Original Research Article

Comparative study of efficacy of nalbuphine with hyperbaric bupivacaine and pentazocine with hyperbaric bupivacaive in preoperative assessment of geriatric patients of Telangana

G Shylakar Reddy[1], Swapna T[2*]

[1,2]Assistant Professor, Department of Anesthesiology, Mediciti Institute of Medical Sciences Ghanapur-Medchal, Telangana, INDIA.
Email: shylakar84reddy@gmail.com

Abstract

Background: Severe or uncontrolled post-operative pain may cause myocardial ischemia or infarction. Hence every anesthesiologist prefers long acting pain relief analogist drugs. Hence efficacies of different drugs were compared with their duration of sensory motor blockade with their side effects. **Methods:** 90 patients grouped into group A (45) and group B (45), Hyperbaric long and mg of Nalbupine in group B 10mg of Hyperbaric bupivaine with 3 mg of pentazocaine undergoing major abdomen pelvic surgery, their BP heart rate nerve blockage side was recorded. **Results:** VAS analogue was in grade was higher in group A, mean values of Diastolic systolic BP was significant (P<0.01) in group A, mean value of heart rate was more in group A mean value of hart rate was more in group B (P<0.01) duration of sensory and motor blockade was more in group B (P<0.01) and least side effects were observed in group B. **Conclusion:** Group B analgesics (penazocaine with hyperbaric bupivacaine) was much efficient, better relief for post-surgical pain.
Key Words: Intrathecal, Analgesic, Nalbuphine, Hyperbaric Bupivacaine Pentazocaine, Telangana.

[*]**Address for Correspondence:**
Dr. Assistant Professor, Department of Anesthesiology, Mediciti Institute of Medical Sciences, Ghanapur-Medchal -501401 Telangana, INDIA.
Email:shylakar84reddy@gmail.com
Received Date: 17/06/2019 Revised Date: 10/07/2019 Accepted Date: 04/08/2019
DOI: https://doi.org/10.26611/1015111216

Access this article online	
Quick Response Code:	Website: www.medpulse.in
	Accessed Date: 16 August 2019

INTRODUCTION

Uncontrolled post-operative pain may result in sympathetic activation and increase in myocardial oxygen consumption, which may lead to the development of myocardial ischemia and infarction by decreasing myocardial oxygen supply through coronary vasoconstriction(1) and attenuation of local metabolic coronary vasodilatation poorly controlled acute post-operative pain may be important predictive factor in the development(2) of chronic post surgical pain (CPSP). The relief of post-operative pain is a subject, which receiving increasing attention because effective pain control is essential for optimal care of surgical patients. Hence spinal anesthesia is a popular and commonly used worldwide, spinal anesthesia is advantageous in that it uses small dosage of anesthesthtic is simple to perform and offers a rapid onset of action, reliable surgical analgesia and good muscle relaxation. These advantages are sometimes offset by relatively short duration of action and complaint of pain when it wears off. The popularity of spinal block has well defined end points and anesthesiologist can produce the block relatively with a single injection.[3] Hence to increase the duration spinal black two combination of analgesic drugs Nalbuphine with hyperbaric bupivacine were compared versus pentazocine with hyperbaric bapicaine in and their duration of sensory and motor blockage side effect were also noted to study the efficacy of these drugs.

How to site this article: G Shylakar Reddy, Swapna T. Comparative study of efficacy of nalbuphine with hyperbaric bupivacaine and pentazocine with hyperbaric bupivacaive in preoperative assessment of geriatric patients of Telangana. *MedPulse International Journal of Anesthesiology.* August 2019; 11(2): 168-172. http://medpulse.in/Anesthsiology/index.php

MATERIAL AND METHODS

90 patients aged between 20 to 60 years admitted in surgery and Gynecological ward of Mediciti institute of medical science hospital Ghanpur Medchal-501401 Telangana were selected for study.

Inclusion criteria- Patients undergoing major abdominal and pelvic surgery Approved by physician regarding normalcy or fitness for surgery were included in the study.

