Is Gabapentin Effective on Pain Management after Arthroscopic Anterior Cruciate Ligament Reconstruction? A Triple Blinded Randomized Controlled Trial

Article 6, Volume 1, Number 1, Summer 2013, Page 18-22

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Abstract

Background: Acute pain is common after arthroscopic surgeries and it is one of the most important causes of patient dissatisfaction, admission time and increased morbidity. Gabapentin with anti-hyperalgesic effects can play a critical role in pre-emptive analgesia methods. The aim of this study was to assess the efficacy of gabapentin in pain management after surgery and the rate of drug consumption in patients who are candidate for anterior cruciate ligament (ACL) reconstruction arthroscopic surgery.

Methods: In this randomized, triple blind clinical trial, 114 patients who were candidate for arthroscopic ACL reconstruction were divided into two groups of gabapentin (G) and placebo (p), with 57 patients in each group. The intervention group received gabapentin 600 mg and a placebo was administered in control group. Patients received on-demand pethedine for pain management. The primary outcome was pain intensity according to the visual analogue scale (VAS) and the secondary outcome was the amount of opioid consumption and incidence of side effects (including: dizziness, sedation, nausea and vomiting) at 6 and 24 h visits.

Results: The mean pain intensity in G group at both the 6 and 24 hour visits was significantly lower than the control group (Both p <0.0001). Also, patients in the gabapentin group consumed less opioid at both visits in comparison to the placebo group (p <0.001, p =0.032). The incidence rate of sedation, dizziness, nausea and vomiting was similar in both groups.

Conclusion: In arthroscopic ACL reconstruction, administering a preoperative single dose of 600mg gabapentin may decrease both pain intensity and opioid consumption.

Keywords
Gabapentin; Anterior cruciate ligament; Pain intensity; Opioid consumption; Randomized clinical trial