

Acute Post-Operative Pain Impact on Outcome of Patients after Heart Surgery

*Ardis Berzins*¹, *Baiba Arklina*², *Eva Strike*²

¹ *Rīga Stradiņš University, Faculty of Medicine, Latvia*

² *Rīga Stradiņš University, Department of Anaesthesiology and
Intensive Care, Latvia*

Introduction. A number of studies suggest that ineffective management of acute post-operative pain leads to various complications, for example, reduction in vital capacity and alveolar ventilation, which may result in prolonged mechanical ventilation, ICU and hospital length of stay (LOS). These complications may be prevented by an effective post-operative pain control system. Detailed post-operative assessment of pain level should be a component of effective postoperative management.

Aim, Materials and Methods. The aim of the study is to determine the impact of pain levels on the early post-operative period in patients with sternotomic approach.

A prospective observational study included 52 patients after heart surgery that required a sternotomic approach and post-operative intensive care from August to December 2016. Patient pain level was assessed according to visual analogue scale (VAS), cognitive function was assessed with Richmond agitation-sedation scale (RAS) and mini mental state examination (MMSE), taking in account their vital sign trends and pain management. Assessment was performed within 24 hours after extubation. For statistical analysis IBM SPSS Statistics was used.

Results. 46 of 52 patients were included in observation. The gender distribution was equal (n = 23). Within the observational group, 37 % (n = 17) of the patients had valve replacement surgery, 41.3 % (n = 19) had coronary artery bypass surgery, and 21.7 % (n = 10) of the patients underwent both of them. Multi-modal approach of post-operative pain management with phentanyl, paracetamol intravenously, as well as various non-opioid analgesics within 24 hours after extubation were used, 74 % (n = 34) of the patients received two non-opioid analgesics and 26 % (n = 12) received more than two non-opioid analgesics. Mean VAS scores 2, 4, 6 and 24 hours after extubation were 4.94, 4.48, 4.41 and 3.98, respectively. There was a significant decrease in pain levels within the observed time frame (p = 0.006). Pain intensity 2 hours after extubation was significantly higher than 24 hours after extubation (p = 0.013). A significant increase in diastolic blood pressure (p = 0.02) and decrease in respiratory rate (p = 0.018) was noted.

Conclusions. Patients after open heart surgery experience moderate intensity pain that affects their respiratory function and hemodynamics. Multi-modal approach to pain management improves patient analgesia. A detailed, frequent post-operative pain assessment aids the multi-modal approach to pain management and improves patient outcome.