

A comparison of continuous femoral nerve block versus continuous epidural analgesia for analgesia in elderly patients with hip fractures

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Uncontrolled acute pain and stress of surgery in elderly patients may cause increased cardiac morbidity and mortality. Early administration of central or peripheral block reduces the incidence of myocardial ischemia and dysrhythmias and the response to stress. **The aim** of this study was to compare the effect of continuous central and peripheral blocks on the incidence of cardiac complications and their analgesic effect in patients with high cardiac risk with hip fracture.

Methods:

Sixty patients with hip fracture with previously defined high per operative cardiac risk according to American Colleague of Cardiologists/American Heart Association guidelines were included and were randomly assigned to two groups of 30 patients: Femoral Nerve Block group – patients with continuous femoral nerve block with bupivacaine 0,25% - 0,1ml/h; and Epidural Catheters group - patients with a continuous epidural analgesia with bupivacaine 0,125% - 5ml/h and fentanyl 3µg/ml. As an end point of the study were registered the incidence of cardiac events in both groups: cardiac death, myocardial infarction, congestive heart failure, unstable angina and new-onset atrial fibrillation. In all patients was determined pain intensity, the side effects as well as the time required for performing of the block.

The role of regional nerve blockade for hip fracture:

Systemic analgesia poses significant challenges among physiologically frail, elderly trauma patients. Thus, there is growing interest in the role of regional anaesthesia and analgesia, particularly for this vulnerable patient population (for review, see 45). There is mounting evidence to support the use of regional nerve blocks for acute pain in the elderly, associated with a fractured hip. A recent Cochrane review supports the use of regional nerve blocks to reduce acute pain after hip fracture, with high - quality evidence showing that regional blockade reduces pain on movement within 30 min of block placement 46.

Femoral nerve blocks have been shown to effectively reduce pain associated with hip fracture, in a manner that is site - specific, rapid in onset and reduces the need for opiates and breakthrough analgesia. Benefits beyond effective analgesia have also been suggested, including reduced incidence of delirium, reduced hospital stay, decreased mortality, as well as ease of nerve block administration in ED or even the pre - hospital setting.

Results:

There is no significant difference between two kind of blocks on the incidence of per operative cardiac events in patients with high per operative cardiac risk for surgery for hip fracture (FNB group 33,3% vs. 23,3% in EDC group, for $p=0,05$). The both type of blocks provide effective analgesia in all times as well as low number of side effects. Femoral nerve block needs significantly shorter time for performing the block vs. epidural block.

Conclusion:

Early administration of continuous epidural analgesia vs. continuous femoral nerve block in patients with high cardiac risk with hip fracture show no significant difference on incidence of cardiac morbidity and mortality and provide effective pre- and post-operative analgesia with minimal side effects.

Key words: epidural analgesia, femoral nerve block, perioperative cardiac risc, elderly, hip fracture.