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83/10/30 : _ 83/7/22 :

The Effect of Low Dose of Bupivacaine + Fentanyl in Spinal Anesthesia on Hemodynamic, Nausea and Vomiting in Cesarean Section

Abstract:

Objective: Spinal anesthesia for cesarean section is associated with high incidence of hypotension, nausea and vomiting. The synergism between intrathecal opioids and local anesthetics may make it possible to achieve reliable spinal anesthesia in cesarean section with minimal side effects.

Materials and Methods: 40 patients aged 17-35 years old underwent cesarean section were randomized into two groups. Half of them in group A received spinal anesthesia with 6mg of bupivacaine and 10µg fentanyl; and group B received only 12mg bupivacaine. Hypotension was defined as a systolic blood pressure of less than 90 mmHg or 25% decrease in mean arterial blood pressure from baseline.

Results: All patients in both groups had satisfactory anesthesia.] The mean dose of ephedrine was 4mg in group A, and 11.75mg in group B (P=0.006). The mean ratio of lowest systolic pressure to baseline systolic pressure was 0.75 for group A and 0.65 for group B.(P=0.04). Nausea and vomiting was observed in 10% of group A and 20% of group]B.

Conclusion: Small dose of bupivacaine and Fentanyl provides good spinal anesthesia for cesarean section with less hypotension, nausea and vomiting.

Key Words: Spinal Anesthesia, Fentanyl, Cesarean section, Hypotension, Nausea and Vomiting, Bupivacaine .



90mmHg

% 20 30

(4)

1965

4/5

(1, 2)

1988

25

(Milking)

1994

)

84

(

(2, 3)

(6)

ml

15 - 30

500 - 1000

(3, 4)

(9, 10)

%20

1/5 2

(4)

T4

10 20 µg

0.1 - 0.25 mg

10µg

Norris

12mg

(6, 7)

T7-C8

()

(3)

(3, 5)

CSF

(45 - 100%)

(8 11 12 13)

(Head Down) 15 30
 (Left Lateral) ()
 6 mg , %0/5
 %0/5 10 µg
 12mg
 20 ml
 %50 4ml %0/5 ()
 (0/2cc) 10µg
 2/5cc
 6 – 8
 1381
 5
 20 20
 17 35
 2/5 5 mg 90 mmHg ()
 2 3
 1500 – 2000ml
 15 30 8 ml/kg

Chi- , T-Test

Square gauge
SPSS

Interventional Comparison
20

Quincke 25
L3-L4
10 – 15
CSF 0/5 ml



)

:(

A : 58/50 , 95/00 , 0/70 , 0/75

B : 47/00 , 80/50 , 0/60 , 0/65

P=0.003 T-Test

T-Test

(1)

P=0.03 T-Test

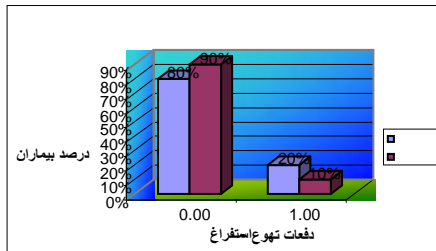
1

(1381)

P=0.12 T-Test

P=0.04 T-Test

A %10 ,
B %20
(1)



(1

(1381)

P-Value	12mg	6mg 10µg	
0/76	25/35 ± 5/13	24/85 ± 5/01	X±SD ()
0/39	71/76 ± 8/50	74/60 ± 11/35	X±SD (kg)
0/45	158/05 ± 6/59	156/25 ± 7/95	X±SD ()
0/19	6/01 ± 1/80	5/03 ± 1/03	() X±SD
0/23	± 20/93 63/03	56/10 ± 14/34	()
0/12	97/05 ± 17/35	99/41 ± 18/49) (X±SD
0/33	± 18/64 123/50	128/25 ± 10/42	(mmHg) X±SD
0/49	81/25 ± 17/00	84/25 ± 8/78	(mmHg) X±SD

A 20 6

%30 A %70

B

20

4mg A

14 , B

P=0.04

A %20 (Chi-Square test)

11/75mg

B

B %35

P=0.006

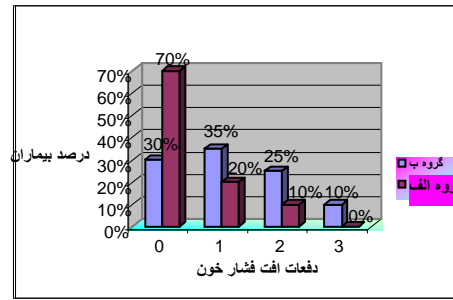
%25 A

%10.

