Haemodynamic adaptation profiles after spinal anaesthesia for caesarean section: an UltraSonic Cardiac Output Monitoring study

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Objective. There is scarce data that allows anaesthesiologists to identify patients who may suffer from side effects and haemodynamic impairment after spinal anaesthesia. To identify baseline characteristics and the trend in haemodynamic variables in patients with poor *versus* normal adaptation. Poor adaptation was defined as a drop in cardiac index (CI) of at least > 20% after spinal anaesthesia. We also sought to study if MAP/HR and SVR follow the same trend in the 'poor adaptation' and 'normal adaptation' groups.

Materials and Methods. Retrospective observational study. USCOM measurements were performed in seven different moments analysing key haemodynamic parameters: CO, SVR, SV, MAP, HR, SMII, PKR. Spinal anaesthesia dosage was standardized, and no preload or preventive ephedrine were administered. Comparisons between groups by ANOVA.

Results. 54 women were enrolled. In the poor adaption group BMI was significantly higher and IUGR foetuses were more frequent. SMII dropped significantly, CI had a significant drop before returning to baseline. Conversely, in the normal adaptation group CI increased without dropping until the end of the surgery, with SVR and PKR showing a significant drop. MAP was reduced until the end of surgery in both groups. Only 52.4% of patients with a MAP/HR ratio < 1.1 had SVR < 1,300 dynes × sec/cm^5.

Conclusions. Patients with normal adaptation had the greatest variation of haemodynamic parameters to compensate anaesthesia. MAP was not sufficient to describe haemodynamics variation and MAP/HR cannot be a substitute parameter for SVR to identifying patients with vasodilated circulation.