

Comparison of Ropivacaine with Lignocaine Adrenaline versus Bupivacaine with Lignocaine Adrenaline in USG Guided Axillary Approach of Brachial Plexus Block

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Abstract

Background: In the present study we have done evaluation of ropivacaine and bupivacaine in upper limb surgeries under axillary block with onset and period of blocks and hemodynamic changes. **Subjects and Methods:** The research was at all subjects of orthopedic department undergo upper limb surgery through the phase. A total 64 Subjects were elected and allocated into 2 groups arbitrarily (32 in each group). Group B received 20 ml of 0.5% bupivacaine with 10 ml of 2% Lignocaine adrenaline, while Group R received 20 ml of 0.5% Ropivacaine with 10 ml of 2% Lignocaine adrenaline by axillary route. Intraoperatively, all the vital parameter was monitored. Postoperative analgesia was evaluated visual analogue scale (VAS). **Results:** No significant dissimilarity concerning age, weight and gender allocation among 2 groups. Sensory onset block of Group R is 7.06 ± 0.08 min whereas in Group B it was 7.15 ± 0.88 min. The period of sensory block in Group R is 587.75 ± 13.37 min, while that in Group B is 589.75 ± 13.12 min, motor block phase in Group R was 596.5 ± 13.91 min while in Group B it is 598.84 ± 13.56 min. **Conclusion:** Sensory and motor onset block in ropivacaine and bupivacaine group were almost comparable and no clinical and statistical dissimilarity in the 2 groups.

Keywords: Axillary block, Orthopaedic upper limb surgery, Bupivacaine, Ropivacaine.

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Introduction

Regional Anesthesia is frequently utilized each as an subservient to general anesthesia.^[1] Utilization of axillary block seeing that the chief sedative method evades difficulty connected with general anesthesia, airway instrumentation and diminish instant post operational ache.^[2] Bupivacaine's cardiac and central nervous system noxious consequences in several subjects made scientists to expand novel LA agent having similarity to Bupivacaine devoid of substantial poisonous things. Equivalent probable substitute for

Bupivacaine was Ropivacaine. It is superior noxious threshold formed fewer cardiac and central nervous organization things, fewer motor blocks, comparable period of exploit of sensory analgesia contrast to Bupivacaine.^[3,4] Nevertheless Ropivacaine's Suspension of sensory analgesia is about 2/3 of that of Bupivacaine, as a result that was hardly effectual in comprehensive post-operative analgesia.^[5,6,7,8] we have done assessment of ropivacaine and bupivacaine in upper limb surgeries below axillary block at tertiary care Centre.

Subjects and Methods

Present randomized research carried out at tertiary care centre. Subjects entered in department of Orthopedics undergo upper limb surgery, 18–55 years, with ASA grade 1 & 2, devoid of several recognized reaction to local anesthetic medications and provide permission were incorporated in research. We considered 64 subjects arbitrarily owed them in to 2 groups by plain randomization method.

All 64 subjects separated into 2 sets of 32 each randomly. Group R: Subjects acknowledged 20 ml of 0.5% Ropivacaine with 10 ml of 2% Lignocaine adrenaline by axillary route. Group B: Subjects received 20 ml of 0.5% bupivacaine with 10 ml of 2% Lignocaine adrenaline by axillary route. With disinfected safety measure a regular axillary block were set after attaching all monitors. Intraoperative vitals were noticed. At the conclusion of research, the lingering consequence eminent and following variable of subjects to the ward, Subjects were looking in on for evaluation of post operational analgesia, and further very important factors next to needed instance period.

Statistical analysis

Postoperative analgesia evaluated by visual analogue scale. A p value of <0.05 was considered significant.

$$n = 2(a+b)^2 S.D^2 = \text{the difference the investigator wishes to } \mu_1 - \mu_2$$

Results

Table 1: Demographic Characteristic Of Study Population

Variable	Group R	Group B	p-value
Age(yrs)	39.2+15.41	36+13.35	0.378
Weight(kg)	52.69+12.03	57.38+8.76	0.079
Height(cm)	159.91+9.15	162+7.19	0.313

