



DIFFERENT TECHNIQUES OF LOCAL ANESTHESIA TO REDUCE FEAR AND ANXIETY IN PEDIATRIC PATIENT.

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ABSTRACT **Aim** - The purpose of this study was to compare the reaction of children separated in different groups, who received anesthesia through different clinical technique.

Method – The study was conducted on 45 children's (6-10 years) who visited the Department of Pedodontics and Preventive Dentistry at Bharti Vidhyapeeth University Dental College and Hospital, Pune. Children were divided into nine groups where nine different technique of administration of local anesthesia were performed.

Results- No statistical difference was seen between before and during treatment except with use of topical anesthesia before administration of local anesthesia.

Conclusion – No specific protocols can be same for all children as each one is different. But tell show do technique along with behavior modeling and use of topical anesthesia can be successful.

KEYWORDS : local anesthesia, pediatric patients, behavior

INTRODUCTION

In dentistry, the injection of a local anesthetic represents the greatest source of fear and anxiety, especially in children and adolescents, because it is mainly associated with pain and discomfort. Furthermore, severe anxiety and fear may increase pain perception.[2,5,12]

Although the aim of local anesthesia is to eliminate pain during dental procedures, the fear connected to the needle puncture is frequently considered a reason for not visiting the dentist

Dental fear is a reaction to known danger. It is a widespread phenomenon in children and poses many problems in rendering treatment to the child. The primary objective in Pediatric Dentistry is not just rendering the treatment but to create positive impact about Dentistry. Etiology of fear is complex and multifactorial. It does not only concern with fear of pain but also entail separation from parents.[5]

Giving local anesthesia in Pediatric patient is considered as one of the most difficult thing. Many procedures in Pediatric Dentistry requires administration of local anesthesia like Pulp therapy of primary tooth, Extraction, stainless steel crown and minor oral surgical procedures. Primary objective of Pediatric Dentist is not just completing the Local Anesthetic procedure but also to create positive impact on the child without creating any fear or anxiety for future dental treatment.

This study was conducted in children who have relatively limited communication skills. Their inability to cope with threatening dental stimuli often manifests as behavior management problems. Assessment of children based on their behavior is one of the most important skills for a pediatric dentist. Hence delivering local anesthesia with least amount of pain can be imperative and key for effective dental treatment.

Various measures have been developed for uniform method of assessing and grading behavior of the child. For this study Frankl's Behaviour Rating Scale was adopted at time of administration of local anesthesia.

MATERIALS AND METHOD

This study was carried out in the department of Pedodontics and Preventive Dentistry, Bharati Vidhyapeeth Dental College and Hospital, Pune.

The study was first explained to the parents and then an informed consent was obtained from them. 45 children aged 6-10 years with atleast one pulpally involved tooth were included in the study. All the children belonged to lower socioeconomic status. Dental examination was carried out after drying teeth with air and using a mirror and explorer. DMFT and def indices were recorded.

Patients were divided randomly in nine groups with 5 children each where nine different techniques of administration of local anesthesia were performed. “

1. Group A – without video modeling.
2. Group B – with video modeling.
3. Group C – with topical anesthesia.
4. Group D – without topical anesthesia.
5. Group E – first dental visit
6. Group F – history of previous dental visit.
7. Group G – needle shown directly.
8. Group H – needle not shown directly.
9. Group I – dental threat.

Tell Show Do” technique stated by Harold Adleston was used to help the children work through their fears and curiosities in a new situation. The study was conducted by two dentists. One of them gave all explanations, spoke with the children's and carried out the anesthesia procedure. Other dentist was watching and assessing the child's reaction. It was rated with code from 1 to 4 on Frankl scale adopted for local anesthesia.

Behavior	Rating	Description
Definitely negative	1	Refusal of anesthesia administration, crying forcefully, fearful, or any other evidence of extreme negativism
Negative	2	Reluctant to accept anesthesia administration, uncooperative, some evidence of negative attitude but not pronounced, i.e. sudden withdrawn
Positive	3	Acceptance of anesthesia administration, at times cautious, willingness to comply with the dentist, at times with reservation but patient follows the dentist's directions cooperatively
Definitely positive	4	Good rapport with the dentist, interested in the dental procedures, laughing and enjoying the situation.

Table 1: Frankel's Behaviour Rating

RESULTS

- We performed the statistical analysis using ANOVA and WILCOXON tests.
- No statistical difference was seen between before and during treatment with respect to Frankl's rating except for method 4 (without use of topical anesthesia).

