Author’s response to reviews

Title: Sub-hypnotic dose of propofol as antiemetic prophylaxis attenuates intrathecal morphine-induced postoperative nausea and vomiting, and pruritus in parturient undergoing cesarean section — a randomized control trial.

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Version: 3 Date: 26 Aug 2019

Author’s response to reviews:

AUTHORS RESPONSE

Dear Editor,

Thank you very much for taking time out of your busy schedules to review our manuscript. Thank you very much for your brilliant comments and suggestions. We, the authors of this study agree with you and appreciate all your comments and suggestion. We have made the necessary changes in our manuscript according to your comments and suggestions.

Reviewer reports:

Premal Trivedi, M.D. (Reviewer 1):

Thank you for clarifying the group characteristics and inclusion/exclusion criteria and including p-values. My comments otherwise are below:
REVIEWERS' COMMENT

1. The P values listed in the text are helpful in that they describe the relationships between the groups (propofol and metoclopramide vs control and propofol vs metoclopramide). I'm not so sure the p-values in the tables are as helpful as don't comment on the differences between the propofol and metoclopramide groups.

AUTHORS RESPONSE

We have listed all the p-values in the tables in the text according to your comment. Please find the manuscript for your perusal.

The degree of hypotension experienced during the intraoperative period after the subarachnoid blockade indicated that 84 (73.0 %) parturients from the control group, 76 (66.1 %) from the propofol group, and 89 (77.4 %) from the metoclopramide group experienced no degree of hypotension compared with baseline blood pressure. While 19 (16.5 %) parturients from the control group, 27 (23.5 %) from the propofol group, and 15 (13.0 %) from the metoclopramide group experienced 10-20 % decreased in blood pressure compared with the baseline blood pressure (Table 2). 8 (7.0 %) parturients from the control group, 9 (7.8 %) from the propofol group, and 10 (8.7 %) from the metoclopramide group experienced 21-31 % decreased in blood pressure compared with the baseline blood pressure. Also, 4 (3.5 %) parturients from the control group, 3 (2.6 %) from the propofol group, and 1 (0.9 %) from the metoclopramide group experienced 31-40 % decreased in blood pressure when compared with the baseline blood pressure (Table 2). The results indicated that there was no significant difference among parturients from the propofol group, metoclopramide and the control group regarding 0 %, 10 – 20 %, and 31- 40 % decreased in blood pressure (P < 0.01; P < 0.01; P < 0.05 respectively). However, the 21-31% decreased in blood pressure showed no significant difference between the groups (Table 2). Hypotension caused by the subarachnoid block in individual parturient responded to ephedrine (5 - 20 mg) treatment. The doses of ephedrine administered indicated significant difference between the groups (P< 0.01; P< 0.01; P < 0.02) (Table 2). The duration of surgery ranged from 25 - 90 minutes and showed significant difference between the groups (P< 0.01; P< 0.01; P< 0.01) (Table 2). No episode of intraoperative emetic was noted for the individual groups.

To investigate the antiemetic prophylaxis effect of propofol in cesarean section, we injected saline, propofol, or metoclopramide 10-15 minutes before the end of surgery. We then monitored parturients for any incidence of PONV for 24 hours postoperatively. The data indicated that 108 (93.9 %) from the control group, 10 (8.7 %) from the propofol group, and 8 (6.9 %) from the metoclopramide group experienced some levels of PONV (Figure 2; Table 3). It was noted that the incidence of PONV significantly decreased in the propofol group compared with the control group (P< 0.01). Similarly, PONV significantly reduced in the metoclopramide group compared with the control group (P< 0.01) (Table 3). However, the data showed no significant difference
in the incidences of PONV (nausea, vomiting and none) between the propofol and the metoclopramide groups (P-values = 0.99; P-values = 0.31; P-values = 0.35 respectively) (Figure 2). It was also noted that 105 (97.2 %) parturients from the control group, 1 (10.0 %) from the propofol group, and 3 (37.5 %) from the metoclopramide group received additional rescue antiemetic (Table 3). The data also indicated a significant difference between the groups for the rescue antiemetic therapy (P< 0.001; P< 0.01) (Table 3). This evidence, therefore, suggested that a low dose of propofol for antiemetic prophylaxis may equally be effective as metoclopramide in preventing intrathecal morphine-induced PONV in cesarean section.

