

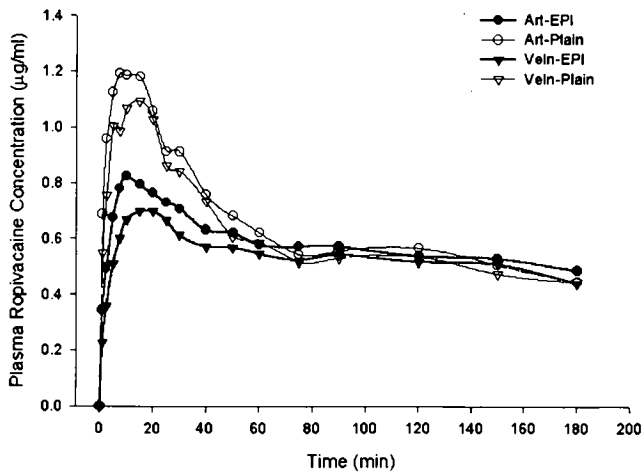
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**THE EFFECT OF THE ADDITION OF EPINEPHRINE ON EARLY SYSTEMIC ABSORPTION OF EPIDURAL ROPIVACAINE IN HUMANS** *LEE, B.B.<sup>1</sup> Ngan Kee, W.D.<sup>1</sup> Plummer, J.I.<sup>2</sup> Wong, A.S.<sup>1</sup>* 1. Dept of Anaesthesia & Intensive Care, The Chinese University of Hong Kong, Prince of Wales Hospital, Shatin, Hong Kong. Hong Kong; 2. Dept of Anaesthesia, Flinders Medical Centre, Flinders University of South Australia, Bedford Park, SA, Australia Little pharmacokinetic data are available on addition of epinephrine(Epi)to epidural ropivacaine(Rop)in humans. In a double-blinded study, we randomized patients having elective abdominal hysterectomy to receive 1.5 mg/kg Rop diluted in 15 ml either with (Epi group, n = 12) or without (plain group, n = 12) Epi 5 µg/ml. We measured arterial and venous plasma concentrations of Rop at intervals up to 180 min. Our results showed that arterial and venous plasma Rop concentrations were lower in the Epi group compared with the plain group in the first 60 min after drug administration (P < 0.01). Mean (+/- SD) maximum total plasma Rop concentration (Cmax) was lower in the Epi group (arterial 0.92 +/- 0.32 µg/ml and venous 0.82 +/- 0.33 µg/ml) compared with the plain group (1.31 +/- 0.39 µg/ml and 1.31 +/- 0.50 µg/ml, P = 0.01). Time to Cmax (Tmax) was not significantly different between groups (mean +/- SD arterial 16 +/- 2 min and venous 23 +/- 2 min in the Epi group, vs 9 +/- 2 min and 12 +/- 3 min, respectively, in the plain group, P = 0.08). Arterial plasma Rop concentrations were higher than venous concentrations during the first hour (P < 0.01); the arterio-venous difference decreased exponentially and the rate and magnitude of this decrease was unaffected by Epi. We conclude that addition of epinephrine 5 µg/ml to ropivacaine reduced the early systemic plasma concentrations of ropivacaine after epidural injection. This has implications for decreasing the risk of toxicity from systemic absorption of epidural ropivacaine. *Hurley RJ, Feldman HS, Latka C, Arthur GR, Covino BG. The effects of epinephrine on the anesthetic and hemodynamic properties of ropivacaine and bupivacaine after epidural administration in the dog. Reg Anesth 1991;16:303-8*

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**IS 6% HETASTARCH PREFERRED OVER PROPHYLACTIC IV EPHEDRINE FOR PREVENTION OF HYPOTENSION FROM INTRATHECAL ROPIVACAINE FOR C/S?** *Cohen, S.; Denenberg, H; Alptekin, B.; Ginsberg, S.; Bokhari, F.; Burley, E.; Zada, Y.; Freeman, L. Anesthesiology, UMDNJ-Robert Wood Johnson Medical School, New Brunswick, NJ* Introduction: The use of prophylactic IV ephedrine or 6% Hetastarch is effective for prevention of hypotension from spinal anesthesia for cesarean section (C/S) when compared with lactated Ringer's solution (LR) alone. This study was designed to determine which treatment is the most effective for the prevention of hypotension from combined spinal-epidural (CSE) anesthesia for C/S: IV LR, IV 6% Hetastarch, IV ephedrine or IV 6% Hetastarch with IV ephedrine. Method: Following IRB approval & informed consent 244 parturients scheduled for elective C/S with CSE were studied. In all patients, the epidural space was located at L4-5 or L3-4 interspace using epidural needle in lateral decubitus position. The epidural catheter was inserted immediately following administration of 10 mg ropivacaine with 100 µg epinephrine and 25 µg fentanyl intrathecally. The patients were randomized into 4 group: GI (n=60) received IV 2L LR prior to induction of spinal anesthesia, GII (n=66), received IV 1L LR & upon the spinal injection received IV ephedrine 30 mg for 15 min, GIII (n = 57) received IV 500 ml 6% Hetastarch + 1L LR prior to spinal injection, GIV (n=61) received IV 500 ml 6% Hetastarch + 1L LR prior to spinal injection, and upon the spinal injection also received IV ephedrine 30 mg for 15 min. The cost of: 1L LR is \$0.86, 1 amp ephedrine is \$0.32, & 500 ml 6% Hetastarch is \$16.16. Immediately after the spinal induction, the patients were positioned supine with left uterine displacement. BP was measured with automatic BP device every 2 min for the duration of the surgery. Hypotension was defined as a systolic BP (SBP) 100 mm Hg & 80% of the baseline BP. Hypotension was treated with IV boluses of ephedrine 5 mg q2 min. Conclusion: IV prophylactic ephedrine is cheaper and is as effective as 6% Hetastarch for the treatment of hypotension from intrathecal ropivacaine for C/S.

Mean Plasma Concentration Profiles



	GI	GII	GIII	GIV
Age (yrs)	31.7±4.9	30.7±6.2*	32.2±5.8	32.8±4.9
Weight (kg)	81.8±17.2	82.2±18.1	81.6±18.8	82.2±18.7
Height (cm)	160.5±22.6	161.3±6.4	160.8±6.6	161.3±5.8
Primiparae (n)(%)	14(23)	13(20)	20(35)	11(18)
Efficacy (n)				
1(%)	55(92)	61(92)	54(95)	58(95)
2(uncomfort.)	1(2)	3(5)	1(2)	2(3)
3 (+sedation)	3(5)	2(3)	2(4)	1(2)
4 (G/A)	0	0	0	0
Vomiting	9(16)	16(25)	6(11)	16(26)
Hypotension	26(44)**	10(16)	15(27)	13(22)
Hypotension Rx	24(40)***	8(13)	9(16)	10(17)
Overall Satis	9.6±1.0	9.8±0.6	9.6±0.8	9.6±0.9

\*II&#12296;IV, p&#12296;0.04. \*\*I&#12297;II,III&IV, p&#12296;0.02. \*\*\*I&#12297;II,III&IV, p&#12296;0.001