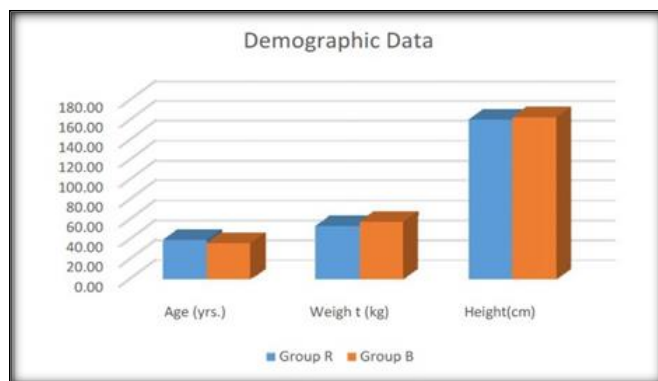
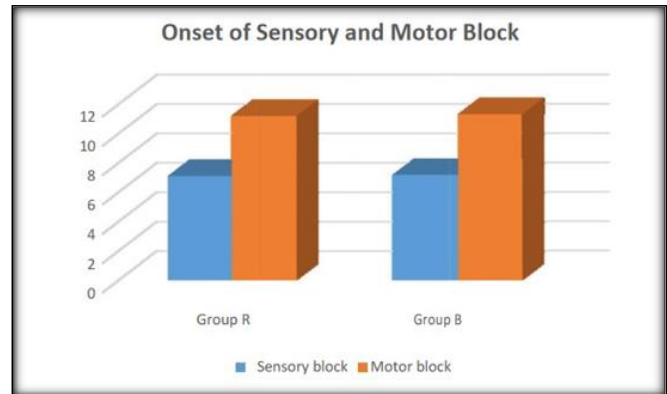


Table 2: Onset of Sensory and Motor Block in Two Groups (min) (mean ± Sd)

	Group R Mean+SD	Group B Mean+SD	p-value
Sensory block	7.06+ 0.08	7.15+ 0.88	0.566
Motor block	11.16+1.05	11.28+ 1.02	0.644



There was not any dissimilarity in age, weight and sex allocation among 2 groups. Sensory onset of group R is 7.06+0.08 minutes nearly while in Group B it is 7.15+0.88 minutes, motor onset in group R is 11.16+1.05 minutes whereas in Group B is 11.28+1.02 minutes. The motor and sensory onset was established to be equivalent in equal groups there was no clinical and statistical significant dissimilarity among two groups. There was no significant dissimilarity regarding intraoperative pulse, systolic and diastolic blood pressure in both groups at various time intervals. The period of sensory block in Group R is nearly 9.9 hours while in Group B is 9.91 hours, phase of motor block in Group R is 10 hours as in Group B is 10.1 hours and whole period of analgesia in Group R is 9.86 hours while in Group B is 9.98 hours which was not significant statistically. (p>0.05).

Table 3: Duration of Sensory and Motor Block in Two Group (min) (mean ± Sd)

Variable	Group R Mean+SD	Group B Mean+SD	p-value
Sensory block	587.75+13.37	589.75+13.12	0.548
Motor block	596.56+13.91	598.84+13.56	0.509

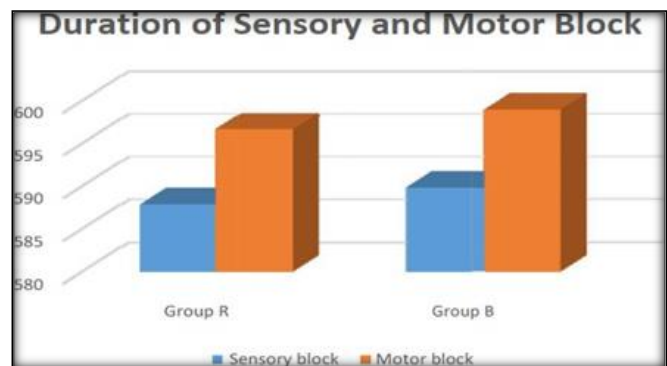


Figure: Duration of Sensory and Motor Block in two groups (min)

Table 4: Duration of Analgesia in two groups (min) (Mean ± SD)

