



## REVIEW ARTICLE

### KNOWLEDGE, AWARENESS AND PRACTICE AMONG DENTAL PRACTITIONER REGARDING VARIOUS TOPICAL ANAESTHETIC AGENTS USED IN DENTAL CLINICS

\*<sup>1</sup>Gayathri R Menon, <sup>2</sup>Dr. Dhanraj, M. and <sup>3</sup>Dr. RevathyGounder

<sup>1</sup>BDS II year, Saveetha Dental College, Chennai 600077, Tamil Nadu

<sup>2</sup>Prosthodontics Department, Head Of The Department, Saveetha Dental College, Chennai

<sup>3</sup>Prosthodontics Department, Senior Lecturer, Saveetha Dental College, Chennai

#### ARTICLE INFO

##### Article History:

Received 17<sup>th</sup> January, 2017

Received in revised form

19<sup>th</sup> February, 2017

Accepted 22<sup>nd</sup> March, 2017

Published online 30<sup>th</sup> April, 2017

##### Key words:

Benzocaine, Lidocaine or Tetracaine

#### ABSTRACT

**Aim:** To determine the knowledge and awareness of various topical anaesthetic agents used in dentistry among the dental practitioners.

**Background:** Topical anaesthesia is a numbing gel it is used to numb your gums or other tissues before an injection so that u can't feel the needle glide in and to relieve the pain during procedures. These products contain drugs such as benzocaine, lidocaine or tetracaine.

**Materials and method:** A questionnaire was made consisting of 10 questions. It was send to 50 dental practitioners working in Chennai and were asked to answer.

**Result:** It was found that 53.2%of dental practitioners are not aware of adverse effect of topical anesthetics. 73% of patients dislike topical anesthesia due to its taste.

**Conclusion:** It was found that all the participants who answered the survey had adequate awareness about topical anesthesia. The mode of administration of topical anesthetics should be improved. The taste of it should also be improved in the case where topical anesthetics are to be given for children.

Copyright©2017, Gayathri R Menon et al. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Citation: Gayathri R Menon, Dr. Dhanraj, M. and Dr. RevathyGounder, 2017. "Knowledge, awareness and practice among dental practitioner regarding various topical Anaesthetic agents used in dental clinics", *International Journal of Current Research*, 9, (04), 49490-49492.

#### INTRODUCTION

Giving anaesthesia in dental procedure produces a greater negative response (McDonald and Avery, 2000). Pain is one of the most common reason of dental fear. It may lead to avoidance of treatment by the patients due to the past traumatic dental experiments (Malamed, 2014). Topical anaesthesia is a numbing gel it is used to numb your gums or other tissues before an injection so that u can't feel the needle glide in and to relieve the pain during procedures, they can also be used in various other dental procedures that illicit pain of lower magnitude such as suture removal, extraction of mobile primary teeth and rubber dam (Milgrom *et al.*, 1997; Meechan, 2000; Quaba *et al.*, 2005). It is being used in dental practice to reduce the acute and chronic pain and also to facilitate atraumatic dental treatment. They induce a loss of sensation in the area where it is applied upto depth of 2-3mm (Hmud and Walsh, 2009). The mode of action is similar to that of local anaesthesia and it penetrates the mucosa to a depth of 2-3mm and then it binds with the sodium gates ion channels of C fibres and inhibits nerve depolarization and blocks the transmission of pain sensation to brain (Katzung, 2007; Haas, 2002). There are

various types of topical anaesthetics that are available such as lignocaine, benzocaine, xylocaine, tetracaine, dyclonine etc. Topical anaesthetics are available in different forms such as spray, ointment, gel, patch, cream. Sprays are nowadays available in different flavours such a fruity, mint etc (Topical anaesthetics in the Dental office, 2012). Systemic toxic reactions which are associated with topical anaesthetics are unknown for most commonly used benzocaine (Malamed, 1997). Topical anaesthesia which are based on lidocaine are vasodilators and are used in stronger concentrations. They are absorbed rapidly into the systemic circulation when they are applied on the oral mucous membrane (Malamed, 1997). There is a need to understand the use of topical anaesthetics from the point of view of a dentist to give a proper guidelines on the use of it in day to day dental procedures for the benefit of both the dentist and the patient.

#### MATERIALS AND METHODS

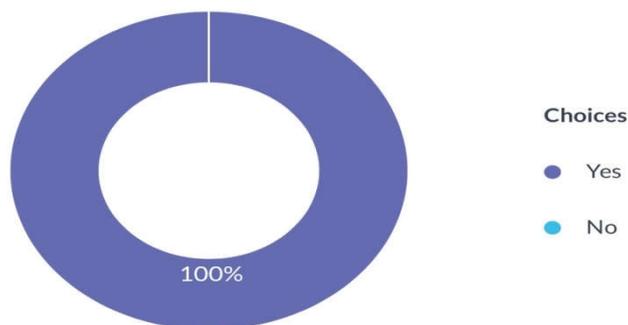
A questionnaire was made consisting of 10 questions. It was send to 50 dental practitioners and were asked to answer. The survey consisted of questions such as the awareness of topical anaesthesia, duration of its action, adverse effects, efficiency of giving topical anesthesia prior to LA etc. The data were then computed for percentage responses.