Method	Median Franklin Grade		p-value
	Before	After	
1	2	2	0.157
2	3	3	0.083

3	3	1	0.18
4	3	2	0.034*
5	2	1	0.063
6	3	2	0.083
7	2	1	0.18
8	2	2	0.083
9	2	1	0.18

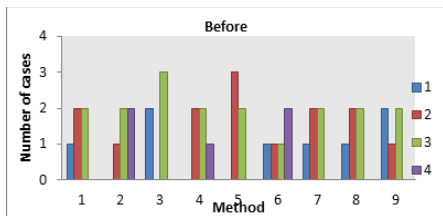


Fig 1

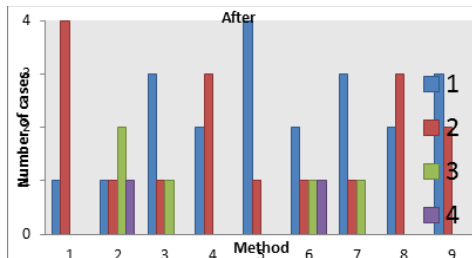


Fig 2

Method	Number of cases	Before		p-value	Method	Number of cases	After		p-value
		Mean	SD				Mean	SD	
1	5	102	11.18	0.227	1	5	111.4	12.28	0.999
2	5	99.20	5.76		2	5	107.80	11.37	
3	5	101.20	6.14		3	5	108.40	9.66	
4	5	98.20	2.70		4	5	108.40	9.85	
5	5	99.40	4.10		5	5	111.00	8.48	
6	5	91.20	6.18		6	5	109.00	11.81	
7	5	93.40	5.59		7	5	110.80	8.87	
8	5	99.40	6.56		8	5	111.00	9.02	
9	5	94.00	7.07		9	5	110.80	10.99	

Table 3

No significant difference was seen between mean pulse rate both before and during treatment

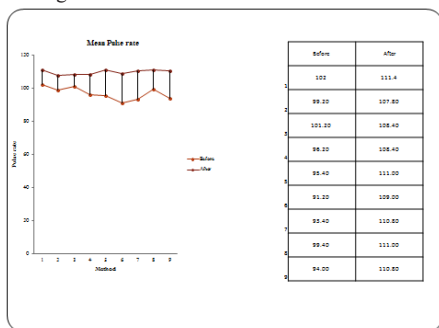


Fig 3

DISCUSSION

Administration of local anesthesia is one of the most challenging part in pediatric dentistry. The term injection or even a sight of needle can make the patient anxious or even worse pain felt during injection can make them uncooperative.[6] The real challenge is to make the injection as comfortable as possible for the child. The purpose of this study was to find the best protocol at the time of administration of local anesthesia.

It has been shown that modeling is an effective behavior management technique. It is a type of behavior modification whereby a young patient can learn about the dental experience by viewing other children receiving treatment. The goal is for the patient to reproduce the behavior exhibited by the model (Bandura in 1967). In this study

however, group A and group B showed no significant difference statistically.

Significant difference was seen between group C and group D. Patients were calmer when topical anesthetic was applied for two minutes before the administration of local anesthesia compared to those in whom topical anesthetic was not applied before injection.

Patients during their first visit are more fearful and anxious as they are not familiar with dental surroundings. The child's first dental visit should be organized in such a way that it becomes an enjoyable experience for him. Many first visits are nothing more than introductory ice breakers to acquaint child patients with the dentist and the practice. Administration of local anesthesia should be avoided in the very first appointment as patients might develop fear. In this study however, no significant difference was seen statistically between group E and group F.

Children who were not shown the needle before getting injected exhibited better behavior than children who were shown the needle directly. [10]In this study there was no significant difference statistically, but it is always advisable to just inform the patient about the administration of anesthesia using euphemism and not show the needle directly.

Parents usually try in some way to prepare their child for dental visit. Some parents, through their own fear, do more harm than good in this attempt. Lencher (1975) stated that incorporation of attitudes and behavior patterns, siblings or peers has a significant impact on the behavior of the child. Parents should be informed to be as casual as possible and not to use dental treatment as a threat.

CONCLUSION

It is obvious that children of different age groups need to be managed differently but every child of the same age group is also different. No one behavior management technique will work for all children. Thus it is the responsibility of the dentist and dental staff to make the child's dental experience as comfortable as possible. This will help the child instill a positive dental attitude.

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