

## Comparison Between Ketamine and Dexmedetomidine in Achieving Opioid Sparing Sedoanalgesia in Patients Following Open Heart Surgery: A Randomized Clinical Trial

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### ABSTRACT

**Background:** Opioid-sparing sedoanalgesia relies on non-opioid multimodal analgesic and sedative agents. It is being developed to decrease or eliminate opioid use for the management of acute postoperative pain to avoid opioid complications. This study aimed to compare ketamine and dexmedetomidine for their efficiency and safety in inducing opioid-sparing sedoanalgesia in patients following open heart surgery.

**Methods:** Ninety adult cardiac patients who underwent open heart surgery were enrolled. They were randomly divided into three groups. Group D received a dexmedetomidine infusion of 0.1–0.2 µg/kg/hour, group K received a ketamine infusion of 1–2 µg/kg/min while group C received a placebo as a control group. Drugs were given after the operation in the surgical intensive care unit. Total postoperative opioid consumption was the primary outcome. Richmond agitation sedation scale, visual analog pain scale, time to first analgesic request, patient satisfaction, and incidence of any complications were recorded.

**Results:** In this study, we found that the median (interquartile range) postoperative opioid consumption was significantly lower in groups D and K than in group C (156 (40), 140 (83), 185 (110);  $p < 0.001$ ). Richmond agitation sedation scale was statistically significant until 6 hours postoperative ( $p$ -value:  $< 0.05$ ). Patient satisfaction score was higher in groups D and K than in group C ( $p$ -value: 0.005). On the other side, there is no statistically significant difference between the three study groups regarding time to first analgesic request (minutes) ( $p$ -value: 0.064) or visual analog pain scale ( $p$ -value:  $> 0.05$ ). Incidence of complications was highly significant between the study groups ( $p$ -value:  $< 0.001$ ).