

Efficacy of Ultrasonography Guided Erector Spinae Plane Block for Perioperative Analgesia in Percutaneous Nephrolithotomy

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ABSTRACT

BACKGROUND

Erector spinae block is a paraspinal, fascial block that targets the ventral, dorsal rami and rami communications of spinal nerves. The present study was conducted to know the efficacy of ultrasound guided erector spinae block (ESP) block in preoperative analgesia among patients with percutaneous nephrolithotomy (PCNL) attending a tertiary care hospital.

METHODS

The study was carried out on 596 patients from Jan 2015 to Jan 2020 who were indicated for PCNL. They were divided into two groups, group A (ESP = 373) and group B (intravenous-IV analgesia = 273). In the group A (N = 373), after induction of general anaesthesia, ESP block with 0.5 % bupivacaine and 1 / 200,000 epinephrine (single shot) was given at lower thoracic level (T10 - 12) and IV analgesia was given in group B. All patients were monitored for supplemental opioid requirement intraoperatively as assessed by their haemodynamic status (baseline change in heart rate-HR & mean arterial blood pressure-MAP). The primary outcome of the study was consumption of tramadol in 24 hrs. Pain assessment every 2-hour pre- and post-operatively using numerical rating (NR) scale was considered as the secondary outcome. Categorical outcomes were compared between study groups using chi-square test / Fisher's exact test; P-value of < 0.05 was considered statistically significant using IBM SPSS.

RESULTS

Most of them in group A were free of pain for 24 hours postoperatively with numerical rating scale score of < 3 and did not require any postop rescue analgesics. Only 1 patient showed numerical rating scale score of 4 around 16 hrs. after the surgery and was given tramadol. Supplemental opioid analgesic was not required by any of the patients during the entire intraoperative period.

CONCLUSIONS

ESP block is a favourable technique that results in very good analgesic effect preoperatively and also lessens the use of intravenous opioids and other analgesics.

KEYWORDS

ESP Block, PCNL Surgery, Tramadol, Kidney Stones

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