

Does Epidural Technique for Cesarean Delivery Impact Patient Satisfaction?

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Background

- Combined spinal-epidural (CSE) anesthesia superior to epidural anesthesia for cesarean delivery¹
- Dural puncture epidural (DPE) technique provides superior labor analgesia compared to traditional epidural technique²
- Patient dissatisfaction with obstetrics experience is associated with poor maternal and neonatal outcomes³
- This study compared CSE, DPE, traditional epidural techniques for anesthesia for cesarean delivery as well as patient satisfaction scores between groups

Methods

- Randomized double-blinded study
- Pregnant patients 18 years or older scheduled for cesarean delivery under neuraxial anesthesia at Grady Memorial Hospital
- *Exclusion criteria:* primary cesarean delivery, unable to consent
- *Primary outcome:* 1hr and 24hr postoperative pain scores
- *Secondary outcomes:* nausea, pruritis, patient comfort compared to prior cesarean, breast feeding
- Stats Kruskal- Wallis for continuous, Chi-Square of Fisher exact for categorical. Median values compared.
- 26G Gertie Marx spinal needles used for both CSE and DPE groups

Combined Spinal-Epidural

- 12mg 0.75% hyperbaric bupivacaine IT
 - 10mcg fentanyl IT
 - 200mcg preservative free morphine IT
- TD 1hr after IT, catheter then dosed starting at 1.5hr with 2%lidocaine with 1:200K epi

Dural Puncture-Epidural

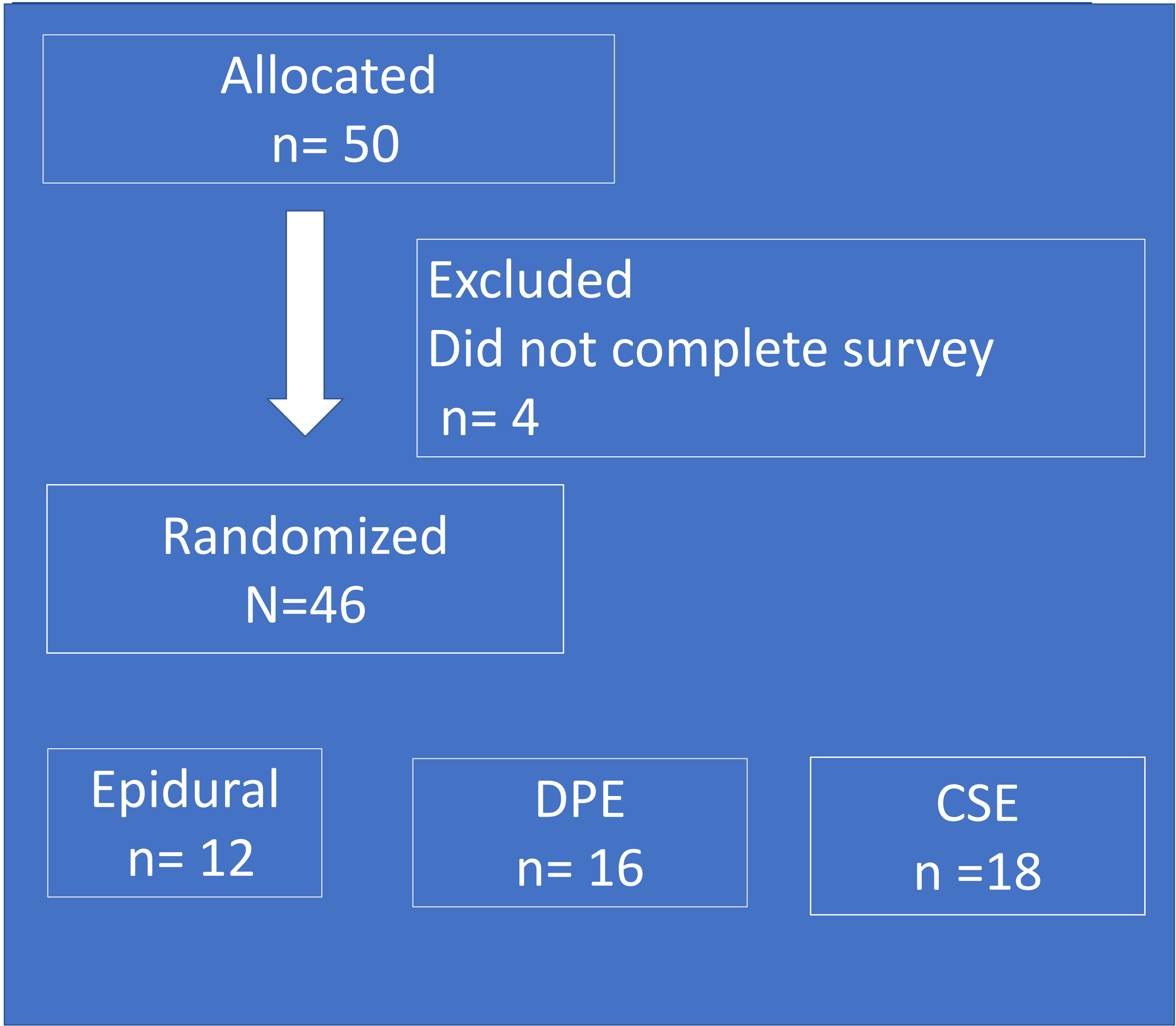
- TD with 1.5% lidocaine with 1:200K epi (3mL)
 - 2% lidocaine with 1:200K epi to obtain T4 level
 - 100mcg fentanyl
 - 3mg preservative free morphine
- 2% lidocaine with 1:200K epi Q30min

