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Effect Of Local Anaesthetic Infiltration On Postoperative Pain After Laparoscopic Cholecystectomy: Randomized Clinical Trial

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Background : Local anaesthetic infiltration is widely used to reduce pain after laparoscopic cholecystectomy (LC). This trial evaluated the effect of depth of local anaesthetic infiltration on postoperative pain reduction after LC.

Methods : Patients undergoing elective LC between March 2019 and February 2020 were randomized into no infiltration, subcutaneous infiltration, and rectus sheath infiltration using bupivacaine. The primary outcome was 24-h postoperative cumulative morphine use, and the secondary outcomes were mean 24-h Numerical Rating Scale (NRS) for pain, and nausea, and vomiting. Subgroups were compared and multivariable analyses were performed.

Results : Out of 170 eligible patients, 162 were selected and 150 patients were analysed: 48 in the no-infiltration group, 50 in the subcutaneous infiltration group, and 52 in the rectus sheath infiltration group. The groups had similar clinical features, although mean BMI was higher in the subcutaneous infiltration group (P = 0.001). The 24-h cumulative morphine use in the rectus sheath infiltration group was significantly lower than in the no-infiltration group (P = 0.043), but no difference was observed between the subcutaneous infiltration groups (P = 0.999). One hour after surgery, the rectus sheath infiltration group had a significantly lower NRS score than the no-infiltration and subcutaneous infiltration groups respectively (P = 0.006 and P = 0.031); however, the score did not differ among the three groups at any of the time points from 2 h after the surgery. The incidence of nausea or vomiting was comparable among the three groups. Multivariable analysis documented that a lower dose of morphine use was associated with rectus sheath infiltration (P = 0.004) and diabetes (P = 0.001); whereas, increased morphine use was associate with age (P = 0.040) and a longer duration of surgery (P = 0.007).

Conclusions : Local anaesthetic infiltration into the rectus sheath reduced postoperative cumulative morphine use and the immediate NRS score in patients undergoing LC; however, the pain scores were comparable 2 h after surgery.

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