B

B %10

(2)



(2)

(1381)

(15)

(HR)

10 µg

6 mg

B

A
(P=0.04)
B

B A

(P=0.04)
B

(1)

Bruce

2000

20

Ben-David

10

%0/5

% 0/5

()

%30 A

B

(P=0.04)

70

(CVP)

(14)

A

(15)



(4)

5 mg
%30 A

B

(2) (P=0.006)

(%10) A

()

(%20) B

%70

B

A

A

)

(

A

(1)



	()				
	20			40	
12mg	B	10µg %0/5		6mg	A
	90mmHg				
				%25	
4 mg	A				
		(P=0.006)		11/75mg	B
	B	0/65	A	0/75	
					(P=0.04)
		B	%20	A	%10

References:

1. Cunningham FG, Gant NF, Leveno KJ, et al. William's obstetrics. New York: McGraw-Hill; 2001. Vol.1: 411-398.
2. Chestnut DH. Obstetric anesthesia: Principles and practice, 2nd ed, New York: Mosby ; 1999 : 465- 492.
3. Miller RD. Anesthesia. 5th ed, New York: Churchill Livingstone; 2000:2946 – 2052.
4. Stolting RK, Dierdorf SF. Anesthesia and existing diseases , 4th ed .New York: Churchill Livingstone; 2002: 655 – 684.
5. Norris MC. Patient variables and the subarachnoid spread of hyperbaric bupivacaine in the term parturient. Anesthesiology 1990 Mar; 72(3): 478.
6. Chestnut DH. Obstetric anesthesia: Principles and practice. 2nd ed, Baltimore: Mosby; 1999: 465-478
7. Hunt CO, Datla S, Hauch MA, et al. Preoperative analgesia with subarachnoid fentanyl-bupivacaine. Anesthesia 1987; 67: A 621.
8. Hess PE, Vasudevan A, Snowman C, et al. Small dose bupivacaine-fentanyl Spinal Analgesia combined with morphine for labor. Anesth analg 2003 Jul; 97(1):247-52.
9. Riley ET, Cohen SE, Rubenstein A, et al. Prevention of hypotension after spinal anesthesia for cesarean section :six percent hetastarch versus lactated ringer's solution. Anesth Analg 1995; 81: 838.
10. Sternlo JE, Rettrup A, Sandin R, et al. Prophylactic im.ephedrine in bupivacaine spinal anesthesia. Br J Anesth 1995; 74: 517-20.



11. Bruce BD, Roman F, Tatianna A, et al. Minidose Bupivacaine-Fentanyl spinal Anesthesia for surgical repair of Hip fracture in the aged. *Anesthesiology* 2000; 92: 6-10.
12. Bruce BD, Solomon E, Levin H, et al. Intrathecal fentanyl with small dose dilute bupivacaine: better anesthesia without prolonging recovery. *Anesthesia and Analgesia*, 1997; 85: 560-65.
13. Lennox PH, Vaghadia H, Henderson C, et al. Small-dose selective spinal Anesthesia for short-Duration out patient laparoscopy: Recovery characteristics compared with desflurane anesthesia. *Anesthesia and Analgesia* 2002; 94: 346 – 350.
14. Bggy DJ, Power CK, Meeke R, et al. Prevention of spinal Anesthesia – induced hypotension in the elderly: im.methoxamine or combined hetastarch and crystalloid. *Br J Anesth* 1998; 80:199-203.
15. Critchley LA, Stuart JC, Conway F, et al. Hypotension duing subarachnoid anaesthesia, Homodynamic effects of ephedrine. *Br J Anaesth* 1995;74: 373-8.