## OP-006 Cardiovascular disease after early-onset preeclampsia

Paula Domínguez-del Olmo[1], Ignacio Herraiz[2], Cecilia Villalaín[2], Gema Ruíz[1], Enrique Morales[1], Jose Luis Ayala[3], Jorge Solís[1], Alberto Galindo[2]

[1]12 de Octubre University Hospital, Madrid, Spain
[2]12 de Octubre University Hospital, Fetal Medicine Unit, Obstetrics and Gynecology Service, Madrid, Spain
[3]Complutense University of Madrid, Madrid, Spain

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**Objective:** Early-onset preeclampsia (eoPE) is a hypertensive pregnancy-related complication characterized by endothelial dysfunction manifested before 34 weeks. Literature stated that women with a hypertensive-complicated obstetric history are at increased risk of cardiovascular disease (CVD), situating the postpartum period as an excellent opportunity for effective screening and cardiovascular risk prevention. In this research, we have assesed if the vascular damage caused during an episode of eoPE is associated later on to a higher risk and occurrence of CVD compared to women with normal pregnancies.

**Methods:** An observational, longitudinal, prospective case-control study have been conducted in 50 women with eoPE and a control group of equal size (matched for age, parity, pregestational body mass index and date of delivery). All patients underwent a cardiovascular assessment including a blood-urine test, an atherosclerosis study and a 24-hour blood pressure monitoring. A statical analysis was performed for case-control parameters comparisons; Traditional Framingham calculators were used to estimate the cardiovascular risk in all patients and a Kaplan-Meier analysis was done to estimate the survival function (time without hypertension (HT)).

**Results:** At a median of 7.5 years after delivery, the blood tests results suggest a worse vascular status in the eoPE group; they showed worse BP measurements, especially in the nocturnal period and no differences were found in the atherosclerosis study. The obtained scores from the Framingham calculators were similar in both groups; however, a CVD was present in 44% of eoPE cases vs 10% of controls and chronic HT was diagnosed after delivery in 38% vs 8% of controls (relative risk of 4.7) with a survival time of 7.4+/-0.7 and 11.6+/-0.2, respectively.

**Table 1.** 24-hour blood pressure measurement

| Parameter | Controls | eoPE cases | p |
|---|---|---|---|
| **24 h-BP** | | | |
| Systolic BP (mmHg) | 111.0 ± 11.8 | 116.3 ± 11.0 | <0.05 |
| Systolic readings over limit (%) | 11.2 ± 18.9 | 17.9 ± 20.8 | <0.01 |
| Diastolic readings over limit (%) | 18.7 ± 22.6 | 28.1 ± 22.2 | <0.01 |
| **Diurnal BP** | | | |
| No statistically significant differences were found | | | |
| **Nocturnal BP** | | | |
| Systolic BP (mmHg) | 101.2 ± 12.9 | 108.3 ± 11.5 | <0.01 |
| Diastolic BP (mmHg) | 62.6 ± 7.6 | 66.8 ± 8.2 | <0.05 |
| Mean BP (mmHg) | 75.5 ± 9.0 | 80.6 ± 8.9 | <0.01 |
| Systolic readings over limit (%) | 12.1 ± 23.4 | 18.7 ± 22.8 | <0.05 |

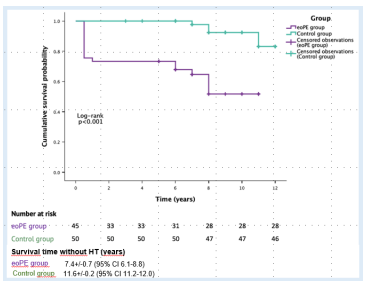


**Fig 1.** Kaplan-Meier analysis

**Conclusion:** Women with a history of eoPE exhibited greater endothelial dysfunction and a higher prevalence of CVD, particularly chronic HT. Current CVD scores underestimate these risks in women with a history of eoPE, so it should be included as a risk factor.

Keywords: Hypertensive, pregnancy, preeclampsia, cardiovascular, case-control

## OP-007 First-trimester preeclampsia screening for the detection of fetal growth restriction

Cecilia Villalaín González[1], Carmen San Martín[1], Alice María Colmenero-Walsh[1], Eva Robisco[2], Ignacio Herraiz[2], Alberto Galindo[2]

[1]Complutense University of Madrid, University Hospital 12 de Octubre, Maternal and Child Health and Development Network, Department of Obstetrics and Gynaecology, Fetal Medicine Unit, Madrid, Spain
[2]Complutense University of Madrid, Madrid, Spain

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**Objective:** Placental dysfunction is at the root of maternal complications such as preeclampsia (PE) as well as most cases of poor fetal growth. Given the shared underlying

etiology, we aim to evaluate the performance of the FMF combined first-trimester PE screening at different cut-offs to detect fetal growth restriction (FGR) at any point of pregnancy.

