SOAP ABSTRACTS

A61 (Poster 20)

PCEA Comparison of Ropivacaine versus Bupivacaine 0.0625%: NO DIFFERENCE

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Ropivacaine (ROP) has been suggested as an alternative to bupivacaine (BUP) for labor analgesia[1]. There has been controversy over the appropriate doses by which to compare the two drugs, since evidence suggests that ROP may be as much as 40% less potent as a local anesthetic for labor[2,3]. One published study has used patient-controlled epidural analgesia (PCEA) in an attempt to control for potency, but a concentration of 0.125% was used, as was a significant dose of lidocaine[1]. We have compared ROP versus BUP, both with 2 μg/ml fentanyl, for labor analgesia in nulliparous women using PCEA.

Methods: After IRB approval and written informed consent, 44 ASA 1 or 2 nulliparous women in early labor were entered into the study. Women were randomized in a double-blind manner to receive ROP or BUP via their epidural catheters. Three ml of 0.25% study drug was given as a test dose. Five minutes later the catheter was dosed with 0.125% local anesthetic and 50 μg fentanyl in 10 ml. An infusion containing 0.0625% study drug with fentanyl 2 μg/ml was started. PCEA settings were: basal rate 6 ml/hr, bolus 4 ml, lockout 10 min. Clinical information and VAS, sensory/motor levels and side effects were recorded for four hours. Drug usage was recorded every hour until delivery or until a decision was made to deliver by forceps, vacuum or cesarean section. Drug use and continuous variables were compared by unpaired t-test. Categorical variables were compared by χ^2 or Fisher's exact test. Data is expressed as mean ±SD.

Results: The groups were similar except that the ROP group was slightly older and entered the study at higher station (16/23 at –2 or –3 versus 7/21 for BUP). There were no differences between groups in total drug usage, infusion usage per hour, PCEA attempts/injections, mode of delivery, need for physician administered doses, VAS scores or patient satisfaction.

	n	Age	dil @ t=0 (cm)	VAS≥4@ 15 min (n)	entry to vag. del (min)	C/S (n)	ml/hr
ROP	23	31±6	3.1	6	328±171	6	10.5±3.8
BUP	21	28±5	2.9	1	382±133	5	11.2±2.5
p		0.04	0.68	0.1	0.25	1.0	0.46

Discussion: Our data suggests that there is no difference in analgesic efficacy between ROP and BUP when given with fentanyl in a continuous infusion, even at the lower end of clinically used concentrations. Differences in potency appear clinically unimportant under these conditions.

References: 1. Anesth Analg 1998; 86:527-31; 2. Anesthesiology 1999; 90:944-50; 3. Anesthesiology 1999; 90:941-3.

A62 (Poster 21)

Post-epidural back pain in the parturient–a comparison of the epidural Sprotte vs Tuohy needle.

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Introduction: The effect of epidural needle design on patient morbidity has received little attention. The Sprotte needle (S) has the theoretical advantage of being less traumatic when piercing ligaments and the dura compared to the Tuohy (T). In this ongoing investigation, we compare the incidence of back pain between the 18g S with the 17g T.

Methods: After REB approval, 182 women were randomized in a prospective double-blind fashion to receive either the S or the T. Demographics and information regarding prior back pain were obtained. The incidence of back pain on day 3 and 7, the number of attempts at epidural placement, and user satisfaction (100 mm VAS) were recorded. Chi square and unpaired t tests were used as appropriate and a p value of <0.05 was considered statistically significant.

Results: There were no differences in age, weight, parity, method of delivery or prior incidence of back pain between groups.

	Group S (N=92)	Group T (N=90)
Parity >0 (N)	40	40
Back pain, Day 3 (n/N)	29/87	43/89*
Back pain, Day 7 (n/N)	22/81	21/82
User satisfaction (M+SD)	64(25)	91(14)**
Number of attempts (median/range)	1(1-4)	1 (1-5)

* p=0.02 **p<0.0001

Conclusion: Fewer patients had back pain on day 3 with S compared to T, although there was no difference on day 7. User satisfaction was less with S than T although the number of attempts to locate the epidural space were the same. Further experience with S may increase user satisfaction.

