Can We Apply Electrical Median Nerve Stimulation for Prophylactic Treatment of Nausea and Vomiting (N/V) in Parturients Undergoing Cesarean Section (C/S) with Combined Spinal-Epidural Technique (CSE)?

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Introduction: At our institution we routinely administer IV 8mg Ondansetron and 10mg metoclopramide upon induction of CSE for treatment of N/V during C/S. Application of electrical median nerve stimulation helps reduce the incidence of N/V during general anesthesia.1 In this study we are comparing electrical median nerve stimulation to no treatment to determine if electrical median nerve stimulation is effective in the prophylactic treatment of N/V in our parturients undergoing C/S with CSE.

Methods: This is a retrospective review of anesthesia records of 153 parturients undergoing induction of CSE for C/S. Group I (GI, n= 76) received no therapy. Group II (GII, n= 77) received median nerve stimulation from procedure onset until arrival at the PACU. An investigator recorded patients’ height, weight, ASA status, gestational age in weeks, Apfel score (1-4), hypertension (>140/90), hypotension (<90 systolic), hypoxia (O2 Sat <85%), blood loss >700mL, efficacy of sensory block for C/S, evidence of N/V during procedure (after administration of epidural medications, after eversion of uterus, after replacement of uterus, upon arrival to PACU), N/V treatment satisfaction, and overall satisfaction. The student’s t-test, Chi-squared test, and Fisher’s exact test were used for statistical analysis. A p-value of <0.05 was considered statistically significant. Data was presented as Mean ± S.D.

Results: There was no significant difference among the groups with respect to age, weight, height, ASA status, gestational age, Apfel score, incidences of hypertension, hypotension, hypoxia, efficacy of sensory block, blood loss >700mL, nausea after eversion of uterus, nausea after replacement of uterus, nausea upon arrival to PACU, and overall satisfaction. There was a significant difference between the groups for vomiting and nausea during procedure and N/V satisfaction >7 (Table 1). Specifically in the procedure itself, there was a significant difference between the groups with respect to nausea after application of CSE (Table 1).

Conclusion: There was a significant difference in the incidence of nausea and vomiting when comparing control with median nerve stimulation during C/S with CSE. Furthermore, there was a significant difference in the incidence of nausea specifically during phase 1 of the procedure, after application of CSE. High satisfaction (>7/10) from N/V was significantly greater in the median nerve stimulation group as opposed to control. Therefore, this shows that the use of median nerve stimulation was effective in prophylactically treating N/V in our parturients undergoing C/S with CSE.