Traditional Epidural

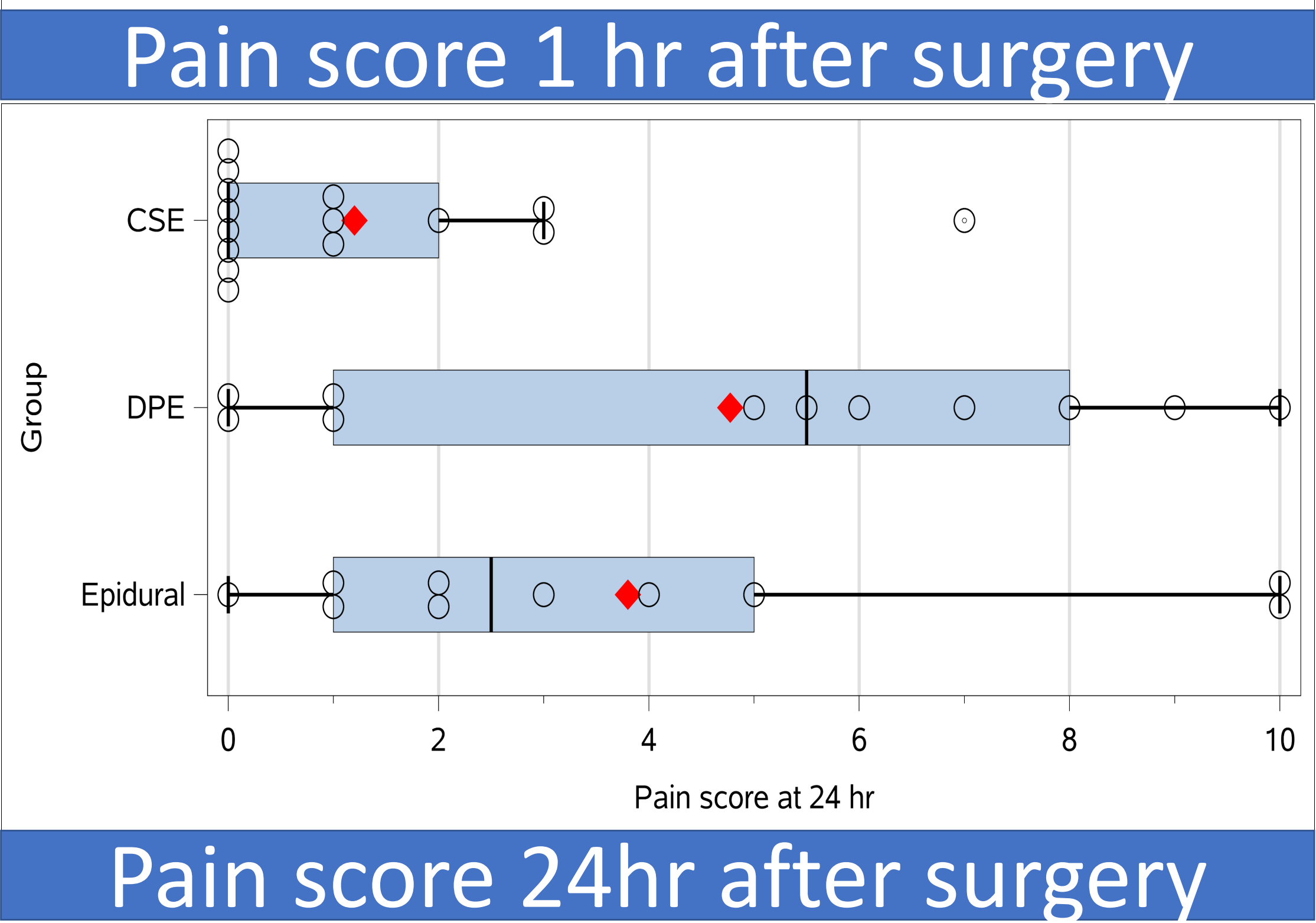
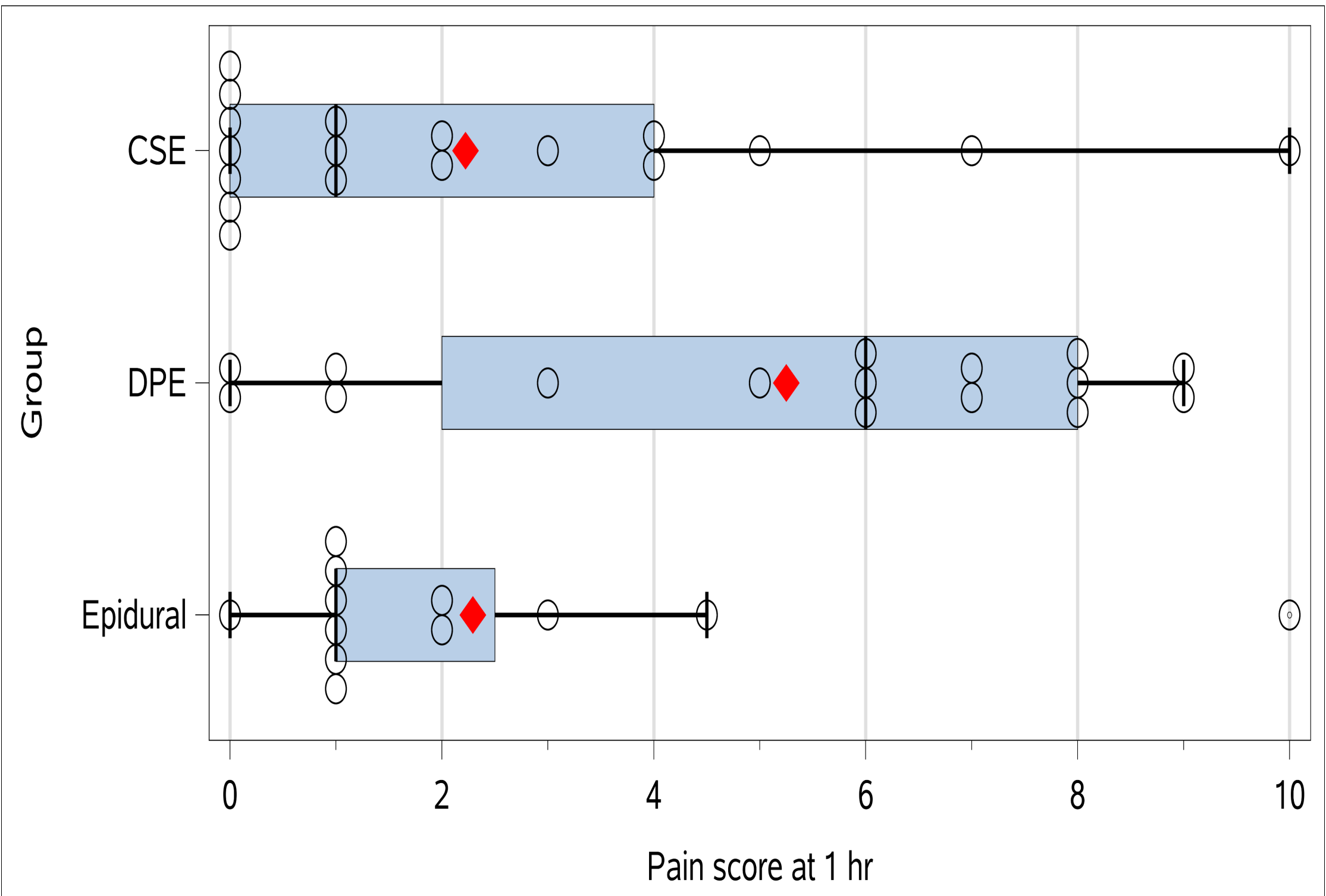
- TD with 1.5% lidocaine with 1:200K epi (3mL)
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 - 100mcg fentanyl
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Results



