Preoperative Pregabalin or Gabapentin for postoperative acute and chronic pain among patients undergoing breast cancer surgery: A systematic review and meta-analysis of randomized controlled trials

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Background: Intense postoperative pain continues to be a significant challenge after breast cancer surgery. Furthermore, chronic pain after breast cancer operations ranges between 43-72%, with a greater prevalence in younger patients[1,2]. Gabapentin and pregabalin are anticonvulsants with anti-hyperalgesic effects that have been used to prevent acute and chronic postoperative pain[3,4]. The aim of this study was to systematically evaluate the use of gabapentin or pregabalin in breast cancer surgery on acute and chronic pain.

Methods:
We conducted a systematic search of MEDLINE, EMBASE, CENTRAL, Web of Science, and ProQuest from inception to 2014. Eligible studies were randomised controlled trials that enrolled patients scheduled to undergo breast cancer surgery, randomly assigned them to preoperative pregabalin/gabapentin or to a placebo group, and collected effects on acute or chronic (≥3 months) post-operative pain. Two reviewers independently agreed on eligibility, independently assessed methodological quality and extracted outcome data. We conducted meta-analyses when possible.

Results: Of the 824 articles found after the systematic search, 10 were eligible for review; 6 assessed gabapentin and 4 pregabalin. Pain scores in recovery (within 1 hour of surgery) were reduced by gabapentin compared to placebo (mean difference (MD) on the 10cm visual analogue scale for pain = -1.49cm, 95% CI -2.71cm to -0.2 6cm, I^2 = 73%; minimally important difference = 1 cm). Gabapentin did not reduce 24 hours pain scores, but did decrease 24-hour morphine consumption (MD= -3.56 mg, 95% CI -5.23 to -1.89, I^2 = 52%). There was no effect of gabapentin on chronic mastectomy pain. Pregabalin decreased morphine consumption in recovery compared to placebo (MD= -4.8 mg, 95% CI -8.76 to -0.83, I^2 = 88%). Although, pregabalin did not reduce pain at 24 hours, it did reduce the rate of chronic mastectomy pain (odds ratio (OR)= 0.31, 95% CI 0.13 to 0.72, I^2 = 85%).

Discussion/conclusion: Preoperative admission of either gabapentin or pregabalin prior to breast cancer surgery may reduce postoperative opioid consumption and acute pain when compared to placebo. Pregabalin may also have an effect on reducing chronic mastectomy pain. Large randomized trials are needed to verify these results.

Reference:

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