	Group R Mean	Group B Mean	p-value
Analgesia	591.81+13.17	593.81+12.71	0.538

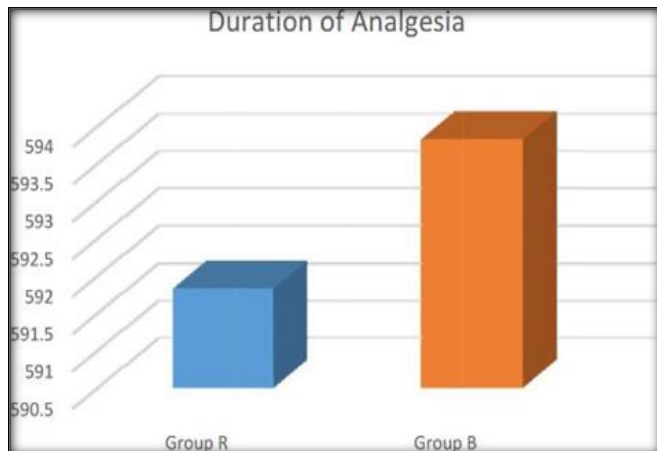
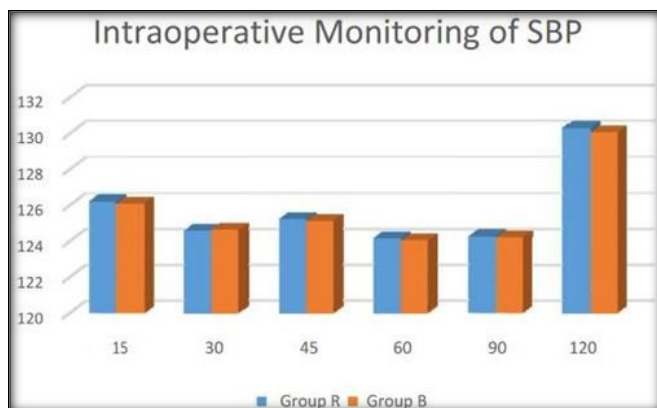
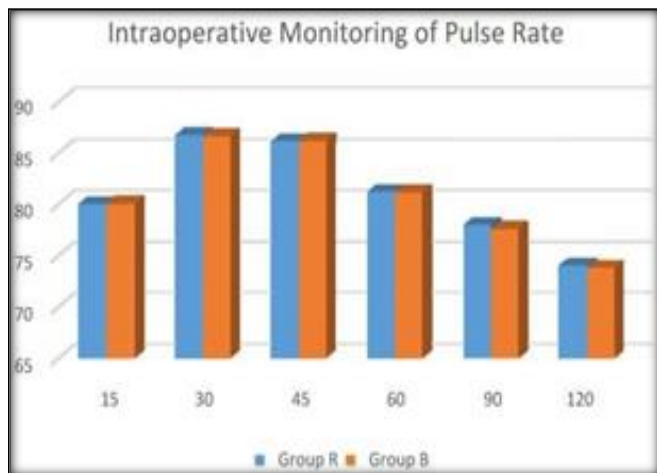


Figure: Duration of Analgesia in two groups (min)



Discussion

Ropivacaine have before now be considered at different district blockade methods therefore it could be utilized as substitute to bupivacaine, as it was connected by superior threat of cardiac and neurological toxicity.^[9] We have evaluated 20 ml of 0.5% Ropivacaine with 10 ml of 2% Lignocaine adrenaline in 32 subjects (group R) versus 20 ml of 0.5% bupivacaine with 10 ml of 2% Lignocaine adrenaline in another 32 subjects (group B).

In the present research there was no important dissimilarity concerning age, weight and sex allotment amid 2 sets. Sensory and Motor block onset in groups were almost

similar and no statistical dissimilarity in both bathces. Similar Observations made by several researches.^[10,11,12,13] Period of both blockade in both study groups are almost comparable and there was no dissimilarity in 2 groups statistically.

No dissimilarity was established in hemodynamic parameters in the 2 groups. There were no noteworthy vary in mean pulse rate mean arterial pressure during operation amid 2 sets in current research. Similar results were observed by numerous studies researches.^[14,15,16,17,18]

Conclusion

No dissimilarity among groups concerning onset of blocks, period of analgesia in subjects getting axillary block with bupivacaine or ropivacaine.

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