POSTER REVIEW #1

A24 (Poster 18)

THE EFFECTS OF PATIENT-CONTROLLED EPIDURAL ANALGESIA VS CONTINUOUS INFUSION EPIDURAL ANALGESIA ON THE COURSE OF LABOR AND DELIVERY. *Sharma, S.K.; Alexander, J.M.; Wiley, J.; Leveno, K.J. Anesthesiology/Obst. and Gyn., UTSWMC, Dallas, TX* This is a secondary analysis of our previous randomized investigations (1,2). Following IRB approval and consent,154 nulliparous women with uncomplicated and spontaneous labor received continuous-infusion epidural analgesia (CIEA) with 0.125% bupivacaine and fentanyl 2mcg/mL at 8-10 mL/hr (1), and 214 similar women received patient-controlled epidural analgesia (PCEA) with 0.0625% bupivacaine and fentanyl 2 mcg/mL at 5mL/h with 3mL every 15 minutes as needed (2). Maternal demographics and neonatal outcomes were similar in both groups. Both groups were also similar with regards to the progress of labor, cesarean delivery rate, and overall forceps delivery rate (Table). However, PCEA using low dose (0.0625%) bupivacaine was associated with a lower incidence of forceps deliveries due to dystocia(7% vs 2%, CIEA vs PCEA, P< 0.05). **Reference:** 1. Anesthesiology. 1997;87:472-6 2. Anesthesiology (SOAP supplement)2000, A22.

Table: mean±SD, n (%),
P < 0.05 was significant.,

	PCEA (n = 214)	CIEA (n = 154)	P
First stage labor (min)	300±195	310±195	NS
Second stage labor (min)	57 ±43	62±80	NS
Cesarean section	15 (7)	9 (6)	NS
Forceps delivery	26 (12)	20 (13)	NS
Bupivacaine used (mL)	57±39	96±49	< 0.001
Visual analog pain Scores (1–10 cm)			
Before analgesia	9.1±1.4	8.6±1.5	NS
During Labor	2.0±2.0	2.6±2	NS
During Delivery	3.4±3.3	3.4±2.7	NS

A25 (Poster 19)

COMPARISON OF PCEA TO CEI ON A LABOR WARD: UTILIZATION AND TOP-UP REQUIREMENTS *Schultz MD, J.[1]; Bell MD, E.[1]; Dexter MD/PhD, F.[2]; Muir MD, H.[1]; Reynolds PhD, J.[1] 1. Anesthesia, Duke University, Durham, NC; 2. Anesthesia, University of Iowa, Des Moines, IA* **Introduction:** Compared to continuous epidural infusion (CEI), the use of patient-controlled epidural analgesia (PCEA) during labor can reduced maternal drug exposure. A presumed benefit of PCEA is a reduced need for anesthetist-administered "top-ups". These factors could combine to create a bias to provide PCEA to women who are expected, based on the experience of the anesthetist, to undergo an extended labor. Using our obstetrical anesthesia data base, we asked two questions: 1) Does this bias exist on our labor floor; and 2) Is this bias justified by a reduced requirement for top-ups of the PCEA users? **Methods:** With IRB approval, our database was searched to identify women who received PCEA between July and December of 1999. A cohort of CEI-treated women from the same period, was also identified. They were similar with respect to age and BMI. Analgesia for both groups involved infusion of dilute local anesthetic/fentanyl. The data was divided into five non-overlapping groups based upon infusion duration (in hours:< 3; 3-4; 4-5.5; 5.5-8; and > 8). The groups held approximately the same number of patients. Each group was tested for an ordered effect to determine a difference in the number of top-ups. **Results:** Charts from 231 parturients meeting the inclusion criteria were selected (115 PCEA; 116 CEI). Of these, 56% of PCEA patients had infusions for 5.5 h or less compared to 66% of CEI patients. Each increase in infusion duration resulted in a progressively larger reduction in the number of top-ups administered to the PCEA patients (p = 0.30, 0.17, 0.12, 0.05, and 0.02, respectively). **Discussion:** These data suggest there is a propensity to provide PCEA to women expected to have an extended need for labor analgesia. The data also indicate that a significant reduction in top-up requirement associated with PCEA only becomes evident after 5.5 h of infusion.

