

DETERMINANTS OF POSTOPERATIVE PAIN IN CARDIOESOPHAGEAL CANCER SURGERY

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Abstract. *Postoperative pain syndrome (POPS) remains a significant clinical challenge in patients undergoing surgery for cardioesophageal cancer (CEC). Despite the implementation of multimodal analgesia protocols, adequate pain control is not consistently achieved. This study aimed to comparatively assess postoperative pain intensity depending on the type of surgical access and tumor characteristics in patients with CEC. Eighty-five patients who underwent open surgical treatment were evaluated using the Numeric Rating Scale (NRS). Pain intensity was analyzed in relation to surgical approach, tumor phenotype, disease stage, and demographic factors. The highest pain intensity was observed in patients who underwent thoracophrenicolaparotomy. Multimodal analgesia improved pain control; however, pain levels exceeded the adequate analgesia threshold (>4 points) in a substantial proportion of patients. The findings indicate that postoperative pain intensity is primarily associated with the extent of surgical trauma rather than gender or age factors, highlighting the need for optimization of regional analgesia techniques in oncologic surgery.*

Keywords: *Cardioesophageal cancer, postoperative pain syndrome, multimodal analgesia, thoracophrenicolaparotomy, thoracotomy, Numeric Rating Scale, oncology surgery, analgesia effectiveness.*

Aim of the study. To conduct a comparative analysis of postoperative pain intensity in patients with cardioesophageal cancer depending on surgical access, tumor phenotype, and clinical characteristics, and to evaluate the effectiveness of multimodal analgesia.

Materials and Methods. A total of 85 patients with cardioesophageal cancer who underwent open surgical treatment were included in the study (57 men, 38 women; mean age 56.4 ± 0.6 years). According to ASA classification, 49.1% had grade IV risk and 44.5% had grade III risk. The majority of tumors were adenocarcinomas (92.9%), while 7.1% were squamous cell carcinomas.

Patients were divided into two groups based on surgical access: thoracophrenicolaparotomy (n=45) and combined thoracotomy with laparotomy (n=40). Postoperative pain intensity was assessed using the Numeric Rating Scale (0–10 points). Adequate analgesia was defined as pain ≤ 4 points. Multimodal analgesia included nonsteroidal anti-inflammatory drugs (ketonal, analgin) combined with opioid analgesics (tramadol or morphine). In 13 patients, continuous regional analgesia with 0.5% novocaine infusion via microirrigator was applied.

Statistical analysis was performed using descriptive methods, and results were interpreted comparatively across surgical and clinical variables.

Results. According to national hospital statistics (2023), more than 8,000 oncology patients annually require palliative care in Uzbekistan, highlighting the ongoing challenge of chronic pain management. Postoperative pain syndrome (POPS) remains a significant clinical issue in oncologic surgery despite the implementation of evidence-based multimodal analgesia.

The study included 85 patients with cardioesophageal cancer (mean age 56.4 ± 0.6 years). Multimodal postoperative analgesia combined NSAIDs and opioids; 13 patients additionally received continuous regional analgesia. Pain intensity was assessed using the Numeric Rating Scale (NRS). On the first postoperative day, pain ranged from 2 to 8 points.

The highest pain intensity was observed after thoracophrenicolaparotomy (mean 5 points; 91.1% of patients), compared to thoracotomy plus laparotomy (mean 4.1 points; 47.5%). Overall mean pain intensity was 4.6 points. Pain levels exceeded the adequate analgesia threshold (>4 points) in the majority of cases. A significant association between pain intensity and surgical volume was identified, particularly in stage III patients undergoing extended procedures.

Gender and age did not significantly influence pain intensity. However, regional analgesic perfusion reduced pain to ≤ 2 points and decreased opioid requirements.

Conclusion. Postoperative pain intensity in cardioesophageal cancer is primarily determined by the extent of surgical trauma rather than demographic factors. Thoracophrenicolaparotomy is associated with the highest risk of severe POPS. Systematic NRS monitoring and optimization of regional analgesia are essential for improving postoperative pain control and enhancing rehabilitation outcomes.