEEN 2010 AND 2020

Arantxa Urchueguía-Fornes^{1,2}, Cintia Muñoz-Quiles^{1,2}, Ainara Mira-Iglesias^{1,2}, Carlos Fernández-García¹, Mónica López-Lacort^{1,2}, Elisa Correcher-Martínez^{1,2}, Juan José Carreras-Martínez^{1,2}, Xavier López-Labrador^{1,2}, Beatriz Mengual-Chulià^{1,2}, Alejandro Orrico-Sánchez^{1,2,3}, Javier Díez-Domingo^{1,2,3}

¹ FISABIO-Public Health, Valencia, Spain

² CIBERESP, ISCIII

³ Universidad Católica de Valencia

Background: RSV burden among older adults is not well understood due to a lack of laboratory-confirmed data.

Objectives: To describe the percentage of positivity and symptomatology of hospitalisations for RSV respiratory infections in adults of 65 years of age or older using an active surveillance network.

Methods: A multicentre prospective observational study within the Valencia Hospital Surveillance Network for the Study of Influenza and Other Respiratory Viruses (VAHNSI) framework was conducted during 10 influenza seasons (2010/2011 to 2019/2020) in 4-10 hospitals covering 21-46% of total inhabitants of the Valencia Region of Spain (around 5M). Adults ≥ 65 years of age hospitalized due to a respiratory complain, meeting the ECDC influenza-like illness (ILI) case definition and giving their informed consent were included and were tested by RT-PCR for 8 respiratory viruses.

Results: Overall, 16,433 patients met the ILI case definition and were included in the study. Of them, 31% had a positive PCR result (5,096) of which 14% tested positive for RSV (n=719). The median age of admitted patients was 80 (74, 86) years. The female-male ratio was 0.84:1. The seasonal RSV positivity rate varied between 8% and 31%. 90% of RSV patients had at least one comorbidity. The main symptom among RSV+ patients was cough (94.9%), followed by shortness of breath, (94.6%) and fever (74%).

Conclusions: Older adults with comorbidities are at higher risk of being hospitalized due to RSV. RSV positivity rates varied greatly across seasons. Cough and shortness of breath were present in 95% of RSV positive patients.

P12. EXPOSURE TO SYNTHETIC PHENOLS AND RISK OF PRECOCIOUS PUBERTY: A MULTICENTRIC CASE-CONTROL STUDY

Alicia Olivas-Martinez¹, Paula Sol Ventura Wichner², Francesca Castiello³, Xavier Herrero⁴, Meritxell Torrebias⁵, Zelmira Bosch⁴, Raquel Corripio⁶, Arantxa Escribano⁷, Isolina Riaño Galán^{8,9}, Carmen Freire^{1,9,10}

¹Instituto de Investigación Biosanitaria de Granada (ibs.GRANADA), Granada

²Institut d'Investigació en Ciències de la Salut Germans Trias i Pujol, Badalona; Biomedical Data Science Team, ISGlobal, Barcelona

³Pediatric Unit, Germans Trias i Pujol University Hospital, Badalona

⁴Pediatric Unit, HM Nens Hospital, Barcelona

⁵Consorcio Hospitalario de VIC

⁶Corporación Parc Tauli Hospital, Sabadell

⁷Hospital Universitario Virgen de la Arrixaca, Murcia

⁸Hospital Universitario Central de Asturias, Oviedo

⁹CIBER de Epidemiología y Salud Pública

¹⁰Departamento de Medicina Legal, Toxicología y Antropología Física, Universidad de Granada, Granada

Background: The incidence of precocious puberty (PP) and variants (e.g., premature thelarche) has increased over recent decades. Early-life exposure to endocrine disrupting environmental chemicals such as bisphenol A (BPA) and other synthetic phenols may increase the risk of earlier puberty onset in girls.

Objectives: To assess the association between exposure to several synthetic phenols, including bisphenols, parabens, and benzophenones, and risk of PP.

Methods: This is a multicentric, hospital-based, case-control study that recruited 122 girls diagnosed with PP or a variant and 140 controls in Asturias, Granada, Murcia, and Catalonia between 2020 and 2023. In spot urine samples collected from girls, concentrations of three bisphenols (BPA, bisphenol S [BPS] and F [BPF]), four parabens (methyl- [MPB], ethyl- [EPB], propyl- [PPB], and butyl-paraben [BPB]) and six benzophenones (BP) (BP1, BP3, BP6, BP8, and 4-OH-BP) were analyzed and corrected for specific gravity. Associations were examined by unconditional logistic regression models adjusted by hospital, age, and girls BMI z-score.

Results: BPA was detected in all urine samples from cases (median=4.70 ng/mL) and 97% of samples from controls (median=2.89 µg/L) and it was associated with higher odds of PP (OR [95%CI]=1.18 [1.13-1.62] per two-fold increase in BPA concentration and 2.85 [1.15-7.07] for 3rd versus 1st tertile BPA). Girls with summed concentration of bisphenols in the third tertile had 4.65 (95%CI=1.83-11.8) higher odds of PP. Among parabens and benzophenones, MPB and BP3 were the most frequently detected (cases: 98% and 90%; controls: 99% and 86%). Individual parabens and benzophenones were not associated with PP, but summed concentration of benzophenones showed a non-monotonic association with increased odds of PP (2nd tertile: OR=3.71 [1.72-7.98], 3rd tertile: OR=2.53 [1.16-5.53]).

Conclusions: Exposure to BPA and other environmental phenols is widespread in school-age girls and may contribute to advance the onset of puberty.

P13. HAZARDOUS AND BINGE DRINKING AMONG PEOPLE WHO INJECT DRUGS IN CATALONIA: A NEED FOR COMPREHENSIVE INTERVENTIONS

Jorge Palacio-Vieira^{1,2}, Albert Espelt^{2,3,4}, Xavier Majó⁵, Montse Bartroli⁶, Mercè Meroño⁷, Victoria González⁸, Mercè Gotsens^{2,6,9}, Amaia Garrido⁶, Marina Bosque^{3,10}, Joan Colom⁵, Jordi Casabona^{1,2,11}, Cinta Folch^{1,2,11}

¹ Centre of Epidemiological Studies of HIV/AIDS and STI of Catalonia (CEEISCAT), Health Department, Generalitat de Catalunya, Badalona, Spain

² CIBER Epidemiología y Salud Pública (CIBERESP), Madrid, Spain

³ Department of Psychobiology and Methodology of Health Sciences, Autonomous University of Barcelona. Bellaterra, Spain

⁴ Epi4health Interuniversity Research Group., Faculty of Health Sciences of Manresa, Universitat de Vic-Universitat Central de Catalunya (UVic-UCC), Manresa, Spain

⁵ Subdirecció General d'Addiccions, VIH, ITS i Hepatitis Víriques, Agència de Salut Pública de Catalunya, Departament de Salut | Generalitat de Catalunya

⁶ Servei de Prevenció i Atenció a les Drogodependències (SEPAD), Direcció de Promoció de la Salut (DIPROMS). Agència de Salut Pública de Barcelona (ASPB), Barcelona, Spain

⁷ Fundació Àmbit Prevenció, Barcelona, Spain

⁸ Microbiology Department, Germans Trias i Pujol University Hospital, Badalona, Spain

⁹ Institut de Recerca Biomèdica Sant Pau (IIB SANT PAU), Barcelona, Spain

¹⁰ Epi4health Research Group, Faculty of Health Sciences, Universitat Oberta de Catalunya, Barcelona, Spain

¹¹ Germans Trias i Pujol Research Institute (IGTP), Campus Can Ruti, Badalona, Spain

Background: Alcohol consumption among people who inject drugs (PWID) has been associated with an increased risk of several health conditions, including injecting drugs and sexual behaviours, using non-injecting drugs, having an overdose and violence.

