

ABSTRACT

BACKGROUND

Most patients with degenerative disc disease have back pain, radicular pain of chronic nature. Most of them will be on regular pain medications, including opioids and their adjuvants like dexmedetomidine, clonidine, gabapentin, pregabalin, ketamine, tricyclic antidepressants. Providing opioid-free/sparing anaesthesia is a challenging task in this group of patients. Inadequate pain management can prolong postoperative recovery. Among the 179 surgical procedures, lumbar spinal instrumentation procedures represented three of the top six surgeries with the highest pain scores. Spine surgery is associated with frequent, persistent postsurgical pain. Its incidence varies from 5 to 75 %. Hence providing good analgesia using multimodal analgesia techniques is of paramount importance for reducing medication-induced complications.

OBJECTIVES

PRIMARY OBJECTIVE

The effect of Anaesthesia technique (opioid sparing/opioid based) on DREAM time (Time taken to **D**rink, **E**at, **A**Mbulate).

- **Secondary Objectives**

- Numeric Rating Score (NRS) score at 2,6,8,12,18, 24 hours.

Opioid and ketamine induced side effects – PONV, Post-operative ileus, sedation, Nystagmus, Hallucination.

- Time taken to receive the first dose of rescue analgesia
- Total dose of rescue analgesics received during the first 24 hours
- Duration of hospital stay after surgery
- Post-operative hemodynamics (HR, BP) at 2,6,8,12,18,24 hours Patient satisfaction at 24 hours.

TYPE OF STUDY:

This is double-blinded, randomized controlled clinical study. Patient, and the principal investigator who was doing the postoperative data collection were blinded to the study intervention.

METHOD OF RANDOMISATION:

Patients were allocated equally to two arms. To get the equal allocation, the block randomization technique was done. The randomization schedule was generated using SAS software version 9.4 at the Clinical Data Management Centre, Biostatistics Dept.

Method of allocation concealment:

Allocation concealment was done by an opaque envelope method

Blinding and masking:

This study is a double blinded study. The principal investigator and the patient and the nurse who are assessing the postoperative recovery were blinded to the study intervention. The principal investigator was involved only in following up the patients in ward, not involved in managing the patient in the operating room.

The present study was conducted in Christian Medical college , vellore in department of Neurosurgery after obtaining IRB and ethics committee approval (IRB minute no – 12636) and written and informed consent from patients .

RESULTS:

The study was conducted after the institutional research board (IRB) approval (IRB - 12636) and after registering into the clinical trial registry of India (CTRI/2020/06/025924). A total of 74 patients were screened for this study, out of which, 67 patients met the inclusion criteria and they were recruited into the study after an informed patient consent. There were randomly allocated into opioid sparing group or opioid based group. Out of 67, 35 patients who received opioid sparing technique and the rest 32 received Opioid based technique. All the patient's data were taken for analysis. The data were divided into three variables -i) preoperative ii) intraoperative iii) postoperative variable.

CONCLUSION

1. Administration of opioid-sparing anaesthesia using pregabalin, low dose ketamine and intramuscular administration of ropivacaine helps in early ambulation in patients undergoing 1-3 levels of lumbar laminectomy with or without discectomy.
2. Administration of opioid-sparing anaesthesia prolongs the time to receive the first rescue analgesia. It also reduces the number of patients receiving rescue analgesia.
3. Opioid sparing Anaesthesia helps in reducing opioid-induced postoperative complications such as PONV and abdominal distention without increasing the incidence of over sedation, nystagmus and hallucination.
4. Providing Anaesthesia using opioid-sparing techniques improves the patients' satisfaction significantly.
5. Analgesia produced by the opioid-sparing technique is non-inferior to opioid-based technique.