**EFFICACY OF BUPRENORPHINE AS ADJUVANT IN PERIPHERAL NERVE BLOCKS DURING TOTAL JOINT ARTHOPLASTY: A SYSTEMATIC REVIEW AND NARRATIVE SYNTHESIS OF THE EVIDENCE**

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**ABSTRACT**

**Background**: The duration of peripheral nerve block (PNB) is of critical importance in the pain trajectories of total joint arthroplasties (TJA). Rebound pain increases opioid consumption and worsens the patient's functional outcome.1 Continuous PNBs have a failure rate of 20-50% and they are associated with complications such as systemic local anesthetic toxicity, local infection, nerve irritation, and an increased risk of postoperative falls.2 Among the local anesthetic adjuvant studied, buprenorphine, a partial μ-opioid-receptor agonist has a good efficacy and safety profile.3 The objective of this narrative review is to summarize the evidence about buprenorphine as perineural adjuvant to prolong analgesia after TJA.

**Methods**: In this narrative review, two independent reviewers searched several databases (Pubmed, Embase) for articles related to the use in TJA (hip, knee, shoulder, and ankle) of buprenorphine as a perineural adjuvant in BNP with or without other adjuvant molecules. Articles included were those published through March 2022 and in English.

**Results**: 13 randomized clinical trials (RCT) were identified (Table). 2, 4, 6, 3 for TJA at the hip, knee, and shoulder, respectively. No trials were found regarding ankle arthroplasty. In 6, 5, and 7 RCT, buprenorphine is used for femoral, popliteal sciatic, or interscalene brachial plexus block, respectively. Local anesthetic Perineural buprenorphine is administered in 4 RCTs and in combination with other perineural adjuvants such as epinephrine, clonidine, and dexamethasone in 5 RCTs. In 6 RCTs, buprenorphine is confirmed to be effective in prolonging PNB in TJAs with a time ranging from 120 to 197 minutes.

**Conclusions:** Buprenorphine is effective in prolonging PNBs during TJAs. However, the evidence is still weak and further trials on this topic are needed.

**References**:

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