

## 2003 Spring A35

### Does epidural-PCA with ambulation reduce the incidence of bladder catheterization during labor?

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**Introduction:** Urinary retention is common among parturients during labor & delivery. Epidural block may inhibit urinary bladder function. Urinary drainage has been common in patients with labor epidural block. Bladder catheterization may increase the risk of urinary tract infection.<sup>1</sup> The purpose of this study was to determine whether reducing epidural ropivacaine concentration, which allows ambulation, can reduce incidence of parturient bladder catheterization.

**Methods:** Following IRB approval and informed consent, 1038 parturients in active labor were included. Group I (n=287) received 20 ml ropivacaine (R) 0.04% + sufentanil 1mcg/ml + epinephrine (E) 2 mcg/ml and were allowed to ambulate. Group II (n=523) received 20 ml epidural R 0.1% + fentanyl 4 mcg/ml + E 2 mcg/ml and were not allowed to ambulate. Group III (n=228) did not receive epidural analgesia for labor pain. Patients were queried with each contraction as to their satisfaction with analgesia. If at time = 20min, VAS>3, pt's were given a 5-10ml bolus of the epidural solution every 10min for a maximum of 20ml as needed until VAS≤3. If analgesia was still inadequate (VAS>3), patients were rescued with 5ml of 0.25% R every 10min as needed to a max of 20ml. At each interval where intervention was required the infusion rate was increased by 2ml/hr to a maximum of 16ml/hr. Age, height, weight, total duration of infusion, 1<sup>st</sup> stage & 2<sup>nd</sup> stage duration, oxytocin treatment, bladder catheterization, type of delivery, newborn weight, and Apgar scores at 1 & 5 min were assessed. Data expressed as mean ± SD or % incidence, were analyzed using Chi square and Student's t test where appropriate, with P<0.05 considered statistically significant.

#### Results:

	Total Infusion Duration (min)	Stage 1 Duration (min)	Stage 2 Duration (min)	IV Pitocin # (%)	Urinary Ret # (%)	Type of Delivery (n)		Baby Weight (gm)
						1=VD 2=Vacuum 3=Forceps 4=C/S		
Group I	353.7±255.0*	572.9±564.1	59.6±59.0	213(78)	65(24)	1=106 3=1	2=19 4=29	3469.2±558.5***
Group II	282.0±190.0	542.9±296.7	54.7±54.8	341(65)†	197(38) †	1=195 3=4	2=24 4=56	3384.3±559.9
Group III	No Epidural	374.1±255.3**	17.8±27.5**	67(30)**	17(7.5)**	1=42‡ 3=1	2=0‡‡ 4=0§	3344.5±491.3

\*II<I, p<0.00001; \*\*III<I&II, p<0.00001; \*\*\*I>II&III, p<0.05; † II>III, p<0.00001; ‡III>I&II, p<0.00001; ††III<I, p<0.04; §III<I&II, p<0.005

**Conclusion:** When compared to our routine labor epidural-PCA, epidural-PCA with ambulation significantly reduced the incidence of bladder catheterization, without affecting 1<sup>st</sup> & 2<sup>nd</sup> stage duration and labor outcome.

**Summary:** Epidural-PCA w/ambulation reduced bladder catheterization with no effect on outcome.

#### Reference:

1. Givens CD et al. *J Urol* 124:646-8, 1980.

*Reg Anesth Pain Med* 2003;28:A35