

# Effects of low dose dexmedetomidine infusion on haemodynamic stress response, sedation and post-operative analgesia requirement in patients undergoing laparoscopic Surgeries.

## ABSTRACT

**AIM AND BACKGROUND** - Dexmedetomidine is a selective alpha-2 agonist which has sedative and analgesic properties. It is a useful drug to blunt the haemodynamic stress response of the patients undergoing stress related surgeries.

The aim of my study was to evaluate the use of this drug in comparing the two low dose infusions (0.2 mic/kg/hour and 0.4mic/kg/hour ) and a control group using normal saline . To compare the effects of low dose 0.2 mic/kg/hr & 0.4 mic/kg/hr Dexmedetomidine infusion on

- 1) Haemodynamic stress response to maneuvers like;
  - Laryngoscopy
  - Endotracheal intubation
  - Creation of pneumoperitoneum

➤ Extubation

2) Sedation

3) The postoperative analgesia requirement in patients undergoing laparoscopic surgeries.

**METHODS-** 60 patients were taken of American society of anaesthesiologist physical status (ASAPS ) I and II , undergoing laparoscopic surgeries. 3 groups were taken ,each of 20 patients .Group J receiving dexmedetomidine infusion of 0.4 mic/kg/hr , group K receiving dexmedetomidine infusion of 0.2 mic/kg/hr and group L (control group) receiving normal saline infusion only. Parameters were noted such as MAP (Mean arterial pressure ), PR ( Pulse Rate) , oxygen saturation .The drug infusion was started 15 minutes before induction till the specimen was taken out . The Post operative requirement and rescue analgesia were also noted.The results were statistically analyse using SPSS v 16.0 . ANOVA test for continuous variable ( p- value) , post hog test for intergroup comparison and chi square tests for discrete values were applied.

**RESULTS-** Haemodynamic stress response to laryngoscopy, intubation, creation of pneumoperitoneum, release of pneumoperitoneum, and extubation seen in groups J receiving 0.4 mic/kg/hr and group K receiving 0.2 mic/kg/hour was attenuated. Comparing the two groups the hemodynamic stress response was significantly reduced in group J receiving 0.4 mic/kg/hr, with no postoperative adverse effects like rebound hypotension, bradycardia, vomiting and headache. Postoperative analgesia for 24 hours and rescue analgesia was much less in group J receiving 0.4 mic/kg/hr compared to group K receiving 0.2 mic/kg/hr.

Whereas in the control group L receiving Normal saline infusion the hemodynamic stress response was seen to laryngoscopy, intubation, creation of pneumoperitoneum, release of pneumoperitoneum and extubation. Less postoperative analgesia was seen as rescue analgesia was given in more dosage amount as compared to the groups receiving dexmedetomidine.

**CONCLUSION-** Low dose of dexmedetomidine of **0.4mic/kg/hr** compared to 0.2 mic/kg/hr was found to be better in maintenance of the haemodynamic stability in patients undergoing laparoscopic surgeries. Moreover the post operative requirement of rescue analgesics is also significantly lower in **0.4 mic/kg/hr** (group j) than 0.2 mic/kg/hr.(group K ).

**KEY WORDS**- dexmedetomidine, laparoscopic surgeries , hemodynamic stress response .