\*Corresponding author: Gayathri R Menon,

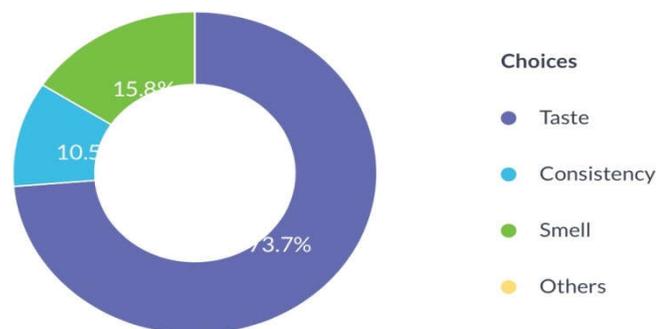
BDS II year, Saveetha Dental College, Chennai 600077, Tamil Nadu

### RESULTS

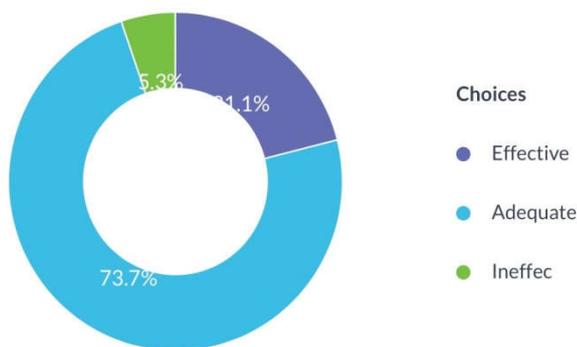
Are you aware of topical anesthetics?



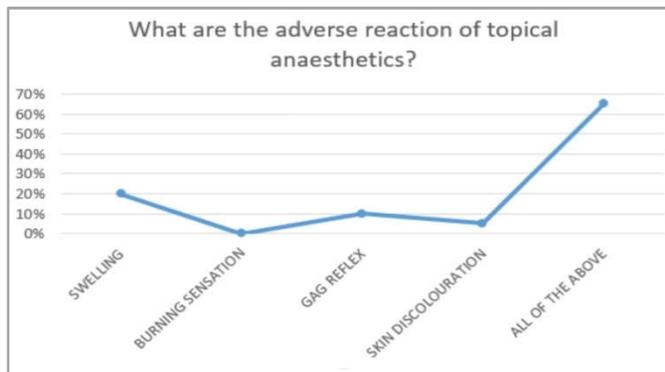
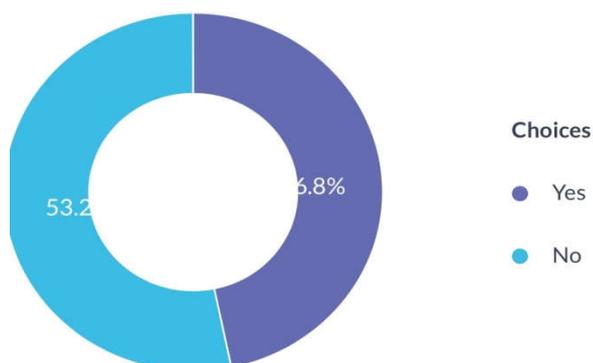
What are the reasons for the patients to dislike topical anaesthetics?



Is topical anaesthetics effective when given prior to LA?



Are you aware of the various adverse effects of topical anesthetics?



### DISCUSSION

From this study it was found that almost all the students were aware of topical anaesthetics. It was found that 73%of patients dislike topical anaesthetics because of its taste and 15.8% of people dislike it because of smell. Topical anaesthetics has got various adverse effects such as swelling,skin discolouration,gag reflex etc. 73% of dental practitioner had answered that the effectiveness of topical anaesthetic agents are adequate. From Kavita kohli’s study it was found that the topical anaesthetic that is used by most and the preferred brand was Hurricane, however their perception of the effectiveness of topical anaesthetics varied. There also appears to be a need to develop newer and better mode of topical anaesthetic delivery system in the pediatric dental population. In her study it says that 98% topical anaesthesia had no much of adverse effect on patients but in rare cases like 2% it can cause problems. From her study it was found 90% of patient dislike topical anaesthesia due to it taste (KavitaKohli *et al.*). Most of the studies says that topical anaesthetics are most important armamentarium for pediatric dentists to make dental procedures atraumatic for the children (Sunny Priyatham and Sivakumar Nuvvula; Rosivack *et al.*) According toMeechan JG study it was said that the use of topical anaesthetics does not provide pain-free dental local anaesthesia. The efficacy depends upon the duration of application and the gauge of needle used (Meechan). Few studies say that Benzocaine gel has the rapid onset of action. EMLA 5% cream has been proved to be superior in pain reduction compared to benzocaine and lignocaine.

