Effects of 0.5% Heavy Bupivacaine At Room Versus Body Temperature on Shivering After Spinal Anesthesia In Patients Undergoing Caesarean Section

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INTRODUCTION

Shivering is a frequent problem associated with central neuraxial block that is uncomfortable for patients, with an incidence reaching up to 56.7% perioperatively.

OBJECTIVES

In this prospective , randomized , double blinded study, we evaluate the effect of warm (body temperature 37 °C) Vs cold (room temperature 23 °C) 0.5% heavy bupivacaine injected intrathecally , on Post Anesthesia Shivering (PAS) in patients undergoing Caesarean Section . Secondary outcomes such as pruritus, nausea and vomiting are also evaluated.

METHODS

We enrolled 100 patients with ASA I & II between age range of 20 -35 yrs undergoing elective/emergency LSCS , Patients were randomly divided into two groups:

Body Temperature Group (BT) :

(n=50): received 2 ml of 0.5% heavy bupivacaine + 20 mcg fentanyl intrathecal at 37 °C.

Room Temperature Group (RT) :

(n=50): received 2 ml of 0.5% heavy bupivacaine + 20 mcg fentanyl intrathecal at 23 °C.

- ✓ For both groups , operating room kept constantly warm , IV fluid pre warmed .
- ✓ Subarachnoid block was performed using warmed L.A by tissel kit warming machine for BT group , conventional method used for RT group. Patient core temperature was monitored by the tympanic membrane probe .
- ✓Parameters recorded : Sensory block level , blood pressure , heart rate , Apgar score , blood loss , nausea , vomiting , pruritus , core temperature, shivering with intensity (Grade 0-4).

✓Shivering was evaluated according to the shivering scale developed by Crossley and Mahajan :-

0	No shivering
1	No visible muscle activity but piloerection, peripheral vasoconstriction, or both are present
2	Muscular activity in only one muscle group
3	Moderate muscular activity in more than one muscle group but no generalized shaking
4	Violent muscular activity that involves the whole body

REFERENCES

1. NSY Padayachee et al. Postoperative Anaesthesia Shivering, University of Kwazulu – Natal 03 May 2013, No 15

2. CrowleyLJ, Buggy DL, Shivering and neuraxial anaesthesia. Regional Anesthesia and Pain Medicine 2008; 33 (3): 241-52.

3. Mirzaie et al. The effects of warm and cold intrathecal bupivacaine on shivering during delivery under spinal anaesthesia. Saudi Journal of Anaesthesia 2012; 6 (4) : 336-340

RESULTS

There was no difference between two groups in amount of blood loss , vitals and Apgar score , but the incidence of pruritus was more , and dermatomal level achieved was slightly higher in the RT group..

The incidence & intensity of shivering is obviously and significantly reduced in BT group

Parameters	Group BT	Group RT	P value
Mean Age (year)	33.58 ± 5	31.62 ± 6	0.231
Mean weight (Kg)	79 ± 23	82 ± 21	0.604
Mean temperature at 0 min	35.2 ± 1.2	36.2 ± 0.8	0.002
Median shivering at 0 min	0	0	0.808

Parameters	BT Group (n=50)		RT Group (n=50)		P value
	No.	%	No.	%	
Patients with shivering (Grades I to IV included)	7	14	31	62	<u>0.0001</u>
Patients with pruritus	3	6	10	20	<u>0.037</u>
Patients with nausea	13	26	14	28	0.822
Patients with vomiting	3	6	6	12	0.295
Dermatomal level achieved	T5–T6		T4-T5		

Tissel kit warming machine

CONCLUSION

Warming hyperbaric 0.5% bupivacaine to body temperature can reduce the incidence and intensity of shivering in women undergoing caesarean delivery under spinal anesthesia as compared to that administered at room temperature.