

AREA 5 - Urology and Experimental Surgery

Women and Perinatal Health Research Group



Coordinator
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Members
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Main Lines of Research

- Prediction and prevention of complications arising from placental insufficiency, intrauterine growth restriction / preeclampsia (IUGR / PE).
- Placental insufficiency and maternal cardiovascular risk later in life.
- Role of the oxygen transport deficit in the placental insufficiency.
- Development of predictive methods based on the integration of pre and postnatal factors for the detection of abnormal neurodevelopment in congenital heart diseases.
- Toxics and air pollution effects on pregnancy and fetal programming.
- Management of pelvic floor dysfunction: chronic pelvic pain, urinary incontinence and pelvic organ prolapse.

Scientific Challenges

- To study novel placental biomarkers in the diagnosis and prognosis of preeclampsia (PE) and intrauterine growth restriction (IUGR) in order to generate future hypothesis for target prevention and therapeutic interventions in these pathologies.
- To determine the usefulness of novel placental biomarkers (sFlt-1/PlGF ratio) in the diagnosis and prognosis of preeclampsia (PE) in order to change policies and improve maternal and neonatal health.
- To study novel maternal cardiovascular risk biomarkers after placental insufficiency and to explore potential preventive strategies in order to identify mother at risk for cardiovascular disease later in life.
- To study the role of placental insufficiency and hypoxia in congenital heart disease in order to gain insights into the relationships between hypoxia-dependent placental morphogenesis, placental function and effects on oxygen metabolism in the fetus.
- To develop biomarkers in fetal and neonatal life that help to predict postnatal neurological risk in congenital heart diseases.
- To evaluate the impact of maternal exposure to traffic-related air pollution on fetal development in order to generate evidence base to support regulation, implementation of finely-targeted interventions, and in time, the inclusion of this impact in the next iteration of the global burden of the diseases (GBD) attributable to ambient air pollution.

Collaborations

Collaborations with other IIB Sant Pau Groups

- Active collaboration with the Gynaecology and Obstetrics Service: Obedulia Alejos, Antoni Fernández, Laura Gomila, M. del Carmen Medina, Anna Olivella, Juan Parra, Irene Ribera, Cristina Trilla, M. Julia Zanini, Marta Però and Carla Domínguez.
- Active collaboration with Puigvert Foundation: Carlos Dossouto, Susana Peón and M. Jesús Saiz.
- Breast Cancer (Dra. Bárbara García-Valdecasas)
- Genetic Research (Dr. Jordi Surrallés)
- Oncogenesis and Antitumour Drugs (Dra. Virtudes Céspedes)
- Reproductive Health (Dr. Joaquim Calaf)
- Anesthesiology (Dra. M. Victoria Moral)
- General and Digestive Surgery (Dr. Antonio Moral)
- Endocrinology, Diabetes and Nutrition (Dra. Rosa Corcoy)

- Paediatrics (Dr. Eduard Carreras)
- Clinical Epidemiology and Healthcare Services (Dr. Xavier Bonfill)
- Clinical Biochemistry Service (Dr. Francisco Blanco)
- Image Diagnostic Service, Neuroradiology Section (Dra. Beatriz Gómez-Ansón)

External Collaborations

International Collaborations

- Project: Role of Placental Insufficiency and Hypoxia in Congenital Heart Defects. Principal investigator: Steven A. Fisher, M.D.; Professor of Medicine and Physiology S-012a HSF II, 20 Penn St. Univ of Maryland School of Medicine (Baltimore MD 212) Collaborator: Elisa Llurba.
- Project: Accuracy of clinical characteristics, biochemical and ultrasound markers in the prediction of preeclampsia: an Individual Pa-

tient Data (IPD) Meta-analysis. Principal Investigator: Shakila Thangaratnam, PhD; Professor in maternal and perinatal health at Queen Mary University of London, of Mile End Road, London. Collaborator: Elisa Llurba.