Methods- Two groups of 45 were selected by lottery method

Group A- Received long hyper baric bupivacaine and mg of nulbupine

Group B-Long of hyperbaric pupivacaine and 3 mg of pentazocaine all patients were explained the procedure and got their written consent complete haemogram, Urine examination, FBS, ECG, X-ray, Blood grouping. Blood urea, Serum creatinine was carried out pre-surgically. Visual Analogue scale- 10 cm line – grade-I 1-2 scale no pain 3-4 scale- grade-II, mild pain, 5-6 grade-III moderate pain, grade-IV 7-8 severe pain, 9-10 grade-V unbearable pain, patients were prepared overnight fasting oral alprazalam-0.5 mg and 150 mg ranitidine given at night before the day of sugary. Spinal anesthesia was performed under all aseptic precautions in the lateral position using 25-gauze quimcke needle at L3-4 or L4-5 interspaces. Following free flow of CSF respective drugs was injected into sub-arachnoids' space and following parameters were recorded HR, RR,SPO_2 and NIBP at certain intervals. Level of sensory blockage checked with 23 G Hypodermic needle immediately after SAB at mid-clavicular line and was measured every minute until it reached T8 dermatome level of motor blockage was assessed by using the Bromage scale 0=no motor block. Full flexion of knees and feet

l= Inability to raise the extended leg,

2= Inability to flex knee but some flexion of feet possible.

3= unable to flex the ankle immediately after SAB and at certain intervals from laminates to 180 minutes. The duration of study about 4 years (2014 to 2018)

Exclusion criteria – The patients having malignancy and immune compromised were excluded from the study.

Statistical analysis- Vas analogue in both groups and side effects in both groups were classified with percentage comparison of group A and B – SBP, DBP, Heart rate, sensory and motor blockade was studied with 20077 SPSS software. The ratio of male and females were 2:1

OBSERVATION AND RESULTS

Table-1. (a) Visual analogue scale in group A 4(8.8%) were in grade I, 7(15.5%) in grade-2 11(24.4%) in grade-3, 23(51.1%) in grade-4.(b) Visual analogue in group-B 2(4.4%) in grade-I, 9(20%) in grade-II, 20(44.4%) in grade-III, 14(31.1%) in grade-IV.

Table-2. Comparison of systolic Blood pressure values in both groups – In baseline study 1205(SD±0.040) mean value, 116-9(SD±0.038)in group A, 116.9 (SD±0.038) in group B and 't' test value was 437.7 and P value was highly significant. At the interval of 10 minutes mean value of group A was 126.6(SD±0.045) 122.8(SD±0.040) in group B, 't' test value was 39.6% and P value was highly significant (P<0.01) At the interval of 30 minutes-124.3 (SD±0.311) was the mean value group A, 121.3((SD±0.021) was the mean value of group B, 't' test value was 64.5% and P value was highly significant (P<0.01) At the interval of 60 minutes mean values group A was 121 (SD±0.030) 117.5(SD±0.020) of group B and 't test value was 116 and P value was highly significant (P<0.01) At the interval of 90 minutes, 119.3(SD±0.035) was the mean value group A and 115.5(SD±0.027) of group B, 't' test value was 576.6 and P value was highly significant (P<0.01). at the interval of 120 minutes 118.3(SD±0.026) was the mean value of group A, 113.8(SD±0.060) of group B, 't' test was 461.6 and P value was highly significant (P<0.01). At the interval of 150 minutes mean value of group A as 118.1(SD±0.030), 113.9(SD±0.025) 't' test value was 721.4 and P value was highly significant (P<0.01) At the interval of 180 minutes mean value of group A was 118.5 (SD±0.038) and 113.9 (SD±0.05) 't' test, value was 491.3 and P value was highly significant.

