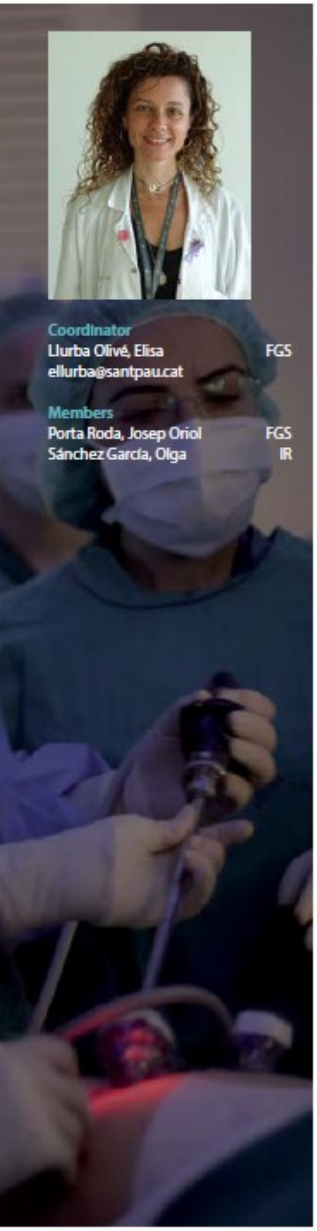
Women and Perinatal Health Research Group



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 / pre-eclampsia (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 hearts diseases.

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 theses 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 polices 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.

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. 92,500.00 €.
- Elisa Llurba Olivé. Women and Perinatal Health Research Group.. 2017 SGR 1267. Agència de Gestió d'Ajuts Universitaris i de Recerca. Duration: 2017-2019. 10,000.00 €.

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

Grants Awarded in 2017

- Elisa Llurba Olivé. Red de salud materno-infantil y del desarrollo. RD16/0022/0015. Instituto de Salud Carlos III. Duration: 2017-2021. 71,412.00 €.
- 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 incontinência urinaria femenina. CONVENI BST 2017-3. Banc de Sang i Teixits. Duration: 2017-2020. 136,904.00 €.

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

Theses

- Míriam Bella Bustamante. Heparina de Bajo Peso Molecular (HBPM) para la prevención de complicaciones derivadas de la insuficiencia placentaria en las pacientes de riesgo sin trombofilia. Universitat Autònoma de Barcelona. Director: Elisa Llurba Olivé. Date of defense: 20/07/2017.
- Aina Ruiz Romero. Impacto de las cardiopatías congénitas en el sistema nervioso central. Universitat Autònoma de Barcelona. Director: Elisa Llurba Olivé. Date of defense: 18/09/2017.

Collaborations

Collaborations with other IIB Sant Pau Groups

- 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-Anson)

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) Hypothesis: There is an inter-relationship between mother and fetus in the genesis of CHD. Main objective: To develop new models to address these questions using genetically engineered mice is highly innovative and certainly will lead to new insights into the relationships between hypoxia-dependent placental morphogenesis, placental function and effects on oxygen metabolism in the fetus. Collaborator: Elisa Llurba.
- Project: Accuracy of clinical characteristics, biochemical and ultrasound markers in the prediction of preeclampsia: an Individual Patient Data (IPD) Meta-analysis. Principal Investigator: Shakila Thangaratinam, PhD; Professor in maternal and perinatal health at Queen Mary University of London, of Mile End Road, London, E1 4NS with administrative offices at QM Innovation Centre, 5 Walden Street, Whitechapel, (London E1 2EF) (the 'Recipient'). Main Objective: To develop, externally validate and update separate prediction models for (i) early (<34 weeks' gestation), (ii) late (_ 34 weeks) and (iii) any onset preeclampsia and to estimate the prognostic value of individual clinical, biochemical and ultrasound markers for predicting preeclampsia by IPD meta-analysis. Collaborator: Elisa Llurba.

National collaborations

- Maternal and Infant Health and Development Network (SAMID Network).
- RD16/0022/0015. Principal investigator: Elisa Llurba. Objective: The main objective is to study the different pathological processes, nutritional and environmental conditions of perinatal and postnatal period, by addressing the study of factors of prematurity, prevention and patient safety, environmental and pathogenetic factors, nutrition and child development as well as promoting research into new products and therapeutic procedures. It is also their aim to study the long-term consequences and its relationship with certain disorders of high prevalence in later stages of life, such as neuropsychiatric diseases, obesity and its complications. Collaborator: Olga Sánchez.
- 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). Hypothesis: The incidence of breast cancer during pregnancy is increasing worldwide. Optimal chemotherapy may be given during pregnancy. However a high level of pregnancy complications is still observed and a high percentage of preterm deliveries is observed because those complications. Main objective: To gain insight into the effect on placental function and fetal development of fetal period exposition to chemotherapy, especially on the impact on neurological development and cardiac function. 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 Roura (Hospital Universitario de la Vall d'Hebron, Barcelona). Hypothesis: There is a relationship between anti-angiogenic factors and the incidence of cardiovascular injury to medium-long term in patients with preeclampsia (PE) or intrauterine growth restriction (IUGR). Main objective: The aim is to establish measures that might be appropriate to reduce cardiovascular risk in patients with a history of PE / IUGR during pregnancy. The project consists of two studies, one in humans, and the other in sFlt-1-induced preeclampsia rat model. Collaborators: Olga Sánchez.
- The Banc de Sang i Teixits (Blood and Tissue Bank) is a public agency of the Catalan Department of Health whose mission is to guarantee the supply and proper use of human blood and tissue in Catalonia. Collaborator: Elisa Llurba.

***TIF: 1.168 **MIF: 1.168**

Scientific Production

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., Rovere-Querini P., Lundelin K., Picardo E., Mekinian A., Comparative study between obstetric antiphospholipid syndrome and obstetric morbidity related with antiphospholipid antibodies (2017) MED CLIN-BARCELONA. **IF: 1.168**

Other Publications

- I Herraiz, E Llurba, S Verlohren , A. Galindo, en nombre del Grupo español para el estudio de los marcadores angiogénicos en la preclampsia, revista PROGRESOS. Actualización del diagnóstico y el pronóstico de la preclampsia con la ayuda del cociente sFlt-1/PlGF en embarazos únicos.

*Total Impact Factor **Mean Impact Factor