

A comparison of the hemodynamic effects of paracervical block and spinal anesthesia for labor analgesia.

Manninen T, Aantaa R, Salonen M, Pirhonen J, Palo P.

Department of Anesthesiology, University of Turku, Finland.

BACKGROUND: Both paracervical block (PCB) and epidural analgesia are sometimes associated with hemodynamic effects potentially harmful to the well-being of the fetus. Our study was designed to test the hypothesis that PCB would have a more profound effect on maternal and fetal blood flow than epidural analgesia.

METHODS: Forty-four healthy primiparous parturients were randomized to receive either PCB (n=21) or epidural analgesia (n= 23) with 25 or 30 mg of bupivacaine, respectively, for labor analgesia. Maternal blood pressure and fetal heart rate were recorded. Blood flow was measured using a color Doppler device. The blood flow measurements consisted of assessment of the pulsatility indices (PI) of the right maternal femoral artery and the main branch of the uterine artery (placental side), the umbilical artery and the fetal middle cerebral artery. The measurements were performed before administration of analgesia and approximately 15-20 min later after the onset of analgesia.

RESULTS: Both methods provided in general good analgesia, but rescue medication was required more often after PCB. Epidural analgesia decreased maternal blood pressure more than PCB and the PI of maternal femoral artery decreased after onset of epidural analgesia, indicating epidural-induced vasodilation. The PI of the uterine artery increased after the onset of PCB, indicating vasoconstriction of this artery. No significant adverse effects or differences in the well-being of the newborn were observed, as indicated by similar Apgar scores and pH-status.

CONCLUSION: There were small differences in the effects of PCB and epidural analgesia on uteroplacental circulation as well as on maternal hemodynamics. PCB may have a vasoconstrictive effect on the uterine artery. This and the fact that the parturients required rescue analgesia more frequently after PCB than after epidural block speaks for the feasibility of the latter in obstetrics.