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**EFFICACY OF ONDANSETRON VERSUS KETAMINE FOR
CONTROL OF POSTSPINAL ANAESTHESIA SHIVERING
IN PATIENTS UNDERGOING CAESAREAN SECTION**

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SUMMARY

The present study was carried out in on 60 full term parturients, aged 20-41 years old, ASA I-II, scheduled for elective lower segment caesarean section (CS) under spinal anaesthesia in Al Shatby University Hospital.

Patients were randomly allocated into three equal groups (twenty patients each); group O (ondansetron group), group k (ketamine group), group S (saline group) .

Caesarean section was performed under spinal anaesthesia. Prewarmed Intravenous fluids were given to the patients before spinal anaesthesia. Subarachnoid block was instituted at L3/4 or L4/L5 interspace. Hyperbaric bupivacaine 10-15 mg was injected using 27G Quincke's needle. Just before intrathecal injection, all patients were given the study drug according to the group they were randomly assigned to.

Group O: Patients received IV Ondansetrone 4mg in 10 ml of normal saline.

Group K: Patients received IV ketamine 0.5mg/kg in 10 ml normal saline.

Group S: Patients received IV 10 ml normal saline (control group).

The aim of the work was to evaluate and compare the efficacy of intravenous administration of ondansetron and ketamine to control shivering in patients undergoing elective caesarean section under spinal anaesthesia.

Measurements

1. Hemodynamic parameters:

- a) Heart rate (beats/min)
- b) Mean arterial blood pressure.(mmHg)

2. **Shivering incidence and score:**
 - a) Incidence of shivering.
 - b) Shivering score.
3. **Onset of shivering.**
4. **Duration of shivering.**
5. **Ramsy sedation score.**
6. **Temperature monitoring.**
7. **Total pethidine consumption in mg.**
8. **Complications.**
9. **Apgar score.**

The results of the present study showed that

Age, Weight, Height and Duration of Surgery

Regarding age, weight and height; there were no statistically significant differences between the three studied groups.

Hemodynamic Parameters

Heart rate

On comparing the three studied groups, it was found that immediately before spinal anaesthesia, the mean heart rate was 89.15 ± 5 , 89.10 ± 4.94 and 89.40 ± 5.55 (beats/minute) for the three studied groups ondansetron, ketamine and saline respectively. There was no significant difference between the three groups.

Later on comparing the three studied groups, it was found that there were a statistically significant decreases in heart rate in group S compared to group O and group K at 10, 15 and 30 min after spinal anaesthesia. There were no

statistically significant changes between the three studied groups at all other times of measurement.

Mean arterial blood pressure (MABP)

On comparing the three studied groups, it was found that immediately before spinal anaesthesia, the mean of MABP was 88.55 ± 6.77 , 88.10 ± 6.65 and 87.15 ± 9.39 (mmHg) for the three studied groups ondansetron, ketamine and saline respectively. There was no significant difference between the three groups.

Later on Comparing the three studied groups, it was found that there was a statistically significant decrease in (MABP) in group O and group S compared to group K at 1, 5, 10, 15 and 30min after spinal anaesthesia. There were no statistically significant changes between the three studied groups at all other times of measurement.

Incidence of shivering

There was a statistically significant increase in number of cases that had shivering in group S compared to group O ($P_2=0.003$) and group K ($P_3=0.001$) but there was no statistical significance in group O compared to group K ($P_1=.605$).

Shivering Score

There was a statistically significant increase in incidence of shivering in group S compared to O at 15 and 30 minutes ($P_2=0.037$ and 0.042) respectively and group S compared to group K at 15 and 30 minutes ($P_3=0.009$ and 0.009) but there was no statistical significance in group O compared to group K at 15 and 30 minutes. There was no statistically

significant changes between the three studied groups at all other times of measurement.

Onset of Shivering

On comparing the three studied groups, it was found that there was no statistical significant difference between the three groups ($P=0.430$).

Duration of shivering

On comparing the three studied groups, there was no statistical significant difference between the three groups ($P=0.537$).

Sedation Score

In group O and group S no cases had sedation but in group K there was 18 patients out of 20 who became sedated. On comparing the three studied groups it was found that there were a statistically significant increase in incidence of sedation in group K compared to group O ($P_2 < .001$) and group S ($P_3 < .001$) at 15 minutes, There were no statistically significant changes between the three studied groups at all other times of measurement.

Changes in Core (tympenic) Temperature ($^{\circ}\text{C}$)

On comparing the three studied groups, it was found that immediately before spinal anaesthesia, the mean core temperature was 36.95 ± 0.11 , 36.94 ± 0.10 and 36.92 ± 0.08 ($^{\circ}\text{C}$) for the three studied groups ondansetron, ketamine and saline respectively with no significant difference between the three studied groups

Later there was a statistically significant decrease in mean core temperature in group S compared to group K and group O at 15, 30, 45, 60min, 1h, 2h and 3h after spinal anaesthesia . There was no statistically

significant difference between the three studied groups at all other times of measurement.

Total pethidine consumption in mg

On comparing the three studied groups, it was found that there was statistically significant increase in total pethidine consumption in group S compared to group O and K ($P=0.003$).

Complications

On comparing the three studied groups, it was found that there was a statistically significant increase in incidence of hypotension in group S compared to group K ($P_3=0.003$) with no statistical significance when compared to group O ($P_2=0.168$), and there was a statistically significant increase in incidence of bradycardia in group S compared to group O and group K ($P_2=0.044$, $P_3=0.008$) respectively. On the other hand there was no statistical significance between the groups regarding nausea and vomiting.

APGAR score

On comparing the three studied groups, it was found that there was no statistical significant between the three groups.