

Effect of Perioperative Multimodal Analgesia on Postoperative Opioid Consumption and Complications in Elderly Traumatic Hip Fracture Patients: A Systematic Review of Randomised Controlled Trials

Authors : Raheel Shakoor Siddiqui, Shahbaz Malik, Manikandar Srinivas Cheruvu, Sanjay Narayana Murthy, Livio DiMascio

Abstract : Background: elderly traumatic hip fracture patients frequently present to trauma services globally. Rising low energy falls amongst an osteoporotic aging population is the commonest cause for injury. Hip fractures in this population are a major cause for severe pain, morbidity and mortality. The term hip fracture is interchangeable with neck of femur fracture, fractured neck of femur or proximal femur fracture. Hip fracture pain management protocols and guidelines suggest conventional analgesia, nerve block and opioid based treatment as rescue analgesia. There is a current global opioid crisis with overuse, abuse and dependence. Adverse opioid related complications in vulnerable elderly patients further adds to morbidity and mortality. Systematic reviews in literature have evidenced superiority of multimodal analgesia in osteoarthritic primary joint replacements compared to opioids however, this has not yet been conducted for elderly traumatic hip fracture patients. Aims: The primary aim of this systematic review is to provide standardised evidence following Cochrane and PRISMA guidance in determining advantages of perioperative multimodal analgesia over conventional opioid based treatments in elderly traumatic hip fractures. Methods: 5 databases were searched from January 2000-2023 which identified 8 randomised controlled trials and 446 total participants. These trials met defined PICOS eligibility criteria of patient mean age ≥ 65 years presenting with a unilateral traumatic fractured neck of femur for operative intervention. Analgesic intervention with perioperative multimodal analgesia has been compared to conventional opioid based analgesia. Outcomes of interest include, primarily, the change in postoperative opioid consumption within a 0-30 postoperative period and secondarily, the change in postoperative adverse events and complications. A qualitative synthesis has been performed due to clinical heterogeneity and variance amongst trials. Results: GRADE evidence of moderate quality supports perioperative multimodal analgesia leads to a reduction in postoperative opioid consumption however, low quality evidence supports a reduction of adverse effects and complications. Conclusion: Perioperative multimodal analgesia whether used preoperative, intraoperative and/or postoperative leads to a reduction in postoperative opioid consumption for elderly traumatic hip fracture patients. This review recommends the use of perioperative multimodal analgesia as part of hip fracture pain protocols however, caution and clinical judgement should be used as the risk of adverse effects may not be lower.

Keywords : trauma, orthopaedics, hip, fracture, neck of femur fracture, analgesia, multimodal analgesia, opioid

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