Is Epidural-PCA Analgesia Requirement for Labor Pain Reduced During the Night?

Primary Author: Rose Alloteh MD
Rutgers-Robertwood Johnson Medical School

Co-Authors: Adil Mohiuddin, MD; Antonio chiricolo, MD; Christine H Fratzola, MD; Geza Kiss, MD; Kevin Lee, BS; Scott Mellender, MD; Shaul Cohen, MD; Shruti Shah, MD; Stefanie Berman, MD;

Introduction: We speculated that epidural analgesic requirement is reduced during the nighttime because of reduced patient alertness. Also, it has been reported that C-section rates tend to peak in the evening.1 We compared patients in labor during the day versus night to determine whether epidural-PCA requirement and incidence of operative delivery decreased during the night.

Methods: Following IRB approval, 210 parturients were randomized to 2 groups. Group I (n=105) acquired epidural-PCA during the day from 11:00 to 13:00. Group II (n=105) acquired epidural-PCA during night from 23:00 to 01:00. All patients via epidural catheter received a 15mL solution of epidural ropivacaine 0.1% + sufentanil 1mcg/mL + epinephrine 2 mcg/mL, followed by an infusion at 6mL/hr, PCA dose 4mL, lockout time 10min (Abbott PCA pump). After the loading dose administration, patients were queried with each contraction as to their satisfaction with analgesia. If at time = 20min VAS>3, patients were given a 5-10mL bolus of the study solution every 10min as needed until VAS≤3. If analgesia was still inadequate (VAS>3), patients were rescued with 5mL of 0.25% ropivacaine every 10min as needed. IV oxytocin was ordered by the obstetricians when needed. Pain, nausea, pruritus, sedation, and motor block were evaluated hourly or sooner if intervention was required. Patients were asked to rate their satisfaction for the 1st stage, 2nd stage, and overall (10 = best, 0 = none). The results are given as mean ± S.D. P-value < 0.05 was considered significant.

Results: There were no differences among the groups with respect to age, weight, height, initial cervical dilation, 1st stage and ROM to delivery durations, initial pain scores, nausea/vomiting, 2nd stage satisfaction, APGAR scores, and baby's weight. There were 54 and 71 (p<0.03) primiparae for GI and GII respectively. First stage satisfactions were 9.4 Â± 1.1 and 9.9 Â± 1.2 (p<0.001) for GI and GII respectively. Overall satisfactions were 9.5 Â± 1 and 9.8 Â± 0.7 (p<0.02) for GI and GII respectively.

Conclusion: The hourly dose of analgesia required by the night group was not different from the day group. The greater total infusion volume in the night group was due to a longer duration of the second stage of labor, which probably resulted from decreased use of oxytocin. The incidence of operative delivery was not greater at night.

References: 1. Neuhoff et al., Obstetric & Gynecology 73:915, 1989