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Preemptive use of gabapentin in abdominal hysterectomy: a systematic review and meta-analysis.

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Abstract

OBJECTIVE: To examine the evidence of preemptive use of gabapentin in abdominal hysterectomy.

DATA SOURCES: We conducted an electronic based search using the following databases: PubMed, EMBASE, Ovid MEDLINE, ClinicalTrials.gov, and Cochrane Central Register of Controlled Trials. The following medical subject heading terms, keywords, and their combinations were used: "postoperative pain, hysterectomy, gynecologic surgical procedures, gabapentin, preemptive analgesia, and preemptive anesthesia." We manually searched the reference lists of identified studies.

METHODS OF STUDY SELECTION: Randomized controlled trials of women who underwent a total abdominal hysterectomy, with or without bilateral salpingo-oophorectomy, under general anesthesia were examined. Only trials with preoperative dose of gabapentin were included.

TABULATION, INTEGRATION, AND RESULTS: The meta-analysis and systematic review were performed following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statement. Fourteen trials met the inclusion criteria. The pooled data consisted of 448 cases in the gabapentin group and 443 others in the control group. The 24-hour cumulative narcotic consumption and the visual analog scale scores at 24 hours postoperatively were used for postoperative pain assessment. There was a significant decrease in morphine consumption at 24 hours when gabapentin was administered before surgery (from 24.3-55.9 mg to 13.2-42.7 mg, standardized mean difference -0.69) as well before and after surgery (from 25.7-80 mg to 20.3-55 mg, standardized mean difference -1.45), respectively. Metaregression analysis showed that the effect of gabapentin in reducing morphine consumption (compared with placebo) at 24 hours was stronger in the preoperative only group than in the preoperative and postoperative groups. Preemptive gabapentin decreased visual analog scale from 9-42.7 to 2-25.3 (standardized mean difference -1.03, 95% confidence interval [CI] -1.36 to -0.71). Compared with the control group (16.1-96.7%), the rate of nausea was less in the gabapentin group (11.6-70%, relative risk 0.76, 95% CI 0.66-0.88).

CONCLUSION: Preemptive administration of gabapentin is effective in decreasing postoperative pain scores, narcotic consumption, and nausea, and vomiting.

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