Maternal proteomics reveals the involvement of complement and coagulation cascades in early onset preeclampsia

Youssef L1,2, Diaz-Ricart M2, Palomo M2, Blasco M2, Garcia H2, Garcia-Pagan JC2, Dantas AP2, Campistol JM2, Crispi F1,2, Gratacos E1,2

1 Fetal Medicine Research Center, BCNatal – Barcelona Center for Maternal-Fetal and Neonatal Medicine, Barcelona, Spain.
2 Institut Clinic de Ginecologia, Obstetricia i Neonatologia, IDIBAPS, University of Barcelona, Barcelona, Spain.

Objective
To investigate the pathophysiological pathways involved in early onset preeclampsia (PE) by maternal blood proteomic analysis.

Methods

Maternal blood at diagnosis

Proteomics
(Liquid chromatography - mass spectrometry)

Controls
N=6

Early severe PE
N=14

Statistics: Multivariate & univariate analysis
Protein-protein network enrichment

Results

Figure 1: Partial least squares discriminant analysis scores plot between components 1 and 2. The explained variance is shown in brackets.

Figure 2: Protein-Protein Interaction network for the differential proteins between PE and controls. Nodes represent proteins and edges interaction between proteins.

Conclusions: Proteomic analysis reveals that complement and coagulation cascades is main differential pathway in early onset severe PE compared to uncomplicated pregnancies. Future studies are warranted to investigate potential therapeutic targets for PE within this pathway.