Effect of Ultrasound-Guided Fascia Iliaca Block Pretreatment on Hemodynamic Stability During Combined Spinal–Epidural Anesthesia in Older Patients with Lower Extremity Fractures: A Randomized Controlled Trial

Objective:

To evaluate whether ultrasound-guided fascia iliaca block (FIB) pretreatment improves hemodynamic stability during combined spinal–epidural anesthesia (CSEA) in older patients with lower extremity fractures.

Methods:

In this prospective randomized controlled trial, patients aged ⩾65 years undergoing lower extremity fracture surgery under CSEA were randomly assigned to receive ultrasound-guided FIB pretreatment (FIB group) or standard care (control group). Mean arterial pressure (MAP) and heart rate were continuously monitored. The primary outcome was the incidence of intraoperative hypotension, defined as MAP <65 mmHg or a ⩾20% decrease from baseline. Secondary outcomes included vasopressor requirements, hemodynamic variability, intraoperative analgesic consumption, and block-related adverse events. Analyses were performed on an intention-to-treat basis.

Results:

A total of 96 patients were randomized (FIB group, n = 48; control group, n = 48). Intraoperative hypotension occurred less frequently in the FIB group than in the control group (29.2% vs. 52.1%, $p < 0.05$). The FIB group required fewer vasopressor interventions (median doses 1 [IQR 0–2] vs. 3 [IQR 1–4], $p < 0.01$) and demonstrated reduced MAP variability ($p < 0.05$). Intraoperative opioid consumption was lower in the FIB group ($p < 0.01$). No block-related serious adverse events were observed.

Conclusions:

Ultrasound-guided FIB pretreatment was associated with improved hemodynamic stability during CSEA in older patients with lower extremity fractures, as reflected by a lower incidence of hypotension and reduced vasopressor requirements. This strategy may represent a useful adjunct for perioperative hemodynamic management in this high-risk population.

Keywords:

fascia iliaca block; ultrasound guidance; combined spinal–epidural anesthesia; hemodynamic stability; older patients; randomized controlled trial