

## **INTRAUTERINE PRESSURE CATHETERS (IUPC) AND THE RISK OF EXTRA-OVULAR PLACEMENT AND RESULTANT PLACENTAL SEPARATION**

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**OBJECTIVE:** Reports have found a possible association between the placement of transducer tipped (TT) IUPC's and the occurrence of placental abruption. Stiffness and tip characteristics of TT IUPCs may increase the risk of extra-ovular (between the amniotic membranes and uterus) placement. We sought to determine the rate of extra-ovular placement, if placental separation results from extra-ovular placement and if catheters with different design characteristics affect the rate of extra-ovular placement.

**STUDY DESIGN:** A randomized trial comparing a TT IUPC to an air coupled (AC) IUPC was conducted. Women were eligible if their physician decided to place an IUPC. If a cesarean delivery was performed, the IUPC was left in place and the position documented. Outcome variables included extra-ovular placement, placental abruption, difficulty in IUPC placement and bleeding on placement. Demographic characteristics and potential confounding variables were recorded.

**RESULTS:** There were 237 patients entered, 105 (44.3%) had a Cesarean delivery, with 41 in the AC IUPC group and 64 in the TT IUPC group. There was no significant difference in maternal age, gestational age, gravidity, duration of rupture of membranes, birthweight, Apgar scores, cord pH, cocaine use, tobacco use, oxytocin use, catheter removal due to poor functions or difficulty in placement. The TT IUPC group was more likely to have bleeding after insertion (22.8% vs. 9.3%;  $p=0.02$ ). Extra-ovular placement was significantly higher in the TT IUPC group (12.5% Vs. 2.4%;  $p=0.03$ ). Three TT IUPCs were found in the placenta with evidence of placental separation in two. Cesarean delivery was more likely in the TT IUPC group (52.6% vs. 35.3%;  $p=0.006$ ).

**CONCLUSION:** The rate of extra-ovular IUPC placement is 8.4%. TT IUPCs are more likely to be placed extra-ovularly and may be associated with placental separation. An increase in Cesarean delivery in the TT IUPC group may be due to the higher rate of extra-ovular placement.