Objectives: To analyse hazardous and binge drinking among PWID and their association with socio-demographic characteristics, injecting drugs and drugs use behaviours, sexual risk behaviours, infectious diseases, and violence in Catalonia.

Methods: Information was obtained from the 2019 HIV and Sexually Transmitted Infections (STI) Bio-Behavioural Surveillance System in Catalonia (REDAN Study) carried out in harm reduction centres. Main outcomes were hazardous (AUDIT-C scores ≥ 5 for men and ≥ 4 for women) and binge drinking (1 or more occasions of 6 drinks in a single occasion during last year). Prevalence Ratios (PR) were estimated to assess the association between both outcomes and sociodemographic, injecting and non-injecting drug use, sexual risk behaviours and violence.

Results: Among the 697 PWID recruited, 81.3% were men and 56% were 41 years or older. Prevalence of hazardous and binge drinking reached 31.6% and 34.9%, respectively, and they were associated with injecting drugs at least once a week (PR: 1.32 95% CI 1.02 – 1.71 and PR: 1.42 95% CI 1.14 – 1.77 respectively), using non-injecting drugs (PR: 1.48 95% CI 1.06 – 2.07 and PR: 1.41 95% CI 1.06 – 1.88) and experiencing physical violence (PR: 1.42 95% CI 1.11 – 1.81 and PR: 1.41 95% CI 1.15 – 1.75). Sharing used needles (PR: 1.36 95% CI 1.04 – 1.72) and untreated HCV Ab positive (PR: 1.51 95% CI 1.10 – 2.06) were also associated with hazardous drinking.

Conclusions: Tailored comprehensive interventions are needed to reduce hazardous and binge drinking among PWID in Catalonia. Special emphasis should be placed on decreasing the risk of injecting drugs behaviours, the use of non-injecting drugs, and violence.

P14. HIGH FREQUENCIES OF ANTIBIOTIC RESISTANCE GENES IN FRAILTY ELDERLS

Ana Barberá¹, Rosario Ortolá^{2,4}, Fernando Rodríguez Artalejo^{2,4}, Andrés Moya^{1,2,3} and Susana Ruiz-Ruiz^{1,2,3}

¹Área de Genómica y Salud (FISABIO), València, Spain

²Consortio de Investigación Biomédica en Red de Epidemiología y Salud Pública (CIBEResp), Madrid, Spain

³Instituto de Biología Integrativa de Sistemas (I2Sysbio), CSIC-UV, València, Spain

⁴Department of Preventive Medicine and Public Health. Universidad Autónoma de Madrid and IMDEA-Food

Background: Frailty is an aging-associated geriatric syndrome characterized by losing muscle mass and strength, reduced endurance, decreased physiological reserves, and cognitive impairment. It is estimated that between 4 and 27% of elders suffer from frailty, being more prone to experience a lower quality of life and a higher risk of death, hospitalization and institutionalization. During aging, the gut microbiota, the second genome, changes and could influence in the health status and trigger physiological disorders.

Objectives: Study the gut microbiota role in frailty

Methods: We established a sub-cohort of 203 elder volunteers from the Seniors-ENRICA-2 cohort classified into to frailty (64) and non-frailty (139) groups according to Fried's criteria and we conducted a microbiome study where the metagenome was sequenced.

Results: Our results showed statistically significant differences in 681 KOs (KEGG ORTHOLOGY) when comparing frailty and non-frailty. After performing an enrichment analysis, a total of 209 KOs, grouped into 28 metabolic pathways, showed statistically significant differences between groups. We detected in frailty a high prevalence of beta-lactam resistance category, where K17836, K03585, K18138, K18139, K12340 and K18135 are part of the multidrug efflux systems, outer membrane proteins and multidrug resistance operons that are implicated in break down antibiotics and export from the inside to the outside. However, a low prevalence of K10823, K15583, K15582 and K15581 (oligopeptide transport system ATP-binding proteins) responsible for the capture of peptides and translocation across the membrane from the external, K02172, a receptor that senses β -lactams through the acylation of its sensor domain, and K05366, a penicillin-binding protein, were also detected in frailty. In addition, another 12 KOs within the antimicrobial resistance category showed an increased in the frailty group.

Conclusions: These preliminary results suggest that the gut microbiota plays an important role in the therapeutic response to antibiotics against infections in frailty elders and influence in the health status, potentially contributing to its worsening.

P15. HOW TO EVALUATE AND VALUE SCIENCE DISSEMINATION?

Maica Rodríguez-Sanz^{1,2,3,4}, Dolores Ruiz-Muñoz^{1,2,3}, Beatriz Román¹, Katherine Pérez^{1,2,3}, Maria José López^{1,2,3,4}, Carme Borrell^{1,2,3,4}

¹ Agència de Salut Pública de Barcelona

² CIBERESP

³ IIB Sant Pau

⁴ Universitat Pompeu Fabra

Background: It is important to transfer scientific knowledge to society, for this reason it is necessary to value scientific dissemination in the merits of institutions, research groups and researchers. Even so, in the different systems that evaluate scientific activity, the assessment of dissemination actions is still very limited. In this sense, the Crue and FECYT Guide for the Evaluation of Scientific Dissemination Activity was developed.

Objective: To compare the evaluation of the knowledge translation and scientific dissemination of a research project using 3 evaluation systems: CIBERESP, IIB SANT PAU and Crue-FECYT.

Methods: Based on quantity and diversity of scientific dissemination actions, we selected the project "Health in the streets: Evaluation of the effect on health of Superblocks in Barcelona", from the Barcelona Public Health Agency. The 3 assessment methods were applied, and scores were obtained and transformed into a scale from 0 to 100

Results: The project "Health in the Streets" scored 1/10 on knowledge translation according to CIBERESP; scored 1/4 on knowledge translation and 2/4 on scientific dissemination according to IIB SANT PAU; and finally scored 1/8 on translation and 9/18 on dissemination according to Crue-FECYT. The CIBERESP system does not value scientific dissemination, but both scores IIB SANT PAU and Crue-FECYT were high (97.5/100 and 100/100 respectively), the first based on conferences and the last including audiovisual media and internet.

