## [2003 Fall A27] Body temperature changes with high and low concentrations of ropivacaine used for labor analgesia

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**Introduction**: Continuous infusion of local anesthetics for labor analgesia is reportedly associated with increase in parturient's body temperature. The mechanism is unclear. We wanted to see if the concentration or the total volume of the solution used might affect temperature. With high concentrations of epidural local anesthetics, the patient loses mobility and stays in bed and with lower concentrations she may have better mobility and thus be able to dissipate more heat.
**Methods**: Data from 393 nulliparous afebrile parturients with singleton vertex presentation were included. The data were a part of a Continuous Quality Assurance Database which has been reviewed to by the IRB for compliance with HIPAA regulations. Two groups of patients were included:
High concentration group: 325 patients received ropivacaine 0.2% ropivacaine 10-15 ml+fentanyl 100 ug via a lumbar epidural catheter for epidural activation. They received 0.1% ropivacaine+fentanyl 2 ug/ ml at 10-12 ml/ hr for continuous infusion.
Low concentration group (walking epidural group): 68 patients received 0.07% ropivacaine 15-20 ml +fentanyl 100 ug for epidural activation followed by ropivacaine infusion 0.07%+2 ug/ml of fentanyl at 15 ml/hour. The patients in the high concentration group remained in bed and those in the low concentration group were allowed to walk.
Maternal tympanic temperature was measured at baseline, at 10 cm dilatation and at delivery and the baby's temperature soon after delivery. Results were expressed as mean±1 SD and analyzed using t-test at $p < 0.05$.
**Results**: Maternal age, height and weight did not differ between the groups. Two patients from each group had a temperature > 38 deg C at delivery. Total volumes used were 112± 12 ml in the high concentration group and 165 ± 20 in the low concentration group. No other clinically significant differences in temperature were noted (Table). No significant differences were noted in the neonatal temperature.
**Conclusion**: Our data show that only minimal elevations in temperature occur regardless of the concentration or volume of the local anesthetic used for epidural analgesia, or mobility of patients with uncomplicated pregnancies.

**Table: Maternal and Vital Statistics and Temperature Data**

| Variable | 0.1% Ropi+Fent (n=325) | 0.07% Ropi+Fent (n=68) | P Value |
|---|---|---|---|
| Age | 27.4 ±6.2 | 28± 5.5 | NS |
| Height (Cm) | 164.23 ± 6.73 | 164± 7.1 | NS |
| Pregnant Weight (Kg) | 81.5± 14.3 | 79± 8.0 | NS |
| Mat BLTemp°C | 36.6±0.48 | 36.4± 0.48 | 0.009 |
| MatTemp at10 CM | 37±0.6 | 36.8± 0.63 | 0.04 |
| Maternal Temp at delivery | 37.1±0.7 | 37.1± 0.7 | NS |
| Neonatal Temp | 36.8+0.1 | 36. 9± 0.8 | NS |

Abbreviations used: Mat – Maternal; BL – baseline; Temp –temperature

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