

## BACKGROUND:

Neuraxial regional anaesthesia is the anaesthesia of choice for the patients undergoing surgeries below the umbilical region. Epidural block has the advantage of extending analgesia to the post operative period and has better hemodynamic profile. Adjuvants added to the local anaesthetics reduces the dose of the local anaesthetics and at the same time maintains or prolongs the duration of the desired effects of sensory and motor block. It also avoids the side effects of the adjuvants when alone administered intravenously. Several adjuvants have been tried and compared, the most common one includes adrenaline and opioids. Fentanyl is the synthetic lipophilic, opioid that is been used for a long time as an adjuvant. On the other side, dexmedetomidine is a recently emerging  $\alpha_2$  agonist as an adjuvant to epidural local anaesthetics.

## METHODS

In this study we compared the adjuvants fentanyl and dexmedetomidine when administered with ropivacaine for epidural anaesthesia for infra umbilical surgeries in ASA I and II patients. A total of 120 patients were randomly allocated into two groups with Group I: Patients receiving 0.75% Ropivacaine 18ml with fentanyl 25 $\mu$ g (0.25 ml) and Group II: Patients receiving 0.75% Ropivacaine 18ml with Dexmedetomidine 50  $\mu$ g (0.5 ml).

## RESULTS

Time of onset of the sensory block to T<sub>10</sub> was earlier in the dexmedetomidine ropivacaine (10.72  $\pm$  2.681minutes) group than with fentanyl ropivacaine group (12.47 $\pm$ 1.961minutes). Time taken to achieve the maximum sensory block was earlier in the dexmedetomidine ropivacaine group (15.88 $\pm$  3.494 minutes) than with fentanyl ropivacaine group (18.12 $\pm$  3.043 minutes).Time for two segmental regression was delayed in the dexmedetomidine ropivacaine group (152.23  $\pm$ 20.062 minutes) than with

fentanyl ropivacaine group ( $135.02 \pm 13.226$  minutes). Time for sensory regression to  $L_1$  was delayed in the dexmedetomidine ropivacaine group ( $396.00 \pm 25.475$  minutes) than with fentanyl ropivacaine group ( $316.42 \pm 25.229$  minutes). Time of onset of the pain was delayed in the dexmedetomidine ropivacaine group ( $396.00 \pm 25.475$  minutes) than with fentanyl ropivacaine group ( $316.42 \pm 25.229$  minutes). Time of demand for the first rescue analgesics was delayed in the dexmedetomidine ropivacaine group ( $409.58 \pm 20.363$  minutes) than with fentanyl ropivacaine group ( $325.50 \pm 22.898$  minutes). The time taken to achieve the maximum motor block was earlier in the dexmedetomidine ropivacaine group ( $23.92 \pm 4.792$ ) than with fentanyl ropivacaine group ( $29.17 \pm 6.255$ ). The time for complete return of the motor block was delayed in the dexmedetomidine ropivacaine group ( $202.23 \pm 20.016$ ) than with fentanyl ropivacaine group ( $185.02 \pm 13.226$ ). Significant fall in systolic blood pressure, diastolic blood pressure and mean arterial pressure was noted in ropivacaine and dexmedetomidine group than with fentanyl ropivacaine group. Fall in pulse rate was significant in dexmedetomidine ropivacaine group than with fentanyl ropivacaine group. Sedation level was better with dexmedetomidine ropivacaine group than with fentanyl ropivacaine group. Adverse effects like hypotension, bradycardia and dry mouth was higher in dexmedetomidine ropivacaine group than with fentanyl ropivacaine group. Shivering, pruritis, nausea and vomiting was higher in the fentanyl ropivacaine group than with dexmedetomidine ropivacaine group.

**KEYWORDS:**

Epidural, Ropivacaine, Dexmedetomidine, Fentanyl, Lower abdominal surgery.