observed positive correlation between values of blood pressure and copeptin and between copeptin and troponin T, what can strengthen the idea of myocardial lesion in pregnancies with SGA/FGR. However, there was no statistically significant difference in biochemical markers of myocardial ischemia evaluated separately. Nevertheless, before a definitive causation is established, more data needs to be collected.

VP39.03
Plasma and placental expression of EGFL7 in pregnancies complicated by altered maternal hemodynamics and intrauterine growth restriction

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Objectives: Intrauterine growth restriction (IUGR) is mainly caused by placental insufficiency and altered maternal hemodynamic state, that can be monitored with the classical obstetric ultrasound and the recent USCOM method. Nitric oxide (NO) is a regulator of basal vascular tone and myometrial relaxation, and treatment with NO donors improves maternal hemodynamics and fetal growth. Epidermal growth factor-like domain 7 (EGFL7) has a critical role in placental and fetal growth. This study aimed to investigate maternal hemodynamics, fetal growth and EGFL7 plasmatic and placental modulation in IUGR pregnancies treated or not with NO donors.

Methods: 37 pregnant women with a diagnosis of IUGR, treated or not with NO donors, were enrolled and underwent obstetric ultrasound, maternal hemodynamic evaluation with USCOM and blood sampling at enrollment and when possible before delivery. All patients underwent elective Caesarean section and the placenta was collected. EGFL7 plasma concentration was evaluated by ELISA, placental mRNA levels of EGFL7 by qRT-PCR analysis.

Results: More than 80% of IUGR patients had altered maternal hemodynamics and increased levels of circulating EGFL7 (p = 0.0044, figure 1a). Increased circulating EGFL7 was accompanied by a parallel increase of EGFL7 mRNA expression in the placenta (p = 0.0006, figure 1b). Patients with altered USCOM values treated with NO donors resulting in improved hemodynamic state showed a trend towards a decrease in circulating EGFL7 levels (figure 1c).

Conclusions: Altered maternal hemodynamics in IUGR pregnancies is associated with altered levels of the angiogenic factor EGFL7 in both maternal vascular system and placenta. These results suggest that EGFL7 may represent a novel marker to identify conditions of maternal cardiovascular stress associated to impaired placentation.

> Supporting information can be found in the online version of this abstract

VP39.04
Early/late-IUGR treated with NO donors transdermal patches: prognostic and predictive value of maternal hemodynamic assessment at the onset of therapy

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Objectives: To assess the predictive value of maternal hemodynamic measurement at the onset of NO donors therapy in IUGR patients. A conceivable relationship could allow the prompt selection of patients more likely to benefit from therapy. To find reliable USCOM cut-off to use as prognostic factors for neonatal outcome.

Methods: 16 singleton pregnant women diagnosed with early-IUGR and 12 with late-IUGR were evaluated by USCOM before undergoing with NO donors therapy. Patients were followed throughout pregnancy: those who had ≥10% decrease in total vascular resistance after a minimum of 14 days of NO donors were considered responder (R) to treatment. Hemodynamic evaluation and treatment response were correlated to neonatal outcome at birth, considering: GA, modality, birthweight, Apgar and neonatal resuscitation.

Results: Most of late-IUGR patients have a positive outcome and USCOM assessment before undergoing the treatment showed higher TVR in R compared with NR (1418.37 ± 143.23 vs. 960.50 478.64 dynes×s/cm^5; P = 0,048). Most of early-IUGR patients have a negative outcome. 67% of R have a positive outcome compared to 14% of NR (P = 0,0401). Early-IUGR with positive outcome started therapy earlier than those with negative outcome (26.6 ± 1.04 vs. 29.9 ± 3.03 weeks of GA; P = 0,0258).

Conclusions: For late-IUGR patients USCOM measurement can identify patients with high TVR: they would benefit from NO donors for having positive outcome at birth; whom with low TVR, despite the therapy, are more likely to have positive outcome. In early-IUGR patients USCOM evaluation as responder is a positive prognostic factor; early treatment in early-IUGR patients shows a better neonatal outcome.

VP39.05
Maternal hemodynamics in first trimester: feasibility study in our cohort of patients

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Objectives: The main aim of this study was to determine intraobserver and interobserver variability of hemodynamic measurement in our cohort of patients in the first trimester using non-invasive ultrasound cardiac output monitor (USCOM-1A).

Methods: Prospective cohort study of unselected pregnant women with singleton pregnancy attending routine combined first trimester screening. Stroke volume (SV), cardiac output (CO) and sys-

VP39.04: Table 1.

	Late-IUGR n = 12	Responder n = 6	Not responder n = 6	p-value	Early-IUGR n = 16	Responder n = 9	Not responder n = 7	p-value
Positive outcome	9	4	5		7	6	1	
% positive	75%	67%	83%	ns	44%	67%	14%	P = 0,041
Negative outcome	3	2	1		9	3	6	
% negative	25%	33%	17%	ns	56%	33%	86%	ns