

PARENTAL PREFERENCE FOR TREATMENT UNDER GENERAL ANAESTHESIA FOR CHILDREN BETWEEN 2-5 YEARS OF AGE

¹Niharika Kotian, ²Deepa Gurunathan, ³EMG Subramanian

¹Saveetha Dental College and Hospitals, Saveetha Institute of Medical and Technical Sciences, Saveetha University Chennai-77

²Professor, Department of Pedodontics, Saveetha Dental College and Hospitals, Saveetha Institute of Medical and Technical Sciences, Saveetha University Chennai-77

³Professor, Department of Pedodontics, Saveetha Dental College and Hospitals, Saveetha Institute of Medical and Technical Sciences, Saveetha University Chennai-77

¹151811001.sdc@saveetha.com

²deepag@saveetha.com

³subramanian@saveetha.com

ABSTRACT

Performing dental procedures on children is usually a challenge for dentists especially on those children who are anxious and lack the ability to cooperate. Depending on the child's emotional and psychological state of mind and the usual behavior management techniques may not help in carrying out the dental procedures effectively. In these circumstances, an alternative such as conscious sedation and general anesthesia may become necessary. This study was undertaken to assess dental treatment under general anaesthesia preferred by parents for their children. Data was collected from patient management software and analysed using SPSS software. Chi square test was done to check the association and a p value of < 0.05 was considered to be statistically significant. All children who underwent general anaesthesia from September 2019 to February 2020 were included in the study. Assessment for the reason of general anaesthesia was done. Parental preference for general anaesthesia was also assessed. It was observed that out of 80 children, parents of 53