Early third trimester maternal cardiac function in high-risk pregnancies of placental disfunction

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Objective. To compare maternal cardiac function at 27-28 weeks in high-risk pregnancies based on the development of late PE or SGA.

Materials and Methods. A cohort of high-risk pregnancies was prospectively constructed.

Maternal echocardiography was performed at 27+0-28+6 weeks. Parasternal long axis, apical 4-chamber and 5-chamber views were evaluated. SBP, DBP and MAP were measured.

Late SGA was defined as BW below 10th centile according to local curves. PE definition was based on ISSHP criteria.

Three non-exclusive groups were defined: group 0 with no PE nor SGA; group 1 with PE (± SGA); and group 2 with SGA (± PE). Group 0 was compared to group 1 and group 2.

Results. We included 350 high-risk pregnancies (59 SGA, 22 PE). Mean maternal age was 35 years (SD 5.2), mean maternal pre-pregnancy BMI 24.6 kg/m^2 (SD 5.3) and mean GA at the examination was 28.1 (SD 0.86). Non-exclusively, 12 (3.4%) had chronic hypertension and 9 (2%) maternal cardiopathy.

In PE group, compared to uncomplicated pregnancies, SBP and MAP were significantly higher, no differences were found regarding peripheral vascular resistance. Stroke volume was significantly lower.

In SGA group, compared to uncomplicated pregnancies, no differences were found regarding BP, but peripheral vascular resistance was significantly higher. Cardiac output was significantly lower.

Those parameters showed low performance for the prediction of late PE and SGA (UAC 0.78 (0.68-0.88), 0.68 (0.60-0.76)).

Conclusions. At 27-28 weeks, maternal cardiac haemodynamics showed differences between uncomplicated and PE or SGA pregnancies, but with a low predictive performance.