Table - 3. Comparison of Diastolic Blood pressure in both groups. In baseline study mean value of group A was 76.74 (SD±0.30) and 73.48 (SD±0.035) in group B 't' test value was 474.4 and P value was highly significant (P<0.01) At the interval of 10 minutes 81.38(SD±0.042) was the mean value of group A 78.65 (SD±0.042) was group B and 't' test value was 308.3 highly significant (P<0.01). At the interval of 30 minutes 79.78(SD±0.038) was the mean value of group A, 77.22(SD±0.027) was group B 't' test was 368.3 and P value was highly significant (P<0.01) At the interval of 60 minutes 78.59 (SD±0.290) was mean value of group A, 75.80(SD±0.258) 't' test was 48.2 and P value was highly significant (P<0.01) At the 90 minutes 76.80 (SD±0.050) was the mean value of group A, 74.38(SD±0.220) group, 't'test value was 71.2 and P value was highly significant (P<0.01) At the interval of 20 minutes 76.44(SD±0.158) was the mean value of group A, 73.08 (SD±0.072) and 't' test was 129.8 and P value was highly significant (P<0.01). At the interval of 150 minutes 76.58(SD±0.128) was the mean value of group A, 73.08 (SD±0.3) and 't' test was 57.17 and P value was highly significant (P<0.01) At the interval of 180 minutes 76.62 (SD±0.130) was the mean value of group A, 73.68 (SD±0.079) group

B, and 't' test was 129.6 and P value was highly significant (P<0.01)

Table-4 Comparative study of Heart rates in both groups at different interval. In base line study mean value group A was 70.68 (SD±0.240) 71.39 (SD±0.290) was group B, 't' test was- 12.65 and P value was highly significant (P<0.01). At the interval of 10 minutes 76.33(SD±0.121) was the mean value of group A, 77.3 (SD±0.124) was group B, and 't' test was 38.71 and P value was highly significant (P<0.01). At the interval of 30 minutes 74.26(SD±0.030) was the mean value of group A, 75.38 (SD±0.011) was group B, and 't' test was 65.34 and P value was highly significant (P<0.01). At the interval of 60 minutes 71.80(SD±0.188) was the mean value of group A, 74.30 (SD±0.148) and 't' test was 70.02 and P value was highly significant (P<0.01) At the interval of 90 minutes 70.69(SD±0.124) was the mean value of group A, 71.68 (SD±0.070) and 't' test was 46.6 and P value was highly significant (P<0.01). At the interval of 120 minutes 70.35(SD±0.030) was the mean value of group A, 71.88 (SD±0.029) and 't' test was 245.9 and P value was highly significant (P<0.01). At the interval of 150 minutes 69.30(SD±0.027) was the mean value of group A, 70.29 (SD±0.019) was group B, and 't' test was 201.1 and P value was highly significant (P<0.01). At the interval of 180 minutes 69.20(SD±0.024) was the mean value of group A, 70.30 (SD±0.018) and 't' test was 245.9 and P value was highly significant (P<0.01).

Table-5 Comparison of duration Analgesia sensory block and motor block parametric values in both groups (in minutes).In duration of analgesic 484.4(SD±0.24.8) was the mean value in group A 302.6(SD±0.6.80) in group B, 't' test was 47.4 and P value (P<0.01) In the sensory block 14.82 (SD±0.461) was the mean value in group A 18.38(SD±0.452) in group B 't' test was 36.9 and P value was highly significant (P<0.01) In motor block 11.33(SD±0.17) was the mean value in group A, 13,28(SD±0.361) in group B, 't' test was 34.4 and P value was highly significant (P<0.01).

Table-6 In the study of side effects of analgesic in both groups shivering 3(6.6%) in group A, (2.2%) in group B, Headache 4(8.8%) in group A, 2(4.4%) in group B, Somnolence 3(6.6%) in group A, 1(2.2%) in group A, Urinary retention 3(6.6%) in group A, 2(4.4%) in group B, Nausea and vomiting 5(11.1%) in group A, 4(8.8%) in group B, Hypo tension 13(28.8%) in group A, 12(26.6%) in group B, Brady cardiac- 4(8.8%) in group A, 2(4.4% in group B.