Conclusions: The Crue-FECYT guide is a useful tool for assessing and promoting scientific dissemination in the merits of the scientific community.

P16. IDENTIFICATION OF NEW OVERLAPPING AND DISEASE-SPECIFIC GENETIC RISK FACTORS FOR RHEUMATOID ARTHRITIS AND ANKYLOSING SPONDYLITIS: A META-ANALYSIS OF THREE LARGE EUROPEAN POPULATIONS AND FUNCTIONAL CHARACTERIZATION IN HEALTHY AND OBESE SUBJECTS

Antonio Cabrera-Serrano^{1,2}, José Manuel Sánchez Maldonado^{1,2}, Marisa Cañadas Garre^{1,2}, Yolanda Benavente^{4,5}, Ileana Filipescu⁶, Helena Canhao⁷, Luca Quartuccio⁸, Merete L. Hetland⁹, Marieke Coenen¹⁰, Katarzyna Bogunia-Kubik¹¹, Vibeke Andersen¹², Víctor Moreno^{4,5}, Delphine Casabonne^{4,5}, Joao Eurico Fonseca¹³, Eduardo Collantes¹⁴, Juan Sainz^{1,2,5,15}

¹Genomic Oncology Area, GENYO. Centre for Genomics and Oncological Research: Pfizer / University of Granada / Andalusian Regional Government, PTS, Granada, Spain

²Instituto de Investigación Biosanitaria IBs.Granada, Granada, Spain

³Rheumatology Department, University of Medicine and Pharmacy "Iuliu Hatieganu", Cluj-Napoca, Romania

⁴Cancer Epidemiology Research Programme, Institut Català d'Oncologia (IDIBELL), L'Hospitalet de Llobregat, Barcelona, Spain

⁵Consortium for Biomedical Research in Epidemiology and Public Health (CIBERESP), Barcelona, Spain.

⁶Radboud Institute for Health Sciences, Department of Rheumatology, Radboud University Medical Center, Nijmegen, Netherlands

⁷EpiDoC Unit, CEDOC, NOVA Medical School and National School of Public Health, Universidade Nova de Lisboa, Lisbon, Portugal.

⁸Department of Medical Area, Clinic of Rheumatology, University of Udine, Udine, Italy

⁹The Danish Rheumatologic Biobank and Copenhagen Center for Arthritis Research (DANBIO) Registry, The Danish Rheumatologic Biobank and Copenhagen Center for Arthritis Research (COPECARE), Center for Rheumatology and Spine Diseases, Centre of Head and Orthopaedics, Rigshospitalet, Glostrup, Denmark

¹⁰Radboud Institute for Health Sciences, Department of Human Genetics, Radboud University Medical Center, Nijmegen, Netherlands

¹¹Hirszfeld Institute of Immunology and Experimental Therapy, Polish Academy of Sciences, Wrocław, Poland

¹²Molecular Diagnostic and Clinical Research Unit, IRS-Center Sonderjylland, University Hospital of Southern Jutland, Aabenraa, Denmark

¹³Rheumatology and Metabolic Bone Diseases Department, Hospital de Santa Maria, Centro Hospitalar Universitário Lisboa Norte (CHLN), Lisbon, Portugal

¹⁴Rheumatology Department, Reina Sofia Hospital/Instituto Maimónides de Investigación Biomédica de Córdoba (IMIBIC)/University of Córdoba, Córdoba, Spain

¹⁵Department of Biochemistry and Molecular Biology I, University of Granada, Granada, Spain

Background: Genome-wide association studies (GWAS) have identified genetic markers associated with rheumatoid arthritis (RA) and ankylosing spondylitis (AS), but little is known about the overlapping genetic factors.

Objectives: Considering the similar clinical presentation of RA and AS, the aim of this study was to identify overlapping susceptibility variants for both diseases and to shed some light into their biological function.

Methods: We conducted meta-analyses for RA and AS using genetic data of the UK Biobank and FinnGen cohorts (10,616 RA and 2,079 AS cases and 510,783 controls). The most interesting findings were validated in the REPAIR cohort (2181 RA and 422 AS cases and 2272 controls). Mechanistically, we investigated whether newly identified overlapping markers influenced host immune responses using data of the Human Functional Genomic Project (HFGP).

Results: The meta-analysis of the three European cohorts confirmed that the BTN2A1rs1977199, CARMIL1rs72831267, GRM4rs2495964, PRSS16rs72843633, ITPR3rs77601296, and ITPR3rs9469540 SNPs were associated with a decreased risk of RA and AS ($p_{RA}=5.17 \times 10^{-5}/p_{AS}=7.44 \times 10^{-7}$, $p_{AR}=2.07 \times 10^{-6}/p_{AS}=1.07 \times 10^{-3}$, $p_{RA}=1.18 \times 10^{-4}/p_{AS}=1.65 \times 10^{-7}$, $p_{RA}=9.35 \times 10^{-7}/p_{AS}=8.12 \times 10^{-7}$, and $p_{RA}=5.39 \times 10^{-10}/p_{AS}=7.52 \times 10^{-6}$). Conversely, the MANEArS72920280 and MGAM2rs73158426 SNPs associated with an increased risk of both diseases ($p_{RA}=4.48 \times 10^{-4}/p_{AS}=4.31 \times 10^{-4}$ and $p_{RA}=7.36 \times 10^{-4}/p_{AS}=1.22 \times 10^{-4}$). Mechanistically, we found that carriers of the ITPR3rs9469540C allele had increased concentrations of IL10 after stimulation of PBMCs with LPS ($p=0.00013$)

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whereas obese subjects carrying the *BTN2A1*rs1977199G allele had increased concentrations of heme oxygenase-1 (HO1) ($p=6.73 \times 10^{-6}$). We also found that the *H2BC11*rs66462181 and *BTN3A2*rs9393716 SNPs had an inverse association with RA and AS ($p_{RA}=5.08 \times 10^{-5}/p_{AS}=1.09 \times 10^{-5}$ vs. $p_{RA}=1.36 \times 10^{-5}/p_{AS}=8.09 \times 10^{-6}$) and that their effect was mediated by HO-1 ($p=0.00032$ and $p=2.43 \times 10^{-5}$).

Conclusions: This study shows that the *BTN2A1*, *CARMIL1*, *GRM4*, *PRSS16*, *ITPR3*, *MANEA* and *MGAM2* genes participate in common pathological mechanisms for RA and AS whereas *H2BC11* and *BTN3A2* act inversely in the promotion of both diseases. Functional results suggest an involvement of these loci to modulate IL10 and HO-1 levels.

