

Isobaric forms of ropivacaine vs. bupivacaine in lower abdominal surgeries: a hospital-based, prospective, comparative study

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Abstract

We aimed to assess whether ropivacaine (0.75%; 22.5 mg) can replace bupivacaine (0.5%; 15 mg) as a better intrathecal anesthetic in lower abdominal surgery. In this hospital-based, single-blind, randomized, prospective, comparative study, 100 patients of either sex, aged between 18 and 70 years, weighing 40–80 kg, with American Society of Anesthesiologists physical status 1 and 2, and undergoing lower abdominal surgery were randomly allocated into two groups to receive intrathecal isobaric bupivacaine 0.5% 3 mL (15 mg) or ropivacaine 0.75% 3 mL (22.5 mg). In the intraoperative period, the onset, efficacy, duration, and regression of sensory and motor blockade and the quality of anesthesia and hemodynamic effects were observed at regular intervals. The ropivacaine and bupivacaine groups were comparable for demographic parameters. The duration of onset of sensory and motor blocks was significantly shorter in the bupivacaine group ($P < 0.01$). In the ropivacaine group, a faster recovery from sensory block ($P = 0.02$) and higher segmental height [thoracic (T)10 and T8] were achieved ($P < 0.01$). Bradycardia and hypotension were insignificant in the ropivacaine group ($P > 0.05$). Isobaric ropivacaine is a better spinal anesthetic in lower abdominal surgeries as it provides faster recovery from sensory block and a higher level of segmental sensory block with fewer side-effects.

Key words: bupivacaine; hemodynamic effects; intrathecal anesthetic; isobaric forms; lower abdominal surgery; motor block; ropivacaine; segmental height; sensory block; spinal anesthesia

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