Table 1(a): Visual analogue scale in group A Patients (No of Patients -45)

Grade –I		Grade-II		Grade-III		Grade-IV	
No	%	No	%	No	%	No	%
4	8.8	7	15.5	11	24.4	23	51.1

Table-1(b): Visual analogue scale in group B Patients (No of Patients -45)

Grade –I		Grade-II		Grade-III		Grade-IV	
No	%	NO	%	No	%	NO	%
2	4.4	9	20	20	44.4	14	31.1

Table 2: Comparison of systolic Blood pressure values in both groups intervals patients (No of Patients -45)

SBP Systolic	Group A		Group B		't' test value	P value
	Mean value	SD	Mean value	SD		
Baseline	120.5	0.040	116.9	0.038	437.7	P<0.01
10 minutes	126.6	0.045	122.8	0.046	396.1	P<0.01
30 minutes	124.3	0.311	121.3	0.021	64.5	P<0.01
60 minutes	121	0.030	117.5	0.200	116	P<0.01
90 minutes	119.3	0.035	115.5	0.027	576.6	P<0.01
120 minutes	118.3	0.026	113.5	0.060	461.6	P<0.01
150 minutes	118.1	0.030	113.9	0.025	721.4	P<0.01
180 minutes	118.5	0.038	113.9	0.05	491.3	P<0.01

Table 3: Comparison of Diastolic Blood pressure in both g groups at various interval patients(No of Patients -45)

Diastolic BP	Group A		Group B		't' test value	P value
	Mean value	SD	Mean value	SD		
Baseline	76.74	0.030	73.48	0.035	474.4	P<0.01
10 minutes	81.38	0.042	78.65	0.042	308.3	P<0.01
30 minutes	79.78	0.038	77.22	0.027	368.3	P<0.01
60 minutes	78.59	0.290	75.80	0.258	48.2	P<0.01
90 minutes	76.80	0.059	74.38	0.220	71.2	P<0.01
120 minutes	76.44	0.158	73.08	0.072	129.8	P<0.01
150 minutes	76.58	0.128	73.80	0.03	57.17	P<0.01
180 minutes	76.62	0.130	73.68	0.079	129.6	P<0.01

Table 4: Comparative study of Heart rates in both groups at different interval of time (in minutes) (No of Patients -45)

Hart rate	Group A		Group B		't' test value	P value
	Mean value	SD	Mean value	SD		
Baseline	70.60	0.240	71.39	0.290	12.65	P<0.01
10 minutes	76.33	0.121	77.3	0.124	38.71	P<0.01
30 minutes	74.26	0.030	75.38	0.111	65.34	P<0.01
60 minutes	71.80	0.188	74.30	0.148	70.02	P<0.01
90 minutes	70.69	0.124	71.68	0.070	46.63	P<0.01
120 minutes	70.35	0.030	71.88	0.029	245.9	P<0.01
150 minutes	69.30	0.027	70.29	0.019	201.1	P<0.01
180 minutes	69.20	0.024	70.30	0.018	245.9	P<0.01

Table 5: Comparison of duration Analgesia sensory block and motor block parametric values in both groups (in minutes)(No of Patients -45)

Particular	Group A		Group B		't' test value	P value
	Mean value	SD	Mean value	SD		
Duration of Analgesic	484.4	24.8	302.6	6.80	47.4	P<0.01
Sensory Block	14.82	0.461	18.38	0.452	36.9	P<0.01
Motor Block	11.23	0.17	13.28	0.361	34.4	P<0.01

Table 6: List of side effects of analgesic in both groups with percentage(No of Patients -45)

Particular	Group A		Group B	
	No of Patients	Percentage (%)	No of Patients	Percentage (%)
Purities	-	-	-	-
Respiratory Depression	-	-	-	-
Sedation	-	-	-	-
Shivering	3	6.6	1	2.2
Headache	4	8.8	2	2.2
Somnolence	3	6.6	1	4.4
Urinary Retention	3	6.6	2	4.4
Nausea and Vomiting	5	11.1	4	8.8
Hypotension	13	28.8	12	26.6
Bradycardia	4	8.8	2	4.4

