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DOES GABAPENTIN REDUCE OPIOID USE POSTOPERATIVELY? ("GROUP STUDY"): A RANDOMIZED CONTROL TRIAL IN WOMEN UNDERGOING RECONSTRUCTIVE PELVIC SURGERY

Hypothesis / aims of study

Opioids are the most common drug of choice for analgesia after hysterectomy, but are associated with significant side effects. A third generation anti-epileptic, gabapentin can be used as an adjunct to decrease opioid requirements. While studies have demonstrated the benefit of a single pre-emptive dose of gabapentin given 1-2 hours before abdominal and vaginal hysterectomies (1, 2), this has not been studied in urogynecologic surgery where vaginal hysterectomy is combined with pelvic floor repair and anti-incontinence procedures. Our objective is to determine the effect of a single pre-emptive dose of gabapentin in women undergoing vaginal hysterectomy with pelvic reconstructive surgeries with or without tension-free vaginal tape (TVT) on postoperative pain control. We hypothesized that pre-emptive gabapentin will significantly reduce the use of postoperative opioid medications.

Study design, materials and methods

After research ethics board approval, a randomized double-blinded placebo controlled trial was commenced in January 2017. All women aged 18 and older presenting to a tertiary referral hospital with prolapse symptoms requiring hysterectomy with pelvic reconstructive surgeries (e.g. anterior/posterior colporrhaphy, uterosacral ligament suspension), with or without TVT, were included. Patients were excluded if they were already on gabapentin, had a proven allergy, sensitivity, or contraindication to gabapentin, or were unable to understand spoken English. Informed consent was obtained from all patients enrolled. As per our institution's anesthesia department, the single dose of pre-emptive gabapentin was 600 mg for those under age 65, and 300 mg for those age 65 and older. Computer-based randomization was used.

In a previous randomized controlled trial examining the effect of gabapentin on postoperative pain medications (in this case, fentanyl bolus of 50 mcg) in patients undergoing vaginal hysterectomy (without pelvic reconstructive surgeries) (2), the total dose was reduced from 23 boluses to 14 boluses. Using an estimated standard deviation of 400 mcg (i.e. 8 boluses), power of 90%, two-tailed alpha of 5%, and Student-t test, the sample size was 17 subjects per group. Given that sedation is a side effect of gabapentin, we also ensured that our study was adequately powered to detect any difference in prolonged stay in the recovery room. With a typical recovery room stay up to 120 minutes, we believed that a 30-minute prolongation would be clinically significant. Using a standard deviation of 30 minutes, power of 90%, two-tailed alpha of 5%, and Student-t test, the final sample size was increased to 22 subjects per group.

The Student t-test was used to compare the difference in opioid consumption in the first 24 hours after surgery, as well as time from the end of surgery to leaving the recovery room, and length of recovery room stay between the groups. Visual analogue scale (VAS) scores for anxiety, drowsiness/sedation, pain, and nausea were compared using the Mann-Whitney U test.

Results

After half the patients were recruited, an interim blinded analysis of 22 patients was performed. There were 10 women in Group A and 12 in Group B. There was no significant difference in age, menopausal status, parity, previous surgeries, allergies, or body mass index. Furthermore, there was no significant difference in general or spinal anesthetic or American Society of Anesthesiologists physical status classification.

There was no difference in total opioid use (converted to oral morphine equivalents) in the first 24 hours after surgery between Groups A and B (27.8 ± 29.0 mg vs. 27.2 ± 19.6 mg, P = 0.952). Further, there was no difference in time from the end of surgery to leaving the operating room (11.3 ± 2.00 min vs. 16.3 ± 10.5 min, P = 0.157), or total time in recovery room (248 ± 136 min vs. 175 ± 70.6 min, P = 0.117). There was also no significant difference in VAS measures of anxiety and drowsiness/sedation upon arrival in the operating room; drowsiness/sedation, pain, and nausea two hours after surgery; and nausea on postoperative day 1 between the two groups.

Interpretation of results

Based on this interim analysis, there does not seem to be a significant difference in post-operative opioid use in women undergoing vaginal hysterectomy with additional pelvic floor repair and/or anti-incontinence procedures who received pre-emptive gabapentin compared to those given a placebo.

Concluding message

As per our institution's dosing policy, a single dose of pre-emptive gabapentin of 300 mg (if age 65 and older) or 600 mg (if younger than age 65) is not significantly different from a placebo in affecting post-operative pain in women undergoing urogynecologic surgery. These data are based on an interim analysis performed after half of the subjects have been recruited.

References

1. Alayed, N., N. Alghanaim, X. Tan, et al. 2014. Preemptive use of gabapentin in abdominal hysterectomy: A systematic review and meta-analysis. Obstetrics and Gynecology 123: 1221-9.
2. Rorarius, G.F., S. Mennander, P. Suominen, et al. 2004. Gabapentin for the prevention of postoperative pain after vaginal hysterectomy. Pain 110: 175-81.

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