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Enhanced recovery after spinal surgery protocol versus conventional care in non-insulin diabetic patients: A prospective randomized study

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Background: The Enhanced Recovery after Surgery (ERAS) approach was established in many surgical specialties. This prospective, randomized, single-blinded clinical study was designed to evaluate the efficacy of (ERAS) protocol on quality of recovery after surgery in non-insulin dependent diabetic patients undergoing lumbar decompression surgery.

Patients: 72 patients aged 30 to 65 years of ASA II-III requesting general anesthesia for elective lumbar decompressive surgery were randomly assigned to 1 of 2 equal groups receiving either general anesthesia with ERAS protocol in group E or conventional general anesthesia in group C. Quality of recovery after surgery QOR-40 score, length of hospital stay, postoperative pain score using the visual analogue scale (VAS), perioperative opioid consumption, time to early ambulation, serum markers of stress response, and possible perioperative complications were recorded.

Results: QOR-40 scores were significantly higher in group E in post anesthesia care unit (PACU), postoperative day 1 (POD1), and postoperative day 2 (POD2) ($P = 0.015$, 0.041 and 0.048 , respectively). VAS at 0,2,4,6, and 8 hrs postoperatively were significantly lower in group E ($P = 0.011$, 0.035 , 0.042 , 0.022 and 0.005 , respectively). Intraoperative fentanyl and postoperative nalbuphine requirements were significantly lower in group E ($P = 0.004$, and 0.0001 , respectively). Time to first postoperative analgesic requirement was significantly shorter in group E ($P = 0.0001$). Time to early ambulation was significantly lower in group E ($P = 0.013$). Both CRP and interleukin-6 were significantly lower at POD2 in group E ($P = 0.001$, and 0.017 , respectively). There was no significant difference between groups in length of hospital stay and intraoperative insulin requirements ($P=0.062$, and

0.347 , respectively).

Conclusions: Enhanced recovery protocol combined with general anesthesia in non-insulin diabetic patients who are undergoing lumbar decompressive surgery improves quality of recovery after surgery, reduces perioperative opioid consumption, and shorten time to early ambulation.

Keywords: Enhanced, recovery, spinal, surgery, conventional, diabetic.

Recent Publication

1. Soffin EM, Beckman JD, Tseng A, Zhong H, Huang RC, Urban M, Guheen CR, Kim HJ, Cammisa FP, Nejm JA, Schwab FJ, Armendi IF, Memtsoudis SG. Enhanced Recovery after Lumbar Spine Fusion: A Randomized Controlled Trial to Assess the Quality of Patient Recovery. *Anesthesiology*. 2020 Aug;133(2):350-363.
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3. Enhanced recovery after surgery (ERAS)—concepts, components, and application to spine surgery. Wainwright TW, Wang MY, Immins T, Middleton RG. *Semin Spine Surg*. 2018;30:104–110.

Biography

Sarah M Elgamal is an assistant lecturer at the department of anesthesia and surgical intensive care, faculty of medicine, Alexandria University, Egypt. She is a diplomate at European society of anesthesiology and intensive care since 2020. She got her master's degree in anesthesia and surgical intensive care and she is about to finish her doctorate of philosophy in anesthesia and surgical intensive care.

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