**Methods:** Retrospective cohort study performed at a tertiary-level teaching hospital including singleton pregnancies with first-trimester PE screening and complete pregnancy outcomes with delivery at the same hospital between January 2023 and September 2023. The study was approved by the local Institutional Review Board. Gestational age was calculated according to crown-rump length at the first-trimester ultrasound. Screening was performed at 12 (11-14) weeks with PlGF determination at 11 (9-13) weeks. We categorized the risk into four groups, a basal one G0 (>1:200), G1 between 1:200 and 1:101, G2 between 1:100 and 1:51, and G3 ϑ1:50. PE was defined as the presence of hypertension (ϑ140 / 90 mmHg) and proteinuria (ϑ300 mg/24 hours or a urine protein-to-creatinine ratio of ϑ 0.3). FGR was considered as a newborn weight <3rd customized centile according to GROW software. The main maternal basal characteristics as well as perinatal outcomes were collected from the clinical electronic history.

Descriptive analysis was performed using mean (standard deviation-SD) and median (interquartile range) or n (%) where appropriate. The performance of the screening to detect FGR was tested using logistic regression analysis, sensitivity, specificity, positive and negative predictive value, and the area under the ROC curve. Statistical analysis was computed using STATA 14.2 and significance was considered with p values <0.05 in a two-tailed distribution.

**Results:** A total of 1831 screenings were performed, of which 1330 had complete pregnancy outcomes and composed the final study population. The mean (SD) maternal age was 31.8 (6.1) years old of which 48% were nulliparous, 3.9% had at least one major risk factor of PE, 11.8% had a history of fetal smallness, and 5.0% of previous PE.

Classification of the risk of preterm PE showed that 1127/1330 (84.7%) were part of of G0, 77/1630 (5.8%) of G1; 70/1330 (5.3%) of G2, and 56/1330 (4.2%) of G3.

The mean (SD) gestational age at delivery was 39.5 (2.1) weeks, with a mean weight of 3194 (493) g. The overall PE incidence was 5.0% and 1.7% of preterm PE. There were 45/1330 (3.4%) of newborns born <3rd centile of which 8/45 (17.8%) had concomitant PE. When compared with the G0 group, the RR for FGR was 2.4 (95%CI 0.9 – 6.3) for G1; 1.6 (95% CI 0.5 – 5.2) for G2, and 4.7 (95% CI 2.1 – 10.7) for G3.

Considering those at highest risk (G3), the performance of the screening to detect FGR had a sensitivity of 25% (95% CI 15.3% - 37%), specificity of 95.8% (95% CI 94.6% - 96.8%), positive predictive value of 23.3% (95% CI 14.2% - 34.6%), negative predictive value of 96.2% (95% CI 95% - 97.1%), and AUC of 0.60 (95% CI 0.55 - 0.66).

**Conclusion:** A very high risk (>1:50) of preterm PE in the first-trimester screening is strongly associated with both PE and FGR but is a poor predictor of fetal growth. Strategies later on during pregnancy should be established to early identify FGR and follow up in this particular group of women.

Keywords: Preeclampsia, screening, fetal growth restriction

## OP-008 Performance of the FMF first-trimester preeclampsia-screening algorithm in women with high-risk factors

Cecilia Villalaín González[1], Alice María Colmenero-Walsh[1], Carmen San Martín[1], Eva Robisco[2], Alberto Galindo[2], Ignacio Herraiz[2]

[1]Complutense University of Madrid, University Hospital 12 de Octubre, Maternal and Child Health and Development Network, Department of Obstetrics and Gynaecology, Fetal Medicine Unit, Madrid, Spain
[2]Complutense University of Madrid, Madrid, Spain

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**Objective:** The performance of the first-trimester preeclampsia (PE) screening among women with traditional high-risk factors remains controversial. Administration of prophylactic aspirin regardless of the result of the screening is still a common practice considered the basal risk of placental disease. Our aim was to evaluate the performance of the FMF first trimester screening to detect preterm PE in women with at least one high-risk factor.

**Methods:** Retrospective cohort study performed at a tertiary-level teaching hospital including singleton pregnancies with first-trimester PE screening and complete pregnancy outcomes with delivery at the same hospital between January 2023 and September 2023. The study was approved by the local Institutional Review Board. Gestational age was calculated according to crown-rump length at the first-trimester ultrasound. Screening was performed at 12 (11-14) weeks with PlGF determination at 11 (9-13) weeks. High-risk factors were considered as the presence of chronic hypertension, pregestational diabetes