P17. IMPACT OF STORAGE TIME IN DRIED BLOOD (DBS) AND DRIED PLASMA SAMPLES (DPS) FOR POINT-OF-CARE HEPATITIS C VIRUS (HCV) RNA QUANTIFICATION AND HCV CORE ANTIGEN DETECTION

Paloma Troyano-Hernández¹, Pedro Herrador^{1,2}, Francisco Gea³, Beatriz Romero-Hernández^{2,4}, Gabriel Reina^{5,6,7}, Agustín Albillos^{3,8,9}, Juan Carlos Galán^{2,4}, África Holguín^{1,2,4}

¹ HIV-1 Molecular Epidemiology Laboratory, Microbiology Department, Ramón y Cajal University Hospital-Ramón y Cajal Institute for Health research (IRYCIS), Madrid, Spain

² Microbiology Department, Ramón y Cajal University Hospital-Ramón y Cajal Institute for Health Research (IRYCIS), Madrid, Spain

³ Gastroenterology Department, Ramón y Cajal University Hospital-Ramón y Cajal Institute for Health research (IRYCIS), Madrid, Spain

⁴ Biomedical Research Center in Epidemiology and Public Health, Madrid, CIBERESP

⁵ Microbiology Department, Clínica Universidad de Navarra, Pamplona, Spain

⁶ ISTUN, Institute of Tropical Health, Universidad de Navarra, Pamplona, Spain

⁷ IdiSNA, Navarra Institute for Health Research, Pamplona, Spain

⁸ Biomedical Research Center on Liver and Digestive Diseases, CIBEREHD

⁹ University of Alcalá, Madrid, Spain

Background: The scale-up of hepatitis C virus (HCV) diagnosis and treatment requires affordable and simple tools to improve access to care, especially in low and middle-income settings with limited infrastructure or high-risk populations. Dried blood and plasma samples (DBS and DPS) are a useful alternative for HCV detection in settings lacking adequate infrastructure.

Objectives: We evaluated the effectiveness of DBS and DPS stored at room temperature versus plasma using a point-of-care HCV RNA quantitative assay, and we compared their performance to serum for the detection of HCV core antigen (HCVcAg) in stored DBS.

Methods: A prospective case-control study was conducted to evaluate the sensitivity, specificity, correlation, and mean difference of dried samples compared to plasma for the detection and quantification of HCV RNA using Xpert HCV Viral load (Cepheid), and to serum for the detection of HCVcAg using Architect HCV core antigen assay (Abbott). The dried samples were stored at room temperature for different storage times (immediate processing, 1 week, 15 days, 1 month, and 3 months). Additionally, we evaluated alternative cut-offs to improve HCVcAg detection in DBS.

Results: HCV RNA quantification in DBS and DPS presented 100% sensitivity and specificity, and a high correlation for up to three months of storage. HCV viremia showed a mean decrease of 0.5 log₁₀ IU/mL (DBS) and 0.3 log₁₀ IU/mL (DPS) for storage times up to 1 month. Architect HCVcAg detection presented high sensitivity/specificity (96%/100%) in DBS tested immediately after sampling, decreasing to 86% sensitivity after 7 days of storage. However, sensitivity increased when an optimized cut-off was applied for each storage time.

Conclusions: DBS and DPS are suitable samples for HCV RNA detection and quantification, being DPS more reliable for shorter storage times. DBS can be also used for HCVcAg qualitative detection and the sensitivity can be increased when adjusting the cut-off values.

P18. PET OWNERSHIP IN EARLY CHILDHOOD AND MENTAL HEALTH IN INMA STUDY

Llúcia González^{1,2}, Mònica Guxens^{1,3,4,5}, Ainara Andiaarena⁶, Loreto Santa-Marina^{1,7,8}, Adonina Tardón^{1,9}, Jordi Julvez^{1,5}, Cristina-Rodríguez Dehli¹⁰, Marisa Rebagliato Ruso^{1,2,11}, Marisa Estarlich^{1,2,12}

¹Spanish Consortium for Research on Epidemiology and Public Health (CIBERESP), Instituto de Salud Carlos III, c/ Monforte de Lemos 3-5, Madrid, 280, Spain

²Joint Research Unit in Epidemiology, Environment and Health FISABIO-UJI-UV

³Department of Child and Adolescent Psychiatry/Psychology, Erasmus MC, University Medical Centre, Rotterdam, The Netherlands

⁴Universitat Pompeu Fabra, Barcelona, Spain

⁵ISGlobal, Barcelona Biomedical Research Park (PRBB). Eighty-eighth Doctor Aiguader Av, 08003, Barcelona, Spain

⁶Faculty of Psychology, University of the Basque Country, UPV/EHU, 20018 San Sebastian, Spain

⁷Ministry of Health of the Basque Government, Sub-Directorate for Public Health and Addictions of Gipuzkoa, San Sebastian, Spain

⁸Biogipuzkoa Health Research Institute, Environmental Epidemiology and Child Development Group, San Sebastian, Spain

⁹Instituto Universitario de Oncología del Principado de Asturias (IUOPA), Universidad de Oviedo, Asturias, Spain

¹⁰Unidad de Endocrinología Pediátrica, Hospital Universitario San Agustín, Avilés, España

¹¹Health Sciences Faculty of Universitat Jaume I, Sos Baynat St. 12006, Castelló de la Plana, Spain

¹²Nursing and Chiropody Faculty of Valencia University. Nineteenth of Menéndez Pelayo St., 46010, Valencia, Spain

Background: Human-animal interactions during childhood enhance child socioemotional development.

Objectives: Analysing the effect of pet ownership in early childhood and their consequences on child's mental health in INMA Project.

Methods: Participants were 1767 families from INMA Project (Asturias, Gipuzkoa, Sabadell, and Valencia). A combined variable on pet ownership described if children never/always/only at age 1/only at age 4-5 had a pet. Child's emotional, conduct, hyperactivity and peer problems, and prosocial behaviour was assessed with the Strengths and Difficulties Questionnaire at age 7-8. Scores were dichotomized in normal vs borderline+abnormal. Frequencies, percentages and chi-squared tests were performed for descriptive and bivariate analyses. Binary logistic models were adjusted by sex, age, cohort and lifestyle and health covariates.

Results: Regarding pet ownership 25.8% of families always had a pet, with differences across cohort(22.7, 10.8, 26.2, and 37.3% in Asturias, Gipuzkoa, Sabadell, and Valencia, respectively, p-value<0.001). Mental health problems were significantly different for conduct(25.8, 26.2, 31.8, and 33.5% for Asturias, Gipuzkoa, Sabadell, and Valencia, respectively, p-value=0.025), hyperactivity (22.1, 18.4, 22.4, and 29.4%, p-value=0.001), and peer problems(13.2, 11.3, 15.1, and 17.9%, p-value=0.040) and non-significant for emotional(23.0, 22.4, 21.7, and 19.2%, p-value=0.542), and prosocial behaviour(6.7, 5.8, 7.0, and 6.6%, p-value=0.906).

In the multivariate analysis, no association was found between pet ownership and emotional, conduct, hyperactivity or peer problems. A borderline association (p-value= 0.077) was observed for prosocial behaviour when comparing never vs always had a pet OR[95%CI]: 0.46[0.19, 1.04].

