

## **ABSTRACT:**

### **THE HEMODYNAMIC EFFECTS OF 2% LIGNOCAINE WITH 1:80000 ADRENALINE VERSUS 1:200000 ADRENALINE IN HYPERTENSIVE PATIENTS UNDERGOING MINOR ORAL SURGICAL PROCEDURES: A PROSPECTIVE, RANDOMIZED AND DOUBLE BLINDED STUDY.**

#### **Aims and Objectives:**

This study is aimed to evaluate the cardiovascular changes in hypertensive patients reported to Sri Ramakrishna Dental College and Hospital for dental procedures injected with 2% lignocaine with 1:80000 adrenaline in comparison to 2% lignocaine with 1:200000 adrenaline. 2% lignocaine with 1:80000 adrenaline is the most commonly used local anaesthesia in dental institutions as well as private practices. This study is to compare and analyze the cardiovascular changes with vital signs, electrocardiogram & oxygen saturation and the pain gradient in cardiac patients treated with one or more hypertensive drugs. The efficacy and safety of two concentrations of adrenaline in 2% lignocaine in minor oral surgical procedures is compared and evaluated.

#### **Materials and methods:**

Fifty patients with controlled hypertension and under medication were randomly divided into 2 groups. Each group received 2.5ml of 2% lignocaine with 1:80,000 adrenaline and 2% lignocaine with 1:200,000 adrenaline randomly. In each group hemodynamic parameters such as Heart rate (HR), Respiratory rate (RR), Systolic blood pressure (SBP), Diastolic blood pressure (DBP), Oxygen saturation (SpO<sub>2</sub>), Mean arterial pressure (MAP), Rate pressure product (MAP) and Pressure

rate quotient (PRQ) were recorded prior and 15 minutes after the administration of local anesthetic with two different concentrations of adrenaline. The other parameters such as the onset of anaesthesia, pain scale and the need for additional lignocaine were also recorded in both the groups. A 12 lead ECG was used to check for any abnormal changes before and after administration of LA with different concentrations of adrenaline.

### **Results:**

In this study comparing the efficacy and hemodynamic effects of 2% lignocaine with 2 different concentrations of adrenaline, we noticed no difference in the time of onset of anaesthesia between the two groups and minor surgical procedure done were pain free in both the groups. Likewise, increase in the clinical hemodynamic parameters such as HR and SBP were noted while the DBP, SpO<sup>2</sup> and RR remained unchanged. The MAP was within the normal limits. Though changes were noted in intergroup comparison, they were not significant. The ECG showed T wave inversion in 2 patients under Group A and one patient under Group B.

### **Conclusion:**

To conclude, even though variations in hemodynamic parameters noted among the patients under both the groups were not significant, the local anaesthetic with lower concentration of adrenaline showed similar efficacy to the local anaesthetic with 1:80,000 adrenaline. Thus LA with 1:200,000 adrenaline provides similar type of anaesthesia as of LA with 1:80,000 adrenaline but with less effect on cardiovascular parameters than the later.

**Key Words:** Local anaesthesia, Hypertension, Adrenaline, Cardiac Arrhythmia, ECG