National Collaborations

- Centro de Investigación Biomédica en RED Enfermedades Raras (CIBERER). CB06/07/0027; IP: Dr. Eduard Gratacós.
- Maternal and Child Health and Development Research Network (SAMID Network). RD16/0022/0014; IP: Dra. M. Dolores Gómez Roig.
- Project: Traffic-related air pollution and birth weight: the roles of noise, placental function, green space, physical activity, and socioeconomic status (FRONTIER). Principal Investigator: Dadvand, Payam; Assistant Research Professor, Barcelona Institute for Global Health (ISGlobal) (Former CREAL); Co-PI: Jordi Sunyer, Barcelona Institute for Global Health (ISGlobal). Funding: The Health Effects Institute (HEI), 17-1 Assessing Adverse Health Effects of Exposure to Traffic-Related Air Pollution, Noise, and Their Interactions With Socio-Economic Status. Duration: 01/05/2018 - 31/10/2022. Collaborators: Elisa Llurba, Carmen Garrido, Víctor Rodríguez-Sureda and Olga Sánchez.

Active Grants

- Elisa Llurba Olivé. Incorporación del ratio sFlt1/PlGF en el diagnóstico y clasificación de preeclampsia: Ensayo clínico randomizado (EuroPE estudio). PI16/00375. Instituto de Salud Carlos III. Duration: 2017-2019. 92,500 €.
- Elisa Llurba Olivé. Red de salud materno-infantil y del desarrollo. RD16/0022/0015. Instituto de Salud Carlos III. Duration: 2017-2021. 178,530 €.

Grants Awarded in 2018

- Elisa Llurba Olivé. Women and Perinatal Health Research Group. 2017 SGR 1267. Agència de Gestió d'Ajuts Universitaris i de Recerca. Duration: 2017-2020. 10,000 €.

Doctoral Theses

- Enrique Pazos Coronado. Impacto de la realidad virtual en el dolor asociado a la terapia manual dentro de un programa multimodal para

► Project: Pre-natal exposure to urban AIR pollution and pre- and post-Natal Brain development (AIR-NB). Principal Investigator: Jordi Sunyer, Barcelona Institute for Global Health (ISGlobal). Funding: European Research Council (ERC), Horizon 2020, ERC-2017-ADG. Duration: 01/01/2018 - 31/12/2022. Collaborators: Elisa Llurba, Carmen Garrido, Víctor Rodríguez-Sureda and Olga Sánchez.

- Maternal and Infant Health and Development Network (SAMID Network). RD16/0022/0015. Principal Investigator: Elisa Llurba. Collaborators: Olga Sánchez, Ana Polo.
- Project: Breast cancer during pregnancy. Neurologic and cardiologic outcomes after chemotherapy exposition during fetal period. Principal Investigator: Dr. Octavi Córdoba (Hospital Universitari Vall d'Hebron, Barcelona). Collaborator: Olga Sánchez.
- Project: Angiogenic factors during pregnancy and cardiovascular risk in the medium to long term in patients with preeclampsia. Clinical and experimental approach. Principal Investigator: Dr. Lluís Cabero Rioura (Hospital Universitari Vall d'Hebron, Barcelona). Collaborator: Olga Sánchez.
- Banc de Sang i Teixits (Blood and Tissue Bank). Collaborator: Elisa Llurba.

► Josep Oriol Porta Roda. Estudio de las propiedades biológicas de una matriz dérmica de origen humano para su aplicación en cirugía de corrección del prolapso de órganos pélvicos e incontinencia urinaria femenina. CONVENI BST 2017-3. Banc de Sang i Teixits. Duration: 2017-2020. 136,904 €.

Note: Total amount granted to PI. It does not include indirect costs.

Note: Total amount granted to PI. It does not include indirect costs.

el tratamiento de la vulvodinia. Universitat Autònoma de Barcelona. Director: Josep Oriol Porta Roda. Date of defense: 01/06/2018.

