

Low Dose Bupivacaine versus Prilocaine Regarding Hemodynamic Stability and Safety in Geriatrics: A Randomized, Double-Blind Comparative Study

Abstract:

Background:

The most common adverse event of spinal anesthesia is post-spinal anesthesia hypotension, with an incidence of 16% to 33%. This study aimed to compare the impact of bupivacaine and prilocaine on hemodynamic stability and safety during orthopedic operations in older individuals.

Methods:

A double-blind randomized controlled trial was done on a group of 100 cases who were scheduled to have elective knee and below-knee orthopedic procedures at Fayoum University Hospital. The patients were categorized into two equal groups (50 cases in each group): bupivacaine group who had been administered a low dose of 7.5 milligrams of hyperbaric bupivacaine 0.5%, and prilocaine group who had been given a low dose of 40 milligrams of intrathecal hyperbaric prilocaine, 2%.

Results:

A statistically insignificant variance has been observed among examined groups according to systolic blood pressure (SBP), diastolic blood pressure (DBP), mean arterial pressure (MAP) at baseline, 10, 20, 30, 60, 90, and 120 minutes ($P > 0.05$), while there was significant decrease in bupivacaine group than prilocaine group regarding SBP and MAP after 5 min ($P = 0.007$, $P = 0.001$ respectively); moreover, there was statistically significant variance among the examined groups according to intensity of sensory block at 90 and 120 min ($P = 0.013$, $P = 0.028$ respectively),

and motor block at 60, 90 and 120 min ($P = 0.025$, $P < 0.001$, $P < 0.001$ respectively). There was statistical significance regarding atropine and ephedrine use with lower doses in the prilocaine group ($P < 0.05$). The two study groups had a statistically significant variance in the return of sensory, motor, and bladder functions ($P < 0.001$).

Conclusions:

Concerning lower doses of atropine and ephedrine and faster recovery of sensory, motor, and urinary bladder function, the use of prilocaine for spinal anesthesia seems to be preferable to bupivacaine, especially in geriatrics.