Conclusions: No association was found for mental health problems, but a positive trend was observed for prosocial behaviour for children who always had a pet. Further analyses are needed to understand this effect.

P19. PILOT EVALUATION OF A PRIMARY SCHOOLYARD TRANSFORMATION PROGRAM (“TRANSFORMEM ELS PATIS”) IN BARCELONA

Xavier Continente^{1,2,3}, Jesús Periañez⁴, Gemma Drou^{5,6}, Marta Sanz-Mas^{2,4}, Albert Espelt^{1,6}, Emma Cortès⁷, Maria José López^{1,2,3,4}

¹ CIBER de Epidemiología y Salud Pública, CIBERESP

² Agència de Salut Pública de Barcelona

³ Institut de Recerca Sant Pau (IR SANT PAU)

⁴ Departament de Ciències Experimentals i de la Salut, Universitat Pompeu Fabra

⁵ Departamento de Epidemiología y Metodología de las Ciencias Sociales y de la Salud, Universitat de Vic- Universitat Central de Catalunya (UVic-UCC)

⁶ Research Group in Epidemiology and Public Health in the Digital Health context (Epi4health). Departament de Psicobiologia i Metodologia de les Ciències de la Salut. Universitat Autònoma de Barcelona

⁷ Institut Infància i Adolescència de Barcelona – Institut Metròpoli

Background: The “Transformem els patis” program aims at transforming the schoolyard of primary schools in Barcelona to create more naturalized play areas and promote egalitarian social relationships through the diversification of play.

Objectives: To evaluate the impact of the program on the use of the playground, social interaction, and diversity of play, with a gender perspective.

Methods: This is a cross-sectional evaluation study with a comparison group (CG). We selected a sample of 8 public primary schools in Barcelona: 4 transformed schools (intervention group, IG) and 4 non-transformed schools (CG). In November-December 2021, non-participant observations were performed in all schoolyards. We collected data through an observational recording sheet, which included environmental variables, sex, age, physical activity (PA), type of play and interaction and relationships among students. The observational unit was groups of children playing together. We conducted a descriptive analysis for all variables.

Results: 162 groups of schoolchildren were observed in the IG and 203 in the CG. The transformed schoolyards had more natural elements, play structures, places to sit and non-cemented flooring. There were no differences in characteristics of the IG and CG. Overall, 40% of schoolchildren groups were composed of girls, 32% by boys, and 28% were mixed groups. Boys engaged in vigorous PA in a higher proportion than girls, but no differences were found in levels of PA between IG and CG. In the IG, a higher proportion of non-sport active play was observed in both boys (41.3% vs. 21.6%; $p<0.05$) and girls (31.1% vs. 20.9%; $p<0.05$) compared to the CG. In boys, a higher proportion of non-sporting (53.3% vs. 33.2%; $p<0.05$) and imaginative play (13.4% vs. 4.2%; $p<0.05$) was observed in the IG. Also, a higher proportion of girls played with natural elements (6.4% vs. 1.4%; $p<0.05$) and a lower proportion was just watching other students playing (4.5% vs. 11.4%; $p<0.05$) in the IG.

Conclusions: Transformed schoolyards are more naturalized, playable, and equitable, with a greater diversity of elements and play structures.

P20. POLYMORPHISMS WITHIN THE *CDKN2A*, *BCL2* AND *EGFR* GENES INFLUENCE THE RISK OF DEVELOPING CHRONIC LYMPHOCYTIC LEUKEMIA, BUT DO NOT DETERMINE PATIENT SURVIVAL

Antonio José Cabrera-Serrano^{1,2}, José Manuel Sánchez-Maldonado^{1,2}, Yolanda Benavente^{3,4}, Paloma García-Martín⁵, Blanca Espinet^{6,7}, Juan José Rodríguez-Sevilla^{8,9}, Trinidad Dierssen-Sotos^{4,10}, Rafael Marcos-Gragera^{4,11,12}, Miguel Alcoceba¹², Andrés Jerez¹³, Eva Pérez⁵, Anna Puiggros^{8,9}, Víctor Moreno^{3,4}, Delphine Casabonne^{3,4}, Consorcio CRuCIAL^{1,2}, Juan Sainz^{1,2,4,14}

¹ Genomic Oncology Area, GENYO. Centre for Genomics and Oncological Research: Pfizer / University of Granada / Andalusian Regional Government, PTS, Granada, Spain

² Instituto de Investigación Biosanitaria IBs.Granada, Granada, Spain

³ Cancer Epidemiology Research Programme, IDIBELL, L'Hospitalet de Llobregat, Barcelona, Spain

⁴ Consortium for Biomedical Research in Epidemiology and Public Health (CIBERESP), Barcelona, Spain

⁵ Hospital Campus de la Salud, PTS Granada, Granada, Spain

⁶ Molecular Cytogenetics Laboratory, Pathology Department, Hospital del Mar, Barcelona, Spain

⁷ Translational Research on Hematological Neoplasms Group, Cancer Research Program, IMIM, Barcelona, Spain

⁸ Department of Hematology, Hospital del Mar Medical Research Institute (IMIM), Barcelona, Spain

⁹ Group of Applied Clinical Research in Hematology (GRETNHE), Cancer Research Program-IMIM, Barcelona, Spain

¹⁰ Universidad de Cantabria – IDIVAL, Santander, Spain

¹¹ Epidemiology Unit and Girona Cancer Registry, Oncology Coordination Plan, Department of Health, Autonomous Government of Catalonia, Catalan Institute of Oncology, Girona Biomedical Research Institute (IdiBGi), and Universitat de Girona, Girona, Spain

¹² Josep Carreras Leukemia Research Institute, Girona, Spain

¹³ Hematology department, Morales Meseguer University Hospital, Murcia, Spain

¹⁴ Department of Biochemistry and Molecular Biology I, Faculty of Sciences, University of Granada (UGR), Granada, Spain

Background: Chronic lymphocytic leukaemia (CLL) is the most common leukaemia in Western countries, with a very heterogeneous and incurable clinical course. Autophagy is a process linked to CLL onset.

Objectives: The aim of this study was to investigate whether single nucleotide polymorphisms (SNPs) within autophagy-related genes influence the risk of CLL. Furthermore, we evaluated whether selected SNPs had an impact on patient survival (OS) and progression-free survival (PFS).

Methods: We analysed 51,071 SNPs in 234 genes in three large European cohorts (InterLymph, UKBiobank, and FinnGen) and the most interesting findings were validated in the CRuCIAL population (5,518 CLL cases and 650,769 European controls). We also investigated the functional impact of the most promising SNPs using data of the *Human Functional Genomic Project* (HFGP) that test host immune responses.

