Abstract Preview - Step 3/4
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Topic: Postoperative pain management

Title: NITROUS OXIDE ADDED AT THE END OF ANESTHESIA DECREASES EARLY POSTOPERATIVE PAIN

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Text: Background and aims: Nitrous oxide (N₂O) analgesic mechanism of action is not clearly understood. Recently, an analysis of ENIGMA trial suggested that N₂O may have a preventive analgesic effect. We investigated if adding N₂O at the end of anesthesia to fasten recovery after isoflurane anesthesia has influence on postoperative pain.

Methods: After obtaining IRB approval and informed consents, 82 women, ASA PS I-III, scheduled for laparoscopic assisted vaginal hysterectomy were randomized into two groups: GO₂ - air in 30% oxygen (n=42) and GN₂O - the same mixture until last 30 minutes of the surgery when 70% N₂O and 30% oxygen was used (n=40). Anesthesia was maintained with isoflurane ~ 1MAC. Pain VAS score and total amount of postoperative opioids were recorded at 2h and 24 hours postoperatively. Diclofenac was given immediately after surgery. For severe pain (VAS >40 mm) meperidine was given. Data were analyzed using Chi-Square and Mann-Whitney test.

Results: There were no significant differences between two groups for age, BMI, duration of anesthesia and surgery, and intraoperative fentanyl use. GN₂O patients received on average N₂O for 27.1±10.1 minutes, woke up 3.8 minutes faster (p=0.01), had less pain at 2 hours (VAS 38.1±14.6 vs 47.4±15.2 mm, p=0.008) and received less meperidine (82.5 vs 100%, p=0.005). There was not difference in pain at 24 hours between groups (VAS 13.2±12.4 vs 13.0±13.0 mm, p=0.86).

Conclusions: Adding N₂O at the end of anesthesia hastened recovery time, decreased pain at 2 hours postoperatively and number of patients who needed meperidine postoperatively.

Author Keywords: Nitrous oxide, postoperative pain, isoflurane