Scientific Production

Total Impact Factor: 27.6324 - Mean Impact Factor: 2.512

Alijotas-Reig J, Esteve-Valverde E, Ferrer-Oliveras R, Llurba E, Ruffatti A, Tincani A, Lefkou E, Bertero M.A.T., Espinosa G, de Carolis S, Rovene-Querini P, Lundelin K, Picardo E, Mekinian A. Comparative study between obstetric antiphospholipid syndrome and obstetric morbidity related with antiphospholipid antibodies Estudio comparativo entre síndrome antifosfolipídico obstétrico y morbilidad obstétrica relacionada con anticuerpos antifosfolípido (2018) MED CLIN-BARCELONA, 151 (6), 215-222. IF: 1.1680

Esteve-Valverde E, Ferrer-Oliveras R, Gil-Aliberas N, Baralides-Farre A, Llurba E, Alijotas-Reig J, Pravastatin for Preventing and Treating Preeclampsia: A Systematic Review (2018) OBSTET GYNECOL SURV, 73(1), 40-55. IF: 2.0140

Franco-Jarava C, Wang H, Martin-Nalda A, Alvarez SD, García-Prat M, Bodet D, García-Patos V, Pajá A, Rudilla F, Rodríguez-Sureda V, García-Latorre L, Aleksentjevich I, Colobran R, Soler-Palacin P. TNFAIP3 haploinsufficiency is the cause of autoinflammatory manifestations in a patient with a deletion of 13Mb on chromosome 6. CLIN IMMUNOL. 2018 Jun;191:44-51. doi: 10.1016/j.clim.2018.03.009. Epub 2018 Mar 20. PMID: 29572183. IF: 4.0370

Gascón A, Goya M, Mendoza M, García A, Higuera T, Calero I, Avilés M, Sánchez MA, Llurba E, Cabero L, Carreras E. Intraobserver and interobserver variability in first-trimester transvaginal ultrasound cervical length. J MATERN FETAL NEONATAL MED. 2018 Sep 9;1-6. PMID: 30198351. IF: 1.4674

Gil-Ibañez B, Regueiro P, Llurba E, Fariñas-Madrid I, García A, Diaz-Fejoo B. Challenges in the management of neuroendocrine cervical cancer during pregnancy: A case report. MOL CLIN ONCOL. 2018 Nov;9(5):519-522. PMID: 30402233. IF: -

Herraiz I, Llurba E, Verlohren S, Galindo A, Bartha JL, De La Calle M, Delgado JL, De Paco C, Escudero AJ, Moreno F, García-Hernández JA, Romero-Requejo A, Marcos-Puig B, Perales A, Mendoza M. Update on the Diagnosis and Prognosis of Preeclampsia with the Aid of the sFlt-1/PlGF Ratio in Singleton Pregnancies (2018) FETAL DIAGN THER, 43 (2), 81-89. IF: 1.8130

Llurba Olivé E, Xiao E, Natale DR, Fisher SA. Oxygen and lack of oxygen in fetal and placental development, feto-placental coupling, and congenital heart defects. BIRTH DEFECTS RES. 2018 Dec 1;110(20): 1517-1530. PMID: 30576091. IF: -

Mazarico E, Llorba E, Cabero L, Sanchez O, Valls A, Martín-Ancel A, Cardenas D, Gomez Roig M.D. Associations between neural injury markers of intrauterine growth-restricted infants and neurodevelopment at 2 years of age (2018) *J MATERN-FETAL NEO M*, 1-7. **IF: 1.4930**

Pauls C, Dantas AP, Miranda J, Croveto F, Eixarch E, Rodríguez-Sureda V, Dominguez C, Casu G, Rovira C, Nadal A, Crispi F, Gratacos E. Premature placental aging in term small-for-gestational-age and fetal-growth-restricted fetuses. *ULTRASOUND OBSTET GYNECOL*. 2018 Aug 19. doi: 10.1002/uog.20103.PMID: 30125412. **IF: 4.2540**

Other Publications

- I Herráiz, E Llorba, S Verlohren, A Galindo, en nombre del Grupo español para el estudio de los marcadores angiogénicos en la preeclampsia. "Actualización del diagnóstico y el pronóstico de la preeclampsia

Books or Chapters with ISBN

- Ana Polo Ramos. Hormona antimuleriana. Fecundación In Vitro: claves para mejorar nuestra estrategia terapéutica. Ed. Glosa ISBN: 978-84-7429-704-1. 2018 p 31-39.

