

A Comparative Study of Intrathecal Clonidine, Fentanyl and Dexmedetomidine as Adjuvants to 0.5% Hyperbaric Bupivacaine in Abdominal and Lower Extremity Surgeries

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Abstract:

Introduction: Spinal anaesthesia with hyperbaric bupivacaine is widely used for abdominal and lower extremity surgeries. However, the relatively limited duration of sensory and postoperative analgesia may necessitate the use of intrathecal adjuvants. Clonidine and dexmedetomidine, both α_2 -adrenergic agonists, and fentanyl, an opioid agonist, can enhance the quality and duration of spinal anaesthesia

Aims And Objectives: To compare the effects of intrathecal clonidine, fentanyl and dexmedetomidine as adjuvants to 0.5% hyperbaric bupivacaine in patients undergoing abdominal and lower extremity surgeries, with particular emphasis on onset and duration of sensory and motor blockade and duration of postoperative analgesia.

Methods: This prospective comparative study included 60 patients scheduled for elective abdominal and lower extremity surgeries under spinal anaesthesia. Patients were allocated into two groups receiving 0.5% hyperbaric bupivacaine and fentanyl with either clonidine, or dexmedetomidine as an intrathecal adjuvant. The onset and duration of sensory and motor blockade, duration of postoperative analgesia, requirement for rescue analgesia and perioperative adverse effects were assessed and compared among the groups.

Result: Among the studied adjuvants, dexmedetomidine demonstrated a relatively faster onset of action and a longer duration of postoperative analgesia compared with clonidine and fentanyl. Dexmedetomidine was also associated with acceptable haemodynamic stability and no major adverse effects in the reported comparative studies.

Conclusion: Intrathecal clonidine, and dexmedetomidine can effectively enhance the quality and duration of spinal anaesthesia when used as adjuvants to hyperbaric bupivacaine. In this study, dexmedetomidine demonstrated a relatively faster onset and longer postoperative analgesic effect.

Keywords:

Intrathecal clonidine and dexmedetomidine, hemodynamic stability, prolonged analgesia.