A26 (Poster 20)

EFFICACY AND COMPLICATIONS OF TWO TYPES OF EPIDURAL CATHETERS FOR OBSTETRIC ANESTHESIA *Hayashi, R.D.[1,2]; Cross, J.S.[1]; Jones, B.R.[1,2] 1. Anesthesiology, UC Davis, Sacramento, CA; 2. Anesthesiology, Sutter Memorial Hospital, Sacramento, CA* We studied two epidural catheters, Arrow product SC-05500 (EA) and Braun product CESK (EB) to evaluate which was most effective and least likely to cause complications to the parturient. The study was approved by the hospitals Institute for Medical Research. For a six-month period, 2021 patients received epidural anesthetics. The use of EA and EB was alternated monthly. EA is a 19 gauge wire-impregnated Flex-Tip open-end polyurethane catheter placed with a 17 gauge Tuohy needle. EB is a 20-gauge multi-orifice closed tip polyamide catheter placed with an 18 gauge Tuohy needle. EA was used for 1060 epidural anesthetics: 921 patients (86.9%) were in labor (L), 110 patients (10.4%) were in labor and later required cesarean section (L+CS), and 29 patients (2.74%) presented for elective cesarean section (CS). EB was used for 961 epidural anesthetics: 866 patients (90.1%) were in L, 80 patients (8.32%) were L+CS, and 15 patients (1.56%) presented for CS. Complications: Epidural Vein Cannulation: Upon initial catheter insertion, EA cannulated an epidural vein in 4 patients (0.38%), compared to 63 patients (6.56%) with EB (p=0.01). There were no significant differences seen between catheter types for vein cannulation during initial needle placement or later catheter migration. Paresthesia: EA elicited a paresthesia during insertion in 17 patients (1.60%), compared to 78 patients (8.12%) with EB (p=0.01). No significant differences were seen between catheter types for paresthesias during initial needle placement. Epidural Failure: For labor, EA failed to produce adequate anesthesia in 9 patients (0.849%), compared to 30 patients (3.12%) with EB (p=0.01). Based upon the lower incidence of epidural vein cannulation, paresthesia and inadequate pain control, we have found EA to be safer and more effective than EB in our obstetric anesthesia practice.

A27 (Poster 21)

SPINAL SUFENTANIL, FETAL BRADYCARDIA (FB), AND MATERNAL CATECHOLAMINES IN PARTURIENTS *Lenkovsky, F.[1]; Garaban, M.[1]; Kristensen, E.[1]; Bernstein, I.[1]; Rathmell, J.[1]; Kaye, A.[2]; Flaherty, K.[1] 1. Anesthesia, UVM, Burlington, VT; 2. Anesthesia, TTU, Lubbock, TX* **Background:** FB occurs in 2-18% of patents following intrathecal administration of sufenta. We hypothesized that FB following spinal analgesia (SA) is due to changes in maternal catecholamine levels (CL) that alter uterine perfusion. We examined FHR, maternal BP, as well as E and NE levels before and after intrathecal sufenta/bupivacaine to identify any correlation between changes in maternal CL and the occurrence of FB. **Method:** Maternal CL were drawn before, and 5 and 30 minutes after SA. SA was 5 mcg sufentanil and 2.5 mg isobaric bupivacaine. Maternal BP was determined at baseline and every 5 minutes for 30 minutes after SA. FB was defined as a reduction in the fetal heart rate of 60 bpm for >120 seconds. All data are expressed as mean and SE. **Results:** To date 11 subjects have been examined. Pregnancies were uncomplicated, 38-40 weeks duration, maternal ages 19-40 years, and cervical dilation at time of spinal was between 3 and 7 cm. Maternal MAP and NE and E levels are shown in the Table. There was no significant change in NE levels. E levels declined significantly by 30 minutes. FB occurred in one parturient. Her CL were NE: 435, 552, 375 and E: 245, 639, 196 at baseline, and 5 and 30 minutes post spinal. All her levels were higher than average, and the E fell 3 fold. **Conclusion:** This is a preliminary report. Maternal NE levels remained constant while E levels declined by half post SA. In the one instance where FB occurred, the precipitous decline in E may account for the FB. *P<0.05 vs.0 min

	0 min	5 min	30 min
MAP mmHg	93±4	86±4	82±3*
NE pg/ml	291±37	315±46	271±50
E pg/ml	111±27	111±54	55±16*