



Maternal Pre-eclampsia

Pre-eclampsia is pathologically high blood pressure during pregnancy, and occurs in approximately 3-5% of all pregnancies. Pre-eclampsia results in poor maternal and fetal outcomes and is responsible for 15-20% of all maternal deaths.

Clinical Background

- Early onset pre-eclampsia signals poor materno-fetal outcomes, while early treatment improves outcomes.
- An elevated SVR ($>1200 \text{ dynes.s.cm}^{-5}$) with a decreased SV, CO and SMII during the first weeks of gestation may be an early marker of cardiovascular maladaptation and onset of pre-eclampsia and predict negative materno-fetal outcomes.¹
- Screening for early changes of pre-eclampsia may allow for earlier, more appropriate interventions, and improve materno-fetal outcomes.¹

“Total vascular resistance evaluation is changing our practice to diagnose and treat hypertension and preeclampsia.”

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USCOM 1A Solution and Evidence

- USCOM 1A's direct Doppler assessment of SV, CO, SMII and SVR, detects the circulatory changes of pre-eclampsia as early as 5 weeks gestation, and long before BP changes (>20 weeks), and may better predict negative outcomes.¹
- USCOM 1A can be implemented to monitor maternal hemodynamics early in pregnancy (from 5 weeks), and screen for evolving pre-eclampsia, allows for earlier and more effective therapy.¹
- CO, SVR and SMII could be targets to evaluate the prolongation of gestation and the increase in fetal growth in treatment of intrauterine fetal growth restriction.²
- High Total Vascular Resistance (SVR) and lower Fat Mass during the first weeks of gestation may be an earlier marker of cardiovascular maladaptation more than BP and PAPP-A values.³

USCOM 1A enables access to advanced hemodynamic measures that identify early pre-eclampsia. USCOM 1A is accurate and non-invasive and is quick and easy to operate, allowing simple implementation of screening for pre-eclampsia. This permits precise personalised guidance of maternal therapy for optimal control of hypertension. Echocardiography is not as comprehensible or as easy to master as the USCOM 1A, and for access to measures of CO, CI, SMII and SVR, USCOM 1A is unmatched.

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