Pregabaline Effect on Patient's Pain Following Total Knee Arthroplasty: A Systematic Review and Meta-analysis of Randomized Clinical Trials

Amir-Mohammad Asgari*, Alireza Hosseini Nejad,
Mohaddeseh Abbasi, Mehrnoosh Gholami

Student Research Committee, Faculty of Medicine, Shahed University, Tehran, Iran

*Corresponding Author:
Student Research Committee, Faculty of Medicine, Shahed University, Tehran, Iran

ABSTRACT

Introduction: Total knee arthroplasty (TKA) is a standard surgical procedure, but it is often associated with significant postoperative pain due to the large incision and prolonged operation time. While efforts to improve surgical techniques and perioperative care may help alleviate pain, many patients undergoing TKA still experience severe pain. The visual analogue scale (VAS) is commonly used to assess the effectiveness of multimodal analgesia in managing postoperative pain. However, despite the use of multimodal approaches, some patients may still experience intractable postoperative pain. The main objective of this study was to analyze the results of randomized controlled trials to assess the effectiveness of pregabalin in reducing postoperative pain after TKA and to further investigate the potential benefits of pregabalin in pain management in this context.

Search Strategy: A search was conducted through PubMed using the keywords "pregabaline" OR "3 isobutyl GABA" [Title] OR "3-(aminomethyl)-5-methyl hexanoic acid" [Title] OR "Lyrica" [Title] AND "total knee arthroplasty" [Title] OR "total knee replacement" [Title], as well as through WOS using the keywords "pregabalin" OR "3 isobutyl GABA" OR "3-(aminomethyl)-5-methyl hexanoic acid" OR "Lyrica" [Title] AND "total knee arthroplasty" OR "total knee replacement" [Title].

Results: After removing duplicates, 33 articles were screened based on their titles and abstracts. Articles published before 2017 were excluded, and three met our inclusion criteria. Two articles were included in a random effects meta-analysis using STATA software. The quality of the studies was assessed using the Rob2 tool, and all studies demonstrated a low risk of bias. The results of VAS scores at 12, 24, and 48 hours were included in the analysis. The overall effects of pregabaline on VAS score at 12, 24, and 48 h were -0.38 ($p = 0.001$), 0.71 ($p = 0.001$), and -0.08 ($p = 0.70$), respectively.

Conclusion and Discussion: In clinical settings, the VAS is often used to assess the effectiveness of pregabalin in relieving postoperative pain. This study measured VAS scores at 12, 24, and 48 hours postoperatively to evaluate postoperative pain. Our findings showed that pregabalin did not significantly reduce VAS scores at any point compared to the control group. his comprehensive analysis of RCTs found that pregabalin was not effective in reducing postoperative pain after TKA.