Results: The overall meta-analysis confirmed, for the first time, the association of the *CDKN2A*_{rs3731204}, *BCL2*_{rs4940571}, *BCL2*_{rs9944895} and *EGFR*_{rs12718945} SNPs with the risk of CLL ($p=7.43\times 10^{-10}$, $p=4.93\times 10^{-5}$, $p=2.72\times 10^{-5}$, and $p=8.89\times 10^{-5}$). We also found that the *CDKN2A*_{rs3731204} SNP was an eQTL for the *CDKN2A* gene in blood ($p=5\times 10^{-7}$). Furthermore, we observed that carriers of the *BCL2*_{rs4940571G} allele had an increased number of FOXP3+Helios+ regulatory T cells and higher serological concentrations of IL10Ra ($p=0.007$, $p=0.008$) whereas had lower concentrations of IFN γ and e-RAGE protein ($p=0.004$, $p=0.001$). Likewise, carriers of the *EGFR*_{rs12718945G} allele had increased numbers of CD8+CD45RA+CD27- and CD8+CD45RO+CD27- memory effector cells ($p=0.002$, $p=0.005$) and lower levels of IL6 after stimulation of PBMCs with CpG ($p=0.001$). OS and PFS analyses showed that none of the selected SNPs associated with patient survival.

Conclusions: This study confirms that variants within the *CDKN2A*, *BCL2* and *EGFR* loci influence the risk of CLL, but do not determine patient survival. Functional results shed some light on the possible molecular mechanisms underlying the genetic associations.

P21. PRENATAL AND PERINATAL DETERMINANTS OF GUT MICROBIOTA α -DIVERSITY IN THREE ADOLESCENT COHORTS

Raul Beneyto¹, Blanca Sarzo^{2,3}, M. Pilar Francino^{1,4}, Nuria Jiménez-Hernández^{1,4}, Jorge Vallejo-Ortega¹, Mariona Bustamante^{4,5,6,7}, Léa Maitre^{4,5,6}, Amaia Irizar^{4,8,9}, Ziortza Barroeta^{8,9}, Sabrina Llop^{1,4,10}, Maria Jose Lopez-Espinosa^{1,4,10,11}

¹Foundation for the Promotion of Health and Biomedical Research in the Valencian Region, FISABIO Public Health, Valencia, Spain

²Cavanilles Institute of Biodiversity and Evolutionary Biology, University of Valencia, Valencia, Spain

³Department of Statistics and Operational Research, School of Mathematics, University of Edinburgh, Edinburgh, United Kingdom

⁴Spanish Consortium for Research on Epidemiology and Public Health (CIBERESP), Madrid, Spain

⁵Barcelona Institute for Global Health (ISGlobal), Barcelona, Spain

⁶Universitat Pompeu Fabra (UPF), Barcelona, Spain

⁷Bioinformatics and Genomics Program, Center for Genomic Regulation (CRG)

⁸Biodonostia Health Research Institute, Environmental Epidemiology and Child Development Group, Donostia-San Sebastian, Spain

⁹Department of Preventive Medicine and Public Health, University of the Basque Country (UPV-EHU), San Sebastian, Spain

¹⁰Epidemiology and Environmental Health Joint Research Unit, FISABIO-University Jaume I-University of Valencia, Valencia, Spain

¹¹Faculty of Nursing and Chiropody, University of Valencia, Valencia, Spain

Background: Gut microbiota has emerged as a key component of human health. It can be shaped by different factors, but literature in adolescents is scarce.

Objectives: To study the possible pre and perinatal determinants of gut microbiota α -diversity in adolescents of the INMA-Valencia, Gipuzkoa, and Sabadell cohorts.

Methods: Cross-sectional study of 14-16 year-old adolescents (n=398). A fecal sample per participant was taken and analyzed using 16S rRNA gene amplicon sequencing. Two α -diversity indexes (genus level) were created: the CHAO1 index, which measures richness (i.e. number of microorganisms in the fecal sample), and the Shannon index, which measures evenness considering richness (i.e. uniformity of the proportions of the different genera in the sample). Information on sociodemographic variables, lifestyle, anthropometry, delivery type, and diet was collected during pregnancy and at birth. Stool type was classified by the Bristol Scale. The analysis was performed by univariate linear regression analyses to study which covariates could be associated with each index ($p < 0.2$), and then multivariate stepwise analyses with the covariates previously selected.

Results: Adolescents from Sabadell had lower CHAO1 indexes ($\beta = -12.377, p < 0.001$) and those from Gipuzkoa had lower CHAO1 ($\beta = -8.905, p < 0.001$) and higher Shannon ($\beta = 0.110, p = 0.028$) indexes compared to Valencian participants. Diversity was negatively associated to softer stool types (CHAO1: Normal type $\beta = -5.667, p = 0.001$; Soft type $\beta = -15.951, p < 0.001$; Shannon: Normal type $\beta = -0.065, p = 0.055$; Soft type $\beta = -0.174, p = 0.015$) and higher frequency of bowel movements (CHAO1: $>1/\text{day}$ $\beta = -4.590, p = 0.051$; Shannon: $>1/\text{day}$ $\beta = -0.154, p < 0.001$). Vegetable intake (grams) in pregnancy (CHAO1: $\beta = 0.019, p = 0.029$; Shannon: $\beta = 0.0005, p = 0.006$), pre-pregnancy smoking (CHAO1: $\beta = 2.983, p = 0.090$) and social class (Shannon: Middle class $\beta = -0.083, p = 0.032$; Lower class $\beta = -0.040, p = 0.297$) were also related to diversity.

Conclusions: Stool variables, geographical localization, and vegetable intake during pregnancy were determinants of gut microbiota α -diversity in adolescence. Social class and pre-pregnancy smoking could also be important.

P22. PRENATAL EXPOSURE TO CADMIUM AND CHILDREN'S COGNITIVE DEVELOPMENT: FINDINGS FROM THE SPANISH INMA BIRTH COHORT

Sabrina Llop^{1,2}, Raquel Soler-Blasco^{1,2,3}, Manuel Lozano^{2,4}, Gabriel Riutort-Mayol⁵, Mario Murcia^{1,2,6}, Jesús Ibarluzea^{1,7,8,9}, Loreto Santa Marina^{1,7,8,9}, Maribel Casas^{1,10,11}, Jordi Julvez^{1,10,12}, Llúcia Gonzalez^{1,2}, Ferran Ballester^{1,2,3}, Florencia Harari¹³

¹CIBER de Epidemiología y Salud Pública (CIBERESP)

²Epidemiology and Environmental Health Joint Research Unit, FISABIO-Universitat Jaume I-Universitat de València (UV)

³Departament d'Infermeria (UV)

⁴Faculty of Pharmacy (UV)

⁵ FISABIO-SP

⁶Conselleria de Sanitat (GV)

⁷BioGipuzkoa Health Research Institute, Group of Environmental Epidemiology and Child Development

⁸Ministry of Health of the Basque Government

⁹Univesity of the Basque Country

¹⁰ISGlobal, Barcelona

¹¹Universitat Pompeu Fabra (UPF)

¹²Clinical and Epidemiological Neuroscience Group (NeuroÈpia), Institut d'Investigació Sanitària Pere Virgili (IISPV)

¹³Occupational and Environmental Medicine, School of Public Health and Community Medicine, Sahlgrenska Academy, University of Gothenburg, Sweden

Background: Several studies have assessed the neurotoxic effects of cadmium (Cd) in children but with contradictory results.

