Microcirculatory studies in pregnant women - a useful tool for early detection of pregnancy-related complications?

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AIM: To evaluate the clinical utility of side stream dark field (SDF) imaging to evaluate physiological changes in the microcirculation in pregnant women and monitor complications such as preeclampsia.

METHODS: We have used SDF imaging to assess sublingual microcirculation in pregnant women to: (1) compare the microcirculation in pregnant women at term with age-matched non-pregnant women, (2) determine the impact of spinal analgesia and administration of phenylephrine on microcirculation in pregnant women undergoing a cesarean delivery, and (3) compare the microcirculation in pregnancy of at-risk individuals who develop preeclampsia versus those that do not.

RESULTS: Results suggest the microvascular flow index (MFI) is significantly higher in pregnant women at term compared to age-matched non-pregnant women. Spinal anesthesia does not appear to significantly impact the MFI of women undergoing a cesarean delivery. Prophylactic phenylephrine therapy during cesarean delivery had no consequences. Analysis of the microcirculation in women who develop preeclampsia is ongoing.

CONCLUSIONS: SDF imaging has the potential to be a useful clinical tool in evaluating microcirculation in pregnant women and may allow for the early detection of pregnancy-related complications such as preeclampsia.