

## Non-invasive maternal haemodynamics for the classification of pregnancies complicated by foetal growth restriction

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DOI: 10.36129/jog.2024.S103

**Objective.** To verify whether the temporal cut-off of 32 weeks' gestation or the possible presence of hypertensive disorders of pregnancy (HDP) are effective in identifying maternal haemodynamic differences in pregnancies complicated by foetal growth restriction (FGR).

**Materials and Methods.** A prospective study conducted at three referral centres since November 2019. Singleton pregnant women underwent non-invasive maternal haemodynamic evaluation by USCOM device at FGR diagnosis. Comparisons between early- and late-onset FGR among the entire study cohort, FGR associated with HDP (FGR-HDP) and isolated FGR (i-FGR) were performed. In addition, early-onset FGR-HDP and i-FGR and late-onset FGR-HDP and i-FGR were compared. Finally, comparison between FGR-HDP and i-FGR was performed.

**Results.** During the study period, 213 pregnant women were enrolled. Early-onset FGR showed higher mean arte-

rial pressure (MAP) and systemic vascular resistance (SVR) and lower stroke volume (SV) than late-onset FGR. Both comparisons between early- and late-onset FGR-HDP and i-FGR did not show any statistically significant difference. Conversely, early-onset and late-onset FGR-HDP showed higher MAP and SVR and lower cardiac output (CO), SV and cardiac index (CI) than early-onset and late-onset i-FGR, respectively. Lastly, comparison between FGR-HDP and i-FGR, regardless of the temporal cut-off of 32 weeks' gestation, showed higher MAP and SVR and lower CO, SV and CI in the former.

**Conclusions.** Our data show that FGR-HDP and i-FGR are associated with different maternal haemodynamic profiles and the presence of HDP, rather than the temporal cut-off of 32 week's gestation, allows to appreciate maternal haemodynamic differences in pregnancies complicated by FGR.