



# Clonidine's Effect on Onset and Duration of Epidural Anesthesia: A Randomized Controlled Trial

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## BACKGROUND

Epidural anesthesia is widely used, anesthetic technique<sup>1</sup>. It is beneficial for long duration procedures because the epidural catheter allows additional administration of local anesthetic<sup>2</sup>. However, it has a slower onset of action and requires a larger volume of local anesthetic<sup>3</sup>.

## AIMS:

The objectives of this study are to determine if clonidine can hasten the onset and prolong the duration of action of levobupivacaine epidural anesthesia among patients undergoing elective lower limb orthopedic surgery.

## METHODS

- Approval from Research Ethics and Review Committee for Double Blind Randomized Controlled Trial
- Recruitment: 36 Participants
- Randomization: Clonidine group or Control group

### INDEPENDENT VARIABLE

-Levobupivacaine 0.5% (Isobaric) 15ml  
+ **Clonidine** 30µg (0.2ml)  
  
-Levobupivacaine 0.5% (Isobaric), 15ml +  
0.2 mL **0.9% Plain Normal saline solution**



### DEPENDENT VARIABLE

-Onset of Action of Levobupivacaine epidural anesthesia  
  
-Duration of action of Levobupivacaine epidural anesthesia

## RESULTS

Groups	N	Mean	SD
Experimental	18	5.62	1.14
Control	18	11.33	1.22

*This table shows the average time in minutes of the onset of action levobupivacaine anesthesia in experimental and control groups among 36 patients scheduled for elective orthopedic surgery under epidural anesthesia*

	N	t	p
Experimental Group	36	14.51	.000
Control Group			

*This table shows the difference in the average onset time of levobupivacaine anesthesia between experimental and control groups,  $p < 0.05$ , thus there is a significant difference in the onset time between the experimental and control groups*

### Effect of Clonidine Adjuvant and Placebo on the Duration of Action Levobupivacaine Epidural Anesthesia

	Treatment Group	N	Mean	Std. Deviation	Std. Error Mean
Time To 2-Segments	Experimental Group	18	176.4706	25.72479	6.23918
Dermatomal Regression	Control Group	18	67.0588	19.92633	4.83285

### Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of Time To Two Segments Regression is the same across categories of Treatment Group.	Independent-Samples Mann-Whitney U Test	.000 <sup>1</sup>	Reject the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

<sup>1</sup>Exact significance is displayed for this test.

The p-value is statistically significant, thus there is a significant difference in the duration of action between levobupivacaine epidural anesthesia with clonidine adjuvant versus levobupivacaine alone.

## CONCLUSIONS

Clonidine at a dose of 30 microgram when used as an adjuvant to levobupivacaine epidural anesthesia can hasten its onset and prolong the duration of action among patients undergoing elective lower limb orthopedic surgery without significant side effects.

## REFERENCES:

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