

### **Inadvertent Use Of Lidocaine Spray In A Pediatric Dental Patient: A Caution!!!**

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#### **Abstract**

Topical anaesthetics are available in different forms like sprays, gels, creams or ointments, once applied, it acts on the peripheral nerves and reduce the pain sensation. Although topical anaesthesia is widely used by the practitioners of different specialities but in dentistry, topical anaesthetic spray is preferred by the majority to control local pain secondary to needle prick, orthodontic bands placement, rubber-dam clamps or to control gag reflex etc. thereby controlling patient's phobia to some extent, especially in children.

This communication aims to focus on the fact that inadvertent use of topical anaesthetic spray without calculating the correct dose may lead to adverse effects especially in pediatric patients who are more likely to experience toxic reactions because of their immature physiology and lower body weight.

#### **Keywords**

Anaesthetic Spray, Lidocaine, Overdose, Pediatric.

## Introduction

Topical anaesthetics used either in the form of sprays, gels, creams or ointments, act on the peripheral nerves and reduce the sensation of pain at the site of application. In dentistry, topical anaesthetic spray is commonly used to control local pain caused by needle prick or placement of orthodontic bands, rubber-dam clamps or to control gag reflex etc. thereby controlling patient's phobia to some extent, especially in children.

Commonly, these topical anaesthetic sprays contain lidocaine as active ingredients although newer products with modified ingredients and application methods have been introduced. Dentists should be aware that even topical anaesthetic spray might induce allergic reactions or adverse effects as a result of an overdose especially in pediatric patients due to their lower weight.

## Discussion

Use of topical anaesthetic spray in day to day dental practice especially in pediatric patients to mitigate pain and phobia is a very common technique but needs to be opted with caution.

Fact remains the same when it comes to maximum permissible dosage (MPD) of injectable local anaesthetic administered. For lignocaine it is restricted to 7mg/kg body weight or maximum 500mg in pediatric patients with or without vasoconstrictor.<sup>1</sup> Local anaesthetic spray, commonly available as 15% Lignocaine spray without vasoconstrictor (Nummit®, ICPA, India) expels 7.5mg drug per spray<sup>2</sup>, which means for a 10kgs child  $4.4 \times 10 = 44\text{mgs}$  is the MPD which is approximately equivalent to 5 to 6 sprays of topical anaesthesia.

While treating a pediatric patient, main concern is the relative ease of inducing an overdose. Before administering topical anaesthetic spray to a child, the

dentist should determine the child's weight and carefully calculate the maximum dose adding up both topical and injectable anaesthesia to be administered, to help prevent inadvertent overdose.

Although quantifying pain in children remains one of the most challenging tasks for the clinicians but generally self-reports and behavioural measures of the child, such as crying, shaking or agitation sometime demands extra use of topical anaesthesia where each spray should be administered with utmost care according to the preoperative dose calculation for that patient.

Moreover administering the spray too quickly and repeatedly produces ample amount of drug loaded aerosol which the patient can inhale, swallow or it can get absorbed sublingually without the notice of the operator. This in turn may lead to patient complaining of respiratory distress secondary to anaesthetised nasopharynx and or oro-pharynx which may be psychological but creates panic.

## Conclusion

Considering these common scenarios in a dental setup, author recommends to either use the topical anaesthetic spray with utmost care after determining the correct dosage and keeping a count over the number of sprays and the speed of the same. However choosing newer topical anaesthetic preparations like gels, creams or ointments which can be applied with a better control and eliminate the chance of inhalation, swallowing or systemic absorption.

No drug is free of adverse effects but our little caution can avoid such iatrogenic complications

especially with this magical friend of a dentist – ‘The Local Anaesthetic’.

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