- Pain score 1hr and 24hr after the surgery : DPE > CSE and Epidural group. p=0.02
- - Anxiety improvement after neuraxial placement : Epidural>CSE>DPE p=0.01
- Local Anesthetic use: Epidural>DPE>CSE



Demographic - Race

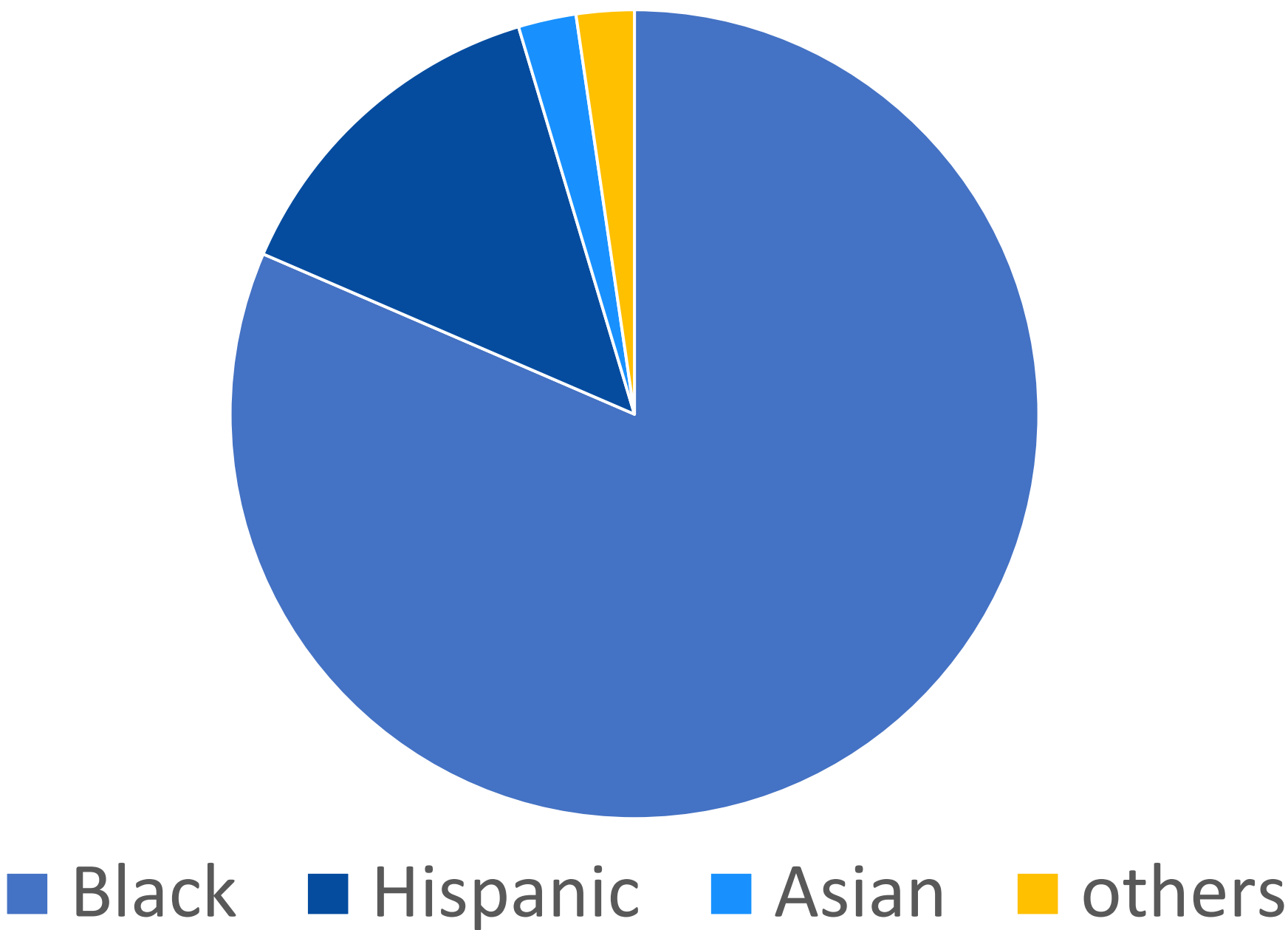
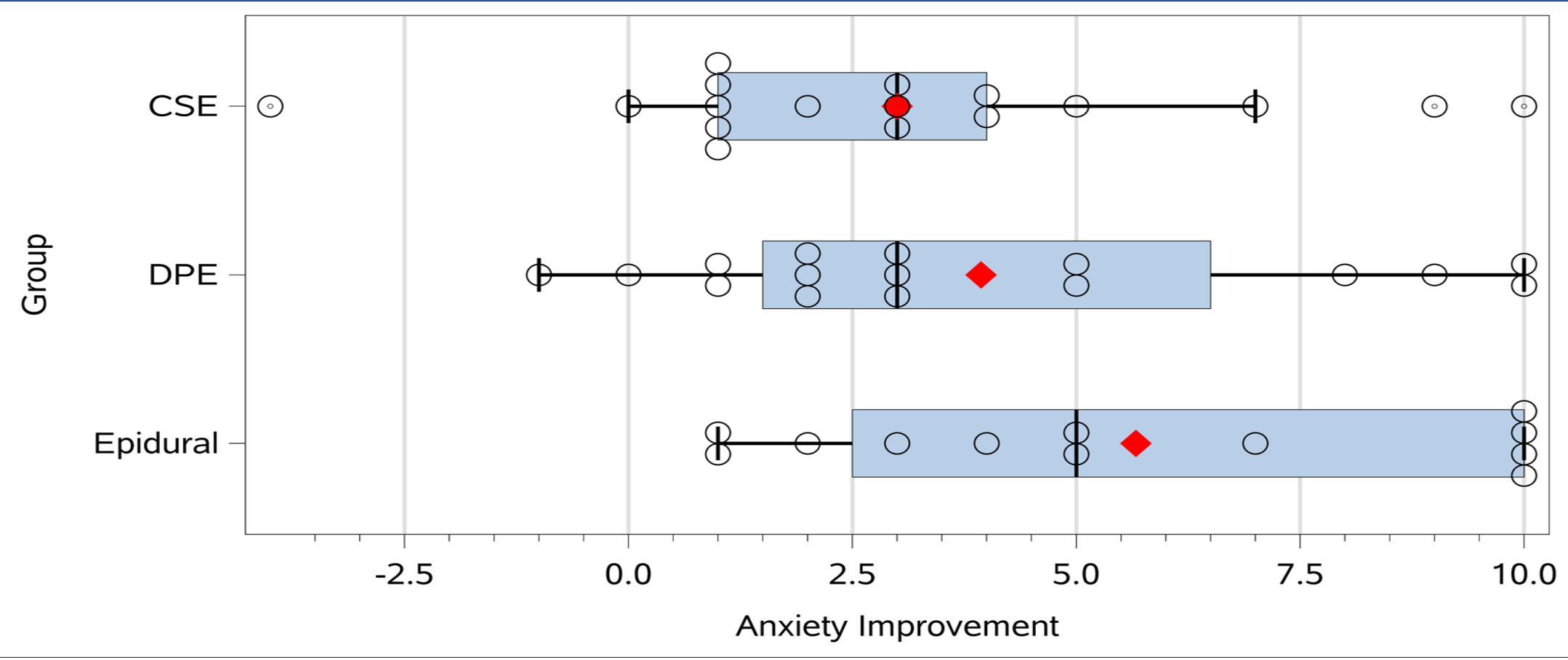