We next assessed the parturients satisfaction level of the anesthesia service. The data indicated that 9 (7.8 %) parturients from the control group, 93 (80.9 %) from the propofol group and 89 (77.4 %) from the metoclopramide group scored excellent for anesthesia service. 15 (13.0 %) parturients from the control group, 20 (17.4 %) from the propofol group, and 23 (20.00 %) from the metoclopramide group scored good for the anesthesia service. 45 (39.13 %) respondents from the control group, 2 (1.7 %) from the propofol group and 3 (2.6 %) from the metoclopramide group scored satisfactory for the anesthesia, while 46 (40.00%) from the control group and none from propofol or metoclopramide groups scored poor for anesthesia service (Table 4). The data showed significant difference among parturient from the propofol or metoclopramide group regarding those who scored excellent, good, Satisfactory or poor for the anesthesia service compared with the control group (P< 0.01; P < 0.01; P< 0.01; P< 0.01 respectively) (Table 4). This emerging evidence, therefore, suggested that intrathecal injection of morphine with a sub-hypnotic dose of propofol for parturients undergoing cesarean section may improve postoperative analgesia and prevent intrathecal morphine-induced PONV and pruritus without compromising anesthetic reliability.

REVIEWERS’ COMMENT

2. On page 11, referring to the table describing the incidence and % of hypotension relative to baseline may be more clear than writing out the findings. I found that paragraph difficult to read.

AUTHORS RESPONSE

The degree of hypotension experienced during the intraoperative period after the subarachnoid blockade indicated that 84 (73.0 %) parturients from the control group, 76 (66.1 %) from the propofol group, and 89 (77.4 %) from the metoclopramide group experienced no degree of hypotension compared with baseline blood pressure. While 19 (16.5 %) parturients from the control group, 27 (23.5 %) from the propofol group, and 15 (13.0 %) from the metoclopramide group experienced 10-20 % decreased in blood pressure compared with the baseline blood pressure (Table 2). 8 (7.0 %) parturients from the control group, 9 (7.8 %) from the propofol group, and 10 (8.7 %) from the metoclopramide group experienced 21-31 % decreased in blood
pressure compared with the baseline blood pressure. Also, 4 (3.5 %) parturients from the control group, 3 (2.6 %) from the propofol group, and 1(0.9 %) from the metoclopramide group experienced 31-40 % decreased in blood pressure when compared with the baseline blood pressure (Table 2). The results indicated that there was no significant difference among parturients from the propofol group, metoclopramide and the control group regarding 0 %, 10 – 20 %, and 31- 40 % decreased in blood pressure (P < 0.01; P < 0.01; P < 0.05 respectively). However, the 21-31% decreased in blood pressure showed no significant difference between the groups (Table 2). Hypotension caused by the subarachnoid block in individual parturient responded to ephedrine (5 - 20 mg) treatment. The doses of ephedrine administered indicated significant difference between the groups (P< 0.01; P< 0.01; P < 0.02) (Table 2). The duration of surgery ranged from 25 - 90 minutes and showed significant difference between the groups (P< 0.01; P< 0.01; P< 0.01) (Table 2). No episode of intraoperative emetic was noted for the individual groups.

REVIEWERS’ COMMENT

3. When reporting incidences of PONV or pruritus in the text, it may be less verbose to write about those who had these symptoms (and not also those who didn't)
levels of postoperative pruritus (Figure 3). We observed that the sub-hypnotic dose of propofol significantly decreased the incidence of postoperative pruritus compared with metoclopramide (P < 0.01). We also observed that there was no significant difference in the incidence of pruritus between the metoclopramide and the control groups (P = 0.99). However, there was a significant difference in the incidence of pruritus between the propofol and the control groups (P < 0.01) (Figure 3). The data also indicated that there were significant differences in the incidence of pruritus (mild, moderate, and no pruritus) between the metoclopramide and propofol groups (P < 0.01; P < 0.01; and P < 0.01 respectively) (Figure 3). This evidence suggested that sub-hypnotic dose of propofol for antiemetic prophylaxis also exhibits a therapeutic effect against postoperative pruritus.

The data also showed that 114 (99.1 %) parturients from the control group, 115 (100.0 %) from the propofol group, and 114 (99.1 %) from the metoclopramide group received no supplementary postoperative analgesia, whereas, 1 (0.9 %) from the control group, 0 (0.0 %) from the propofol group, and 0 (0.0 %) from the metoclopramide group received suppository diclofenac (100 mg) as supplementary analgesia at the postoperative period (Table 4). There was no significant difference in the request for postoperative rescue analgesic (Supp. diclofenac, I.V. Tramadol, and None) between the individual groups (P-value = 0.13 for the control group, P-value = 0.22 for the propofol group and P-value = 0.73 for the metoclopramide group respectively) (Table 4). These findings, therefore, suggested that intrathecal injection of morphine in parturients undergoing cesarean section may provide adequate postoperative analgesia.