Taste acceptance was found to be better with benzocaine gel (Nayak and Sudha). There are also studies which says that lidocaine and benzocaine are equally efficient in reducing pain that is caused by insertion of needles into the palate (Adalberto Luiz Rosa *et al.*). According to Ngugi John Gakera study which says that the preferred form of topical anaesthetic among dentists werefound to be benzocaine and lidocaine, with some of respondents preferring gel/ointment form as the preferred preparation. Some of the reasons given for preferring gel were better analgesic effect, ease of application, good control of anaesthetic in the required area and target delivery. The study done by Ngugi John Gakera says that intra-oral topical anaesthetic can be used for other purposes other than prior to giving local anaesthetic injections. The procedures in which topical anaesthetic was more used are extraction of mobile primary teeth, scaling and root planning and suture removal. The procedures in which the use of topical anaesthesia are under-utilized are dry-socket dressing, orthodontic procedures and relieving of gag reflex. Other uses revealed include relieving pain for new denture wearers, and relieving pain from canker sore (Ngugi John Gakera).

## Conclusion

Adverse reactions to topical anaesthetic noted among practitioners treating patients are very low. Many practitioners treating children are still looking for the “ideal topical anaesthetic” with improvements in taste, the ability to stay localised. There also appears the need to develop better mode of topical anaesthetic delivery system in the pediatric dental population.

## Acknowledgment

We would like to thank all the participants for their cooperation and management of saveetha dental college.

## REFERENCES

- A survey of local and topical anesthesia use by pediatric dentists in the United States Kavita Kohli DDS Peter Ngan DMD Richard Crout DMD, PhD Christopher C. Linscott DDS
- An analysis of the effectiveness of two topical anesthetics. R. G. Rosivack, S. R. Koenigsberg, and K. C. Maxwell
- Clinical Effectiveness of Lidocaine and Benzocaine for Topical Anesthesia Adalberto Luiz Rosa, DDS, MSc, PhD,\* Cassio Edward Sverzut, DDS, MSc,\* Samuel Porfirio Xavier, DDS, MSc,\* and Marco Aurelio Sicchiroli Lavrador, PhD
- Evaluation of three topical anaesthetic agents against pain: A clinical study, R Nayak, P Sudha
- Haas DA. An Update of Local Anaesthesia in Dentistry. J Can Dent Assoc. 2002; 68(9):546-51
- Hmud R, Walsh LJ. Dental Anxiety: causes complications and management approaches. Journal of Minimum Intervention Dentistry. 2009; 67-70.

- Intraoral Topical Anaesthesia In Pediatric Dentistry: Review Sunny Priyatham\*1 And Sivakumar Nuvvula
- Intra-oral topical anaesthetics: a review. Meechan JG.
- Katzung BG. Local anaesthetics. In White P editor. Basic and Clinical Pharmacology. 10th ed. San Francisco: Mc-Graw Hill Companies; 2007. 412-424.
- Malamed SF. Handbook of Local Anaesthesia: Elsevier Health Sciences; 2014. sixth Edition, Mosby, St. Louis. p33-43.
- Malamed SF: Systemic Complications. In the Handbook of Local Anesthesia. 4th Ed., SF Malamed, St. Louis: Mosby Co., 1997, pg 265.
- Malamed, SF: Basic Injection Technique. In Handbook of Local Anesthesia. 4th Ed., SF Malamed, St. Louis: Mosby Co., 1997, pg 134 and 140.
- McDonald, RE and Avery, D: Local Anesthesia for the Child and Adolescent. In Dentistry For The Child and Adolescent. 7th Ed., RE McDonald and D Avery, St. Louis: CV Mosby Co., 2000, pg 283-284
- Meechan J G. Intra-Oral topical anaesthetics: a review. Journal of Dentistry. 2000; 3-14.
- Milgrom P, Coldwell S, Getz T, Weinstein P, Ramsay D. Four Dimensions of Fear of Dental Injections. Journal of American Dental Association. 1997; 756-766.
- Quaba O, Huntley JS, Bahia H, McKeown DW. A user's guide for reducing pain of local anesthetic injection. Emerg Med J. 2005; 22:188-189
- Topical anaesthetics in the Dental office. University of Columbia. 2012. Web. 7 July 2013
- Usage And Perception Of Intra-Oral Topical Anaesthesia Among Dentists In Nairobi, Ngugi John Gakera

\*\*\*\*\*