Table 1: Patient Characteristics					
Obstetric data	Estimated gestational age (wk)	Combined spinal-epidural (n = 18) 38.5 (38-39.1)	Dural puncture epidural (n=16) 38.9 (38-39.4)	Traditional epidural (n=12) 37.5 (37-38.9)	P* 0.41
	No. of prior cesarean delivery	12 (71%) 4 (24%) 1 (5%)	7 (44%) 8 (50%) 1 (6%)	9 (75%) 3 (25%) 0 (0%)	0.69
	2% lidocaine w 1:200K epi (mL)	1.5 (0-10)	22.5 (18.5-25)	30.5 (23.5-33)	<0.0001
Anesthetic data	Phenylephrine (mcg)	800 (300-1260)	1125 (350-2400)	400 (0-900)	0.25
Satisfaction data	Anxiety improvement	3 (1-4)	3 (1.5-6.5)	5 (2.5-10)	0.15
	Comparison to prior cesarean delivery	6 (35%) 3 (18%) 8 (47%)	5 (31%) 3 (19%) 8 (50%)	4 (40%) 2 (20%) 4 (40%)	0.88
	Desire similar anesthetic for future delivery	16 (89%) 0 (0%) 2 (11%)	13 (81%) 3 (19%) 0 (0%)	11 (92%) 1 (8%) 0 (0%)	1.00
	Breastfeeding	15 (83%) 3 (17%)	11 (69%) 5 (31%)	11 (92%) 1 (8%)	1.00

Patient experience

Neuraxial technique	Nausea	Itching	Patient discomfort
Epidual	0/12	0/12	1/12 (8%)
DPE	1/16 (6%)	0/16	4/16 (25%)
CSE	3/18 (16%)	2/18 (11%)	1/18 (5%)



Study limitations

- Recruitment closed early due to shortage of hyperbaric bupivacaine

Conclusions

- More pain in the immediate postoperative period in the DPE group compared to the CSE and traditional epidural groups
 - Potential bias with dosing DPE catheter that leads to underdosing
- DPE may not be more advantageous choice of anesthetic for cesarean when compared to traditional epidural technique as has been reported for labor analgesia
- Despite improved pain control with CSE technique compared to DPE and epidural techniques, patient concerns with side effects and discomfort more profound
 - More aggressive management of maternal side effects

References

- Davis SJ ANA 1997 Sep;85(3):607-613
- Cappiello E ANA Aug 2008;107(5), 1646-1651.
- Sawyer A 2013 BMC pregnancy and childbirth, 13(1), 108.