A63 (Poster 22)

Patient-Controlled Intravenous Analgesia (PCIA) using Remifentanil (R) for labor analgesia

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Introduction When epidural is contraindicated, labor analgesia is often poorly managed. The unique pharmacokinetic profile of R which stems from rapid metabolism by non specific esterases (1), lends it to be an ideal agent (2). Combination of low rate continuous background infusion (CBI) with small bolus doses was tested.

Materials and methods After Ethical Commitee approval and informed consent, four parturients (36-40 weeks of gestation) benefited of R PCIA. Abbott Lifecare PCA pump with R 50 μg/ml was set to deliver CBI of 0.05μg/kg/min and 25 μg boluses with a 5 min lockout period. Maternal monitoring included non-invasive blood pressure, heart rate (HR), SaO2 and respiratory rate (RR) measurements. Sedation and patient's pain scores as well as fetal heart rate were continuously recorded.

Results and discussion Monitored parameters (mean, range) were systolic blood pressure 120 mmHg (82-150), HR 89 beats/min (65-130), RR 17.5 breathings/min (12-24), and SaO2 97 % (96.7-98) with oxygen mask. All patients remained sleepy but easily arousable. All were satisfied with their analgesia. Data analysis highlighted very similar R requirements (μg/kg/h) – see Table . No particular side effects have been noticed,

Patient	PCIA duration (h)	R dose (μg/kg/h)	Boluses received	Apgar score (1,5,10 min)
1	2	4.96	11	9, 9, 9
2	2.45	4.40	16	8, 9, 9
3	4.45	3.63	5	9, 10, 10
4	5.45	4.89	29	9, 10, 10

Conclusion R PCIA combining low CBI and small bolus doses is an attractive alternative when epidural analgesia is contraindicated and seems to be safe for both mother and baby, at least when delivery occurs at or near the normal term of pregnancy.

References. (1) Anesthesiology 1998 ; **88** :1467-74
(2) Anaesthesia 1999 ; **54** : 461-465

A64 (Poster 23)

Is Frequent Redosing of Labor Analgesia Epidural Catheters Associated with Cesarean Delivery?

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Introduction: There is an association between epidural labor analgesia and Cesarean delivery (CS) for dystocia,[1] but it is not known if this implies cause and effect. Dysfunctional labor may be more painful,[2] so patients who request epidural analgesia may be at increased risk for CS. We postulated that patients who required more frequent redosing of epidural catheters were more likely to have CS.

Methods: In this IRB approved study, we reviewed records of all nulliparous women who received epidural analgesia at <5 cm dilation in September 1999, and received our standard local anesthetic/narcotic PCEA regimen. We compared rates of CS for dystocia among patients who required 0–1 vs. ≥2 manual redoses. Because patients with longer time intervals from epidural placement to delivery may require more frequent redosing and may be at risk for CS, we made these same comparisons for patients whose epidural to delivery interval was >6h. We compared CS for dystocia rates among patients who required epidural infusion rate or concentration increases vs. those who did not. Data were analyzed using Chi-square and Fischer's exact tests with $P < 0.05$ considered significant.

Results: Patients who required 2 or more redoses were at increased risk for CS for dystocia. (Table 1), as were patients who required increases in epidural infusion rates and concentrations (Table 2).

Conclusions: In this retrospective study, patients who required several manual redoses of their epidural catheters, or increases in epidural infusion rates or concentrations, for breakthrough labor pain were at increased risk of CS for dystocia.

	All Patients			Epidural to Delivery >6h		
1	Redose 0-1 N=138	Redose ≥2 N=10	*P*	Redose 0-1 N=42	Redose ≥2 N=8	*P*
CS	15(11%)	6(60%)	0.002	11(26%)	6(75%)	0.04
2	Rate Constant N=133	Rate Increased N=15	*P*	Conc. Constant N=142	Conc. Increased N=6	*P*
CS	14(11%)	7(47%)	0.004	16(11%)	5(83%)	0.001

Reference: 1) Reg Anes 1997; 22:495-9. 2) Anesthesiology supp. April 1998; A43.