Diffusion Activities

Congresses

National Congresses

10è Congrés Català d'Obstetrícia i Ginecologia. Societat Catalana d'Obstetrícia. Barcelona, 7-9th November 2018:

- Josep Oriol Porta Roda. Meeting organization.
- L. Balcells Eichenberger; A. Fernandez Oliva; MJ. Zanini Mangialardi; I. Ribera Casellas; C. Garrido Gimenez; E. Llorba Olivé. Preeclampsia en gestació gemel·lar biconial-biamniòtica amb segon fetus afecte de RCIU tipus III: evolució dels factors angiogènics postreducció selectiva del fetus RCIU.
- A. Luzzaraga Aznar; MJ. Zanini; A. Fernandez Oliva; I. Ribera Casellas; C. Garrido Gimenez; E. Llorba Olivé. Ruptura hepàtica en el síndrome de Hellp: cas clínic i revisió de la literatura.
- M. Bailón Queiruga; C. Garrido Giménez; A. Longo; MC. Medina Mallé; A. Olivella Garcia; I. Ribera Casellas; A. Fernandez Oliva; E. Llorba Olivé. Hipernatrèmia associada a trastorns hipertensius de l'embaràs.
- L. Blanch; MJ. Zanini; A. Fernandez Oliva; E. Llorba; C. Garrido; I. Ribera. Corioamniòntis subclínica per Clostridium perfringens: cas clínic i revisió de la literatura.
- Fabra P, Medina MC, Simó M, Armengol J, Ramos A, Pérez R, Llorba E, Pujol M. Resultats obstètrics a la assistència integral del part de nates.

International Congresses

- Garrido-Gimenez C, Capote-Lopez S, Cabrera S, Goya-Canino, M, Melnychuk, T, Centeno C, Higuera T, Cabero-Roura L, Gil-Moreno A, Carreras-Moratonas E. Adverse obstetric outcomes associated with cervical loop electrosurgical excisional procedure and short cervix. 17th World Congress in Fetal Medicine. Athens (Greece): 24-28th June 2018.
- Elisa Llorba. Tratamiento del CIR: es una realidad. 68 Congreso Mexicano de Obstetrícia y Ginecología. Mazatlán (Mexico): 11-13th November 2018. Oral Presentation.
- Elisa Llorba. Gestación gemelar biconial: complicaciones maternas y fetales. 68 Congreso Mexicano de Obstetrícia y Ginecología. Mazatlán (Mexico): 11-13th November 2018. Oral Presentation.
- Elisa Llorba. Managing preeclampsia with angiogenic factors. 4th Annual International Conference of Egyptian Fetal Medicine Foundation. El Cairo (Egypt): 8-9th February 2018. Oral Presentation.

Pratcorona L, Goya M, Merced C, Rodo C, Llorba E, Higuera T, Cabero L, Carreras E, Arevalo S, Aviles M, Calero I, Casellas M, Folch M, Gascon A, Mendoza M, Sanchez MA, Suy A. Cervical pessary to reduce preterm birth <34 weeks of gestation after an episode of preterm labor and a short cervix: a randomized controlled trial (2018) *AM J OBSTET GYNECOL*, 219 (1), 99.e1-99.e16. **IF: 5.7320**

Sanchez O, Ruiz-Romero A, Dominguez C, Ferrer Q, Ribera I, Rodríguez-Sureda V, Alijotas J, Arevalo S, Carreras E, Cabero L, Llorba E. Brain angiogenic gene expression in fetuses with congenital heart disease (2018) *ULTRASOUND OBST GYN*, 52 (6), 734-738. **IF: 5.6540**

con la ayuda del cociente sFt1/PIGF en embarazos únicos". Revista PROGRESOS.

- Elisa Llorba. CIR precoz. 30 Congreso Nacional de la Sección de Ecografía Obstétrica-Ginecológica de la SEGO. Toledo (Spain): 4-6th October 2018. Oral Presentation.

- Elisa Llorba. Aplicación Clínica del ratio sFt1/PIGF. 26º Congreso de Medicina Perinatal de la SEGO. Murcia (Spain): 24-26th May 2018. Oral Presentation.

