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### Pain Management after Cardiac Surgery: Are We Underestimating Post Sternotomy Pain?

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#### Abstract

**Objective:** Good pain management can improve the outcome of patient care after cardiac surgery. The intensity of pain after cardiac surgery is often underrated. Inadequate pain control can result in increased morbidity and length of hospital stay as well as lead to chronic pain. Therefore, the authors conducted a study to identify the prevalence and risk factors of moderate to severe pain after cardiac surgery including treatment and complication.

**Material and Method:** The present study was prospectively performed in the patients undergoing cardiac surgery with median sternotomy in Siriraj Hospital, a tertiary care center, between July 2009 and November 2010. Pain was assessed by numerical rating scale (NRS, 0-10) whilst NRS  $\geq 4$  was defined as moderate to severe pain. Pain score was recorded until 48 hours after surgery. Demographic data, history of previous cardiac and non-cardiac surgery, chronic pain history, details of the operation, and intra-and postoperative analgesia were recorded, including complication of pain treatment. In addition, pain expectation and experience were compared and the patient satisfaction was evaluated.

**Results:** Two hundred ninety patients were enrolled, 95.5% ASA physical status III, with mean duration of surgery 243.8 minutes (95-600) and cardiopulmonary bypass time 112.8 minutes (33-500). The prevalence of moderate to severe pain in the patients after cardiac surgery was 61.4%. The duration of cardiopulmonary bypass less than 60 minutes decreased numbers of patients with moderate to severe pain with adjusted OR ratio of 0.40, 95% CI = 0.16, 1.004, ( $p < 0.001$ ). Complications of pain treatment were respiratory depression (0.7%), nausea (25.6%), vomiting (11.4%), pruritus (4.1%), and urinary retention (0.3%). The majority of the patients were satisfied with pain control (81.4%).

**Conclusion:** The prevalence of moderate to severe pain in the present study was high and duration of cardiopulmonary bypass was the only factor affected. Still, most patients were satisfied with the pain treatment.

**Keywords:** Postoperative pain, Sternotomy, Cardiac surgery

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