DISCUSSION

In the present study of comparative study of efficacy of Nalbuphine with hyperbric vaccine and pentazocine with hyperbaric Bupivacaine in Telangana Population. In the Visual analogue scale in group A 4(8.8%) were in grade I, 7(15.5%) in grade-2 11(24.4%) in grade-3, 23(51.1%) in grade-4. In group-B 2(4.4%) in grade-I, 9(20%) in grade-II, 20(44.4%) in grade-III, 14(31.1%) in grade-IV.(Table-1 A and B) Comparison of systolic Blood pressure mean value of group was higher in group A than group B at certain interval of 10 minutes to 180 minutes (Table -2 and 3) In the comparison of heart rate certain interval in both groups mean value of group B was higher than group B (Table-4) In the comparison of duration of analgesic, sensory and motor block mean value of group A was higher than group B. but in sensory and motor black mean value of group B was higher than group A (Table-5) In the comparative study of side effects. The side effects were more higher in percentage in group A (Table-6) those findings were more or less in agreement with previous studies[4,5,6].Bapivacaine is an amid amine anesthetic of high potency and long duration due to its high liposolubility. They develop enough intestinal pressure to cause diffusion of injected material in the dependent region but cause respiratory, nusea, vomiting and psycho mimetic reaction were also observed[7]. Pentazocine is the N-ally depravities of narcotic analgesic pentazocine is the strong analgesic with weak narcotic antagonist. It is advocated for the moderate to severe pain. Pentazocine has low abuse potential and is not controlled by narcotic regulation[8]. Hence it is much more safer than nalbuphine.As the adverse effects are concerned both groups treated with in tracheal opoids have minimal side effects, pruritis, respiratory depression, euphoria or dysphasia were not observed in the present study. Bradycardia was also reported in previous studies [9].Headache urine retention, nausea and vomiting were also reported in previous studies[10]. This double branded analgesic has provided prolonged post-operative analgesia with minimal and manageable side effects.

SUMMARY AND CONCLUSION

The comparative study has proved that group B, pentazocine with Hyperbaric Bupivacaiene

administered intrathecally (spinal) anesthesia was more efficient having prolonged, analgesic effect with minimal side effects post-surgically. But this study demands further pharmacological, patho-physilogical angiological, nutritional and genetic study because exact factors of analgesic which cause relief for certain duration is still un-clear.

REFERENCES

1. Lius Carpenter RL, Neal JM-Epidural anesthesia and analgesia their role in post-operative outcome Anaesthiology. 1995, 82(6) 1474-500
2. Wu, CL, Fleisher LA- Outcome's research in regional anesthesia and anesthesia and analgesia. Anaesth. Analg. 2000-9(s)1232-42
3. Brum DL- Spinal Block in Atlas of regional Anesthesia 2nd edition Philadelphia WB Sandler company 1999,55-62
4. Erick J.K Heel's- A preliminary review of its pharmacological properties and therapeutic efficacy, Br.J Anesth. 2005,104.368-72
5. Marhafer P, Charr VWS- Ultra sound- guided regional anesthesia current concept and future trands- Anaesth. Analg, 2007,104,1265-70
6. Raffa R B, Friedrich E-opoid nd non-opoid components independently contribute to the mechanism of action of Tramadol an atypical opoid analgesic J. Pharmacolo. 1999,37(5) 238-42
7. Nirmala B C, Narashima Reddy B, Rjappa, Jitin Chandra Bose- Comparative study of Analgesic efficacy of Nalbuphine with Hyper Bupivacaine and penalzocine cute Hyper Bupiva caine Int. J contenp surgery Jan- June. 2015, Vol3(1), 36-41.
8. Sjostroom S, Hartving P Pearson MP-Pharmacokinetics of epidural morphine and meperedine in humans. Anesthology 1987, 67,877-888
9. Ruda A Roy S Gupta K – Post –operative analgesia after pentazocane given intraethically with heavy lignocaine Ind. J Anaesth. 1991 Aug,39(4),145-146
10. Lin ML –The analgesic effect of subarachnoid administration of teracaine combined with low dosage of morphine or Nalbephine for spinal anesthesia, Mazuixue zazhi1992, Jun.30(2)101-5

Source of Support: None Declared
Conflict of Interest: None Declared