Meetings/Seminars

- Ana Polo Ramos. Meeting organization: Jornada Entre Mares. Recinte Modernista de Sant Pau. Barcelona. 21th April 2018.
- Ana Polo Ramos. Meeting organization and co-direction: Jornada d'actualització del cribatge de malalties recessives en Reproducció Assistida. 25th May 2018.
- Ana Polo Ramos. Meeting organization: Programa Cuida't with She Oak Association (4 conferences):
 - Relaxació i fertilitat. 19th September 2018.
 - Consells pràctics durant els tractaments. 17th October 2018.
 - Nutrició i fertilitat. Programa Cuida't. Amb She Oak. 14th November 2018.
 - Teràpies naturals i reproducció assistida. 12th December 2018.
- Ana Polo Ramos. Workshops organization: Practical clinical case workshops with Ferring. 27th April 2018.
- Elisa Llorba. Caso Clínico. Anticoagulantes para prevenir complicaciones recurrentes del embarazo mediadas por la placenta. VI Simposio de Trombosis, Embarazo y Reproducción, Workshop Dexeus. Barcelona, 9th November 2018. Oral Presentation.
- Elisa Llorba. Sospecha Clínica de Preeclampsia. Symposium sobre manejo clínico de la preeclampsia con factores angiogénicos. Tercera Jornada sobre la utilidad de los marcadores angiogénicos en el manejo de la preeclampsia (Roche). Madrid: 22-23th February 2018. Oral Presentation.
- Ana Polo Ramos. Fallos de Implantación. Donación de ovocitos. Indicaciones y técnica. Caso clínico: DGP-HLA. XVI Jornadas de Residentes (IV). Jerez de la Frontera. 12-13th April 2018. Oral communication.
- Ana Polo Ramos. Mites i realitats de la fertilitat al segle XXI. Nous models de família. Nous horitzons de les tècniques de reproducció assistida. Jornada Entre Mares. Recinte Modernista de Sant Pau. Barcelona. 21th April 2018. Oral communication.

- Ana Polo Ramos. Evolució del cribatge de les malalties recessives, el seu paper en Medicina Reproductiva. Jornada d'actualització del cribatge de malalties recessives en Reproducció Assistida. Fundació Puigvert. Barcelona. 25th May 2018. Oral communication.

- Ana Polo Ramos. Gestación tras múltiples ciclos de FIV y melanoma. Casos clínicos prácticos. Ferring. Barcelona. 27th September 2018. Oral communication.

- Ana Polo Ramos. Tècniques de Reproducció Assistida en el context d'una Malaltia Reumàtica. II Jornada d'Embaràs i Malalties Reumàtiques. Acadèmia de Ciències Mèdiques de Catalunya. 9th October 2018. Oral communication.

- Ana Polo Ramos. Opciones reproductivas en portadoras de mutación en BRCA1 y 2. III Jornada de Cáncer de Mama y Ovario Hereditario. Barcelona. 27th October 2018. Oral communication.

Courses

- Elisa Llorba, director since 2017. Màster Medicina Materno-Fetal. Departament d'Obstetrícia i Ginecologia. Universitat Autònoma de Barcelona.

- Elisa Llorba. Aplicación Clínica del ratio sFt1/PIGF. VI Curs d'actualització en ciències de laboratori clínic. Barcelona, 18th October 2017-20th June 2018.

- Elisa Llorba. Crisis resource management (CRM) en sala de partos. 10th May 2018.

- Elisa Llorba. Materno-fetal Course. BCNatal Hospital Clinic-Sant Joan de Déu. Lloret de Mar, 10th May 2018.

- Carmen Garrido Giménez. Actualitzacions en Obstetrícia i Ginecologia (registre: 09/020107-MD). Hospital de la Santa Creu i Sant Pau. 15th May 2018.

- Carmen Garrido Giménez. Programa d'Obstetrícia i Ginecologia (Study Abroad) - Universitat Autònoma de Barcelona (university students of the Autonomous Popular University of the State of Puebla of Mexico). June 2018.

- Ana Polo Ramos. Dieta y Fertilidad. VIII Edición del Máster Internacional en Reproducción Humana. Campus del H. del Mar. Barcelona, 23th October 2018.

- Elisa Llorba. Anticoagulantes para prevenir complicaciones recurrentes del embarazo mediadas por la placenta. VI Simposio de Trombosis, Embarazo y reproducción, Workshop Dexeus. Barcelona, 9th November 2018.

- Ana Polo Ramos. Caso 8: Amenorrea hipotalàmica funcional. Curso práctico de endocrinología y reproducción humana basado en el caso. Unitat Docent Sant Pau. Barcelona, 15th November 2018.