

## **Comparison between Tramadol and Nalbuphine As an Adjunct to Midazolam for Control of Shivering after Intrathecal Anesthesia.**

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### **ABSTRACT**

**Background:** Shivering is known to be a frequent complication, reported in 40 to 70 % of patients undergoing surgery under regional anesthesia. Post-anesthetic shivering is spontaneous, involuntary, rhythmic, oscillating and tremor-like muscle hyperactivity that increases metabolic heat production up to 600% after general or regional anesthesia. The aim of this study was to evaluate the efficacy, potency and side effects of tramadol plus midazolam as compared to nalbuphine plus midazolam in control of shivering after intrathecal anesthesia. **Patients and Methods:** 60 American Society of anesthesiologists grade I,II (ASA physical status I or II) patients of either sex aged 18 to 60 years who were scheduled for lower abdominal or lower limb surgery, under intrathecal block, were included in this prospective double-blind randomized study. These patients were allocated by closed envelop technique to two groups: Group T (n=30) received tramadol 0.5mg/kg plus midazolam 0.05mg/kg (intravenously) IV, and Group N (n=30) received nalbuphine 0.1mg/kg plus midazolam 0.05mg/kg IV. Heart rate, respiratory rate, non-invasive arterial blood pressure, peripheral oxygen saturation (SpO<sub>2</sub>) and body temperature (axillary) were recorded at 5 minutes' intervals during the pre-and the post anesthesia period. After intrathecal injection, the degree of sensory and motor block was assessed every 5 minutes in the first 20 minutes after intrathecal injection. The time in minutes at which shivering started, severity of shivering, time of disappearance of shivering and response rate were recorded. Recurrence of shivering was also noticed until the patient left the operation theatre. The degree of sedation was also assessed. Side effects were recorded and properly treated. **Results:** No drug showed any statistically significant advantage over the other. No major hemodynamic changes were seen in the two study groups, except that the respiratory rate at 10,15,25,30,120 minutes was higher in tramadol group than nalbuphine group, also body temperature at 90,120 minutes was higher in tramadol group than nalbuphine group. **Conclusion:** Both tramadol (0.5mg/kg) plus midazolam(0.05mg/kg) and nalbuphine(0.1mg/kg) plus midazolam(0.05mg/kg) had the same effect in the treatment of post spinal anesthesia shivering, with no statistically significant difference between them.

**Key words:** Tramadol, Nalbuphine, Midazolam, Shivering, Anesthesia