Objectives: We aimed at examining whether urinary Cd concentrations (U-Cd) during pregnancy were associated with children's cognitive development. We also explored whether associations were affected by maternal zinc (Zn) and ferritin concentrations.

Methods: The study subjects were mother-child pairs participating in the INMA Spanish cohort (Valencia, Sabadell and Gipuzkoa, born 2004-2008). U-Cd was measured at first and third trimester of pregnancy. Neuropsychological development was assessed using Bayley (at 14 months of age, n=1457) and McCarthy scales (at 4-5 years of age, n=1114). Data on covariates was obtained through questionnaires. Maternal ferritin and Zn concentrations were measured in blood and urine, respectively. Multivariate linear regression models were used to assess the association between prenatal U-Cd and the children's neurodevelopmental scores. Effect modification by nutrients was assessed using interaction terms.

Results: The mean (standard deviation) of U-Cd was 0.37 (0.34) µg/g of creatinine. We did not observe any statistically significant association between maternal U-Cd and the children's scores. The association between U-Cd and the scores for some of the scales at 4-5 years old was negative for children whose mothers had higher urinary Zn and lower blood ferritin.

Conclusions: We did not observe any significant association between prenatal Cd and children's neuropsychological development. Maternal levels of Zn and ferritin were observed to modify the relation between Cd and the scores. Due to the potential adverse effects of a prenatal Cd exposure on children's cognitive development, more longitudinal studies are warranted.

P23. PREVIOUS SARS-COV-2 INFECTION AS A PROTECTIVE FACTOR AGAINST NEW INFECTIONS IN HOUSEHOLD CONTACTS OF COVID-19 CASES IN CATALONIA AND NAVARRA

Pere Godoy^{1,2}, Manuel García-Cenoz^{2,3}, Ignasi Parron⁴, Iván Martínez-Baz^{2,3}, Diana Toledo^{2,7}, Joaquim Ferras⁴, Inma Sanz⁴, Mònica Carol⁴, Nuria Bes⁴, Alba Vilata⁴, Montserrat Guillaumes⁵, Pere Plans⁴, Miquel Alsedà^{1,4}, Sofia Godoy⁶, Núria Follia⁴, Victor Guadalupe⁴, Pilar Ciruela^{2,4}, David Palma^{2,5}, Carme Miret^{1,4}, Jessica Pardos⁴, Maria-Rosa Sala⁴, Cristina Rius^{2,5}, Carmen Muñoz-Almagro^{2,8}, Jesús Castilla^{2,3}, Ángela Domínguez^{2,7}, Grupo de trabajo “Factores asociados a la transmisión de SARS-CoV-2 en los convivientes de Cataluña y Navarra y efectividad de las vacunas y de las medidas no farmacológicas para reducir la transmisión” (PI21/01883 y ESP22PI01)

¹Institut de Recerca Biomèdica (IRB Lleida). Lleida

²CIBER de Epidemiologia y Salud Pública. Madrid

³Instituto de Salud Pública de Navarra - IdISNA. Pamplona

⁴Agència de Salut Pública de Catalunya. Barcelona

⁵Agència de Salut Pública de Barcelona. Barcelona

⁶Institut Català de la Salut (ICS). Lleida

⁷Departament de Medicina, Universitat de Barcelona. Barcelona

⁸Laboratorio de Microbiología, Hospital Sant Joan de Deu. Barcelona

Background: Previous SARS-CoV-2 infection along with vaccination and the use of a mask in COVID-19 household contacts might reduce the risk of new infections but this effect may vary in the period of Omicron circulation.

Objectives: To evaluate previous SARS-CoV-2 infection as a protective factor against new infections in household contacts of COVID-19 cases in Catalonia and Navarre.

Methods: We carried out a prospective epidemiological study (May 2022-November 2023) on the new infections of SARS-CoV-2 among household contacts of primary COVID-19 cases in Catalonia and Navarre (Spain). An epidemiological survey was completed for each index case and contact, who were followed for 7 days to determine the occurrence of secondary cases. To be included in the study, the case had to meet the criteria for a confirmed case and have household contacts that could be identified. The contacts underwent a rapid Ag test on day zero and the negatives a PCR-RT test in saliva on day seven. The effectiveness of previous infection and vaccination of contact to prevent new infection was calculated according to the formula: Effectiveness = (1-OR) x 100.

Results: For the 181 index cases, 314 contacts were registered, of which 250 agreed to participate, 65.2% (163/250) were women and they had a mean age of 52.0 years (SD 20.6). The prevalence infection in household contacts was 41.2% (103/250) and was lower in people with no previous SARS-CoV-2 infection (aOR=0.4; 95%CI 0.2-0.8), and was higher in people >65 years old (OR=5.7; 95%CI 1.8-18.3) and smokers (OR=2.1; 95%CI 1.1-4.1). Previous infection had an effectiveness of 60% (CI95% 20.0-80.0) to avoid new infections. Being vaccinated with at least one dose of vaccine (aOR=0.4; 95% CI 0.1-4.1) and using a mask (aOR=0.9; 95% CI 0.5-1.7) did not show effectiveness statistically significant.

Conclusions: The household transmission rate of COVID-19 is high in the period of Omicron circulation. Previous infection reduces the risk of new infections but people >65 years old and smokers are at greater risk of infection by SARS-CoV-2.

P24. REGULAR PHYSICAL ACTIVITY LINKED TO A LOWER PREVALENCE OF PROBLEMATIC USE OF THE INTERNET IN ADOLESCENCE

Inés Nicolao-Usechi^{1,2}, Marc Olivella-Cirici^{1,2}, Esther Sánchez-Ledesma^{2,3}, Gemma Serral^{2,3,4}, Catrina Clotas², Xavier Contente^{2,3,4}, Gloria Perez^{1,2,3,4}

¹ Agència Salut Pública de Barcelona, Spain

² University Pompeu Fabra, BarcelonaSpain

³ Institut d'Investigació Biomèdica (IIB Sant Pau), Barcelona, Spain

⁴ Centro de Investigación Biomédica en Red Epidemiología y Salud Pública (CIBERESP), Madrid, Spain

Background: The problematic use of the internet (PUI) is a recognised public health concern, particularly in adolescents. The practice of regular physical activity (RPA) has been associated with a lower prevalence of PUI in this age group, but evidence is inconsistent and scarce.

Objectives: This study aimed to estimate the association and potential protective role of engaging in RPA for PUI, among 13 to 19-year-olds attending school in the city of Barcelona, Spain, in 2021. Furthermore, to enhance understanding of PUI, we examined sociodemographic, health and context-related factors associated with PUI among these adolescents.

Methods: We performed a cross-sectional study based on data from the 2021 representative Survey of Risk Factors for Secondary School Students (FRESC) of the Barcelona Public Health Agency. The study sample consisted of 3256 students aged 13-19 years attending school in the city of Barcelona in 2021. The main explanatory variable was RPA measured with a validated scale of physical activity frequency. Poisson regression with robust error variance estimated crude and adjusted prevalence ratios (adjPR) with their 95% confidence intervals (95% CI). The study was stratified by age and sex.

Results: RPA was less common in girls than boys (82.5% vs 90.5%, p-value= <0.001). The prevalence of PUI was lower in active/moderately active girls and boys older than 16 years (adjPR 0.62, 95% CI 0.39-0.97) and (adjPR 0.51, 95% CI 0.35-0.74), respectively. The prevalence of PUI was also lower in girls younger than 16 years who practised sports at least twice a week (adjPR 0.53, 95% CI 0.31-0.88).

Conclusions: RPA may act as protective factor against PUI in adolescence, especially among girls; therefore, physical activity promotion programmes that include a gender perspective may be crucial to tackle PUI in this age group.

P25. RETROSPECTIVE MICROBIOLOGICAL AND GENOMIC ANALYSIS OF ACUTE HEPATITIS OF UNKNOWN AETIOLOGY IN CHILDREN IN SPAIN.

Ana Avellón^{1,2}, Milagros Muñoz¹, Juan Emilio Echevarría^{1,2}, María Dolores Fernández^{1,2}, David Tarrago^{1,2}, Francisco Pozo^{1,2}, Lucía Morago¹, Nazaret Sánchez¹, Raquel Escudero¹, Juan Camacho¹, Saray Varona¹, Jorge Martínez¹, Carmen Varela³, María Guerrero³, Marina Peñuelas³, Desiré Henares⁴, Carmen Muñoz⁴, Mariona F de Sevilla⁴, Iolanda Jordán⁴, Pedro Brotons⁴, Juan J García⁴, José Juan García⁵, María Jesús Monte⁵, Elisa Herráez⁵, Luis Bujanda⁶, Koldo García⁶, Mauro D'Amato⁶, Victoria Hernando⁷

1 National Center of Microbiology (ISCIII). Majadahonda. Madrid

2 CIBERESP Group 13

3 National Center of Epidemiology (ISCIII). Madrid. CIBERESP Group 32

4 Hospital San Joan de Deu CIBERESP Group 57

5 Universidad de Salamanca CIBEREHD Group CB06/04/0023

6 Hospital de Donostia CIBEREHD Group CB06/04/1081

7 National Center of Epidemiology (ISCIII). Madrid. CIBERINFECT Group CB21/13/00091

Background: On 2022 5th April, United Kingdom notified to WHO an alert of severe acute hepatitis in children. Since then to the end of 2022 Spain has detected 61 cases with 3 deaths. Microbiological analysis, complementary to that performed at the hospitals, has been performed at the National Centre for Microbiology (NCM) in 42 cases.

Objectives: The aim of this report is to describe the microbiological and genomic analysis performed at the NCM and at the University of Salamanca.

Methods: Samples (serum, total blood, faeces, urine and nasopharyngeal swab) were studied through PCRs of: herpes simplex viruses, virus varicella-zoster, cytomegalovirus, Epstein-Barr virus, herpes 6, 7 and 8, enterovirus, parvovirus B19, adenovirus, hepatitis A and E, norovirus and leptospira. Massive sequencing was performed in most of the cases with a metagenomic approach. Total blood was used for HLA analysis and ACOX2 mutation.

Results: Among serum and total blood samples, 11/42 (26.2%) cases were positive to herpes and 3/42 (7.1%) positive to enterovirus. Adenovirus were detected in 18/42 (42.8%) of the cases, obtaining 2 complete genomes. Adeno-associated viruses were detected by metagenomics in 8/42 (19.0%) cases. Some other viruses were detected as: CoVNL63, Coronavirus HKU1, Sapporovirus, Respirovirus and Parechovirus. Preliminary results on HLA and ACOX2 analysis will be presented.

Conclusions: Obtained results parallels those reported in other European countries in where adenoviruses and adeno-associated viruses were the most common viruses detected. However, the aetiology of the hepatitis cases remains unclear, as more case and control studies are needed to define the exact role of each microorganism.

P26. WHAT PEOPLE THINK CAUSES CANCER: RESULTS FROM THE 2022 CANCER AWARENESS SURVEY IN SPAIN

Sergio Galicia¹, Dafina Petrova^{2,3,4}, Lucas Aljarilla¹, Maria del Mar Rueda¹, Miguel Rodríguez Barranco^{2,3,4}, Andrés Catena¹, Nuria Rico¹, Marina Pollán^{2,5}, Laura Costas^{2,6}, Maria José Sánchez^{2,3,4}

¹ Universidad de Granada, Granada, Spain

² CIBER de Epidemiología y Salud Pública (CIBERESP)

³ Instituto de Investigación Biosanitaria ibs.GRANADA, Granada, Spain

⁴ Escuela Andaluza de Salud Pública, Granada, Spain

⁵ Centro Nacional de Epidemiología, Instituto de Salud Carlos III, Madrid, Spain

⁶ Instituto Catalán de Oncología, IDIBELL, Hospitalet de Llobregat, Spain

Background: The European Code Against Cancer informs people about factors affecting their cancer risk. Its dissemination is a priority in Europe and in Spain. However, it is not clear to what extent the public is aware of the risk factors included in the Code.

Objectives: To investigate awareness of established risk factors and beliefs in mythical causes of cancer among the general public.

Methods: The International Measure of Awareness and Beliefs about Cancer and the Cancer Awareness Measure-Mythical Causes were adapted to Spanish and administered in an online survey aimed at the general population residing in Spain. Participants indicated whether they believed that each of 13 established risk factors and 12 mythical causes increased the risk of developing cancer. The number of endorsed risk factors and mythical causes was examined as a function of age, sex, and education.

Results: 1029 participants completed the survey (36% >55 years old; 67% female; 64% with a university degree). Participants were least likely to identify low fruit and vegetable consumption (32%), low physical activity (46%), HPV infection (56%), red and processed meat (60%), and alcohol consumption (61%) as established cancer risk factors. The most frequently endorsed mythical causes were stress (54%), food additives (49%), genetically-modified foods (49%), artificial sweeteners (49%), plastic bottles (39%), and power lines (38%). A higher education level was associated with more accurate knowledge overall, and women were more likely to endorse mythical causes than men. Adults aged 25-44 recognized the highest number of risk factors but also endorsed the highest number of mythical causes.

Conclusions: A large proportion of the public is not aware of multiple lifestyle factors included in the European Code against Cancer. This co-exists with beliefs in mythical causes of cancer that can interfere with prevention efforts.

