Effect of intravenous lignocaine on perioperative stress response and post-surgical ileus in elective open abdominal surgeries: a double-blind randomized controlled trial

Abstract

Background: Perioperative stress response can be detrimental if excessive and prolonged. Intravenous (i.v.) lignocaine, while being an effective analgesic, has the added benefit of anti-inflammatory activity. This study was done to assess the effect of i.v. lignocaine on operative stress response and post-surgical ileus after elective open abdominal surgeries.

Methods: Patients (n = 134) were randomized into two groups (n = 67 each) to receive an i.v. infusion of lignocaine (group L) or saline (group S) as a bolus of 1.5 mg/kg at intubation followed by an infusion of 1.5 mg/kg/h throughout the surgery until 1 h post-surgery. Total leukocyte count (TLC), C-reactive protein (CRP) and interleukin-6 (IL-6) levels immediately and 24 h after surgery were compared with preoperative levels. Time to first passage of flatus and stools post-operatively was noted. Post-operative pain scores, analgesic requirements, and incidence of post-operative nausea and vomiting (PONV) were assessed in the two groups.

Results: Post-operative surge in TLC, CRP and IL-6 was attenuated in group L as compared to group S ($P < 0.001$, 0.018, <0.001). Time to passage of flatus and stools was earlier in group L ($P = 0.04$, 0.02). PONV was lesser in group L at 6 and 18 h post-surgery (<0.001, 0.28). Post-operative pain scores and post-operative morphine requirement were significantly less in group L at each point of time post-operatively ($P < 0.001$, <0.001).

Conclusion: Perioperative i.v. lignocaine infusion attenuates the operative stress response, provides effective analgesia and reduces the need for opioids post-operatively. Through these effects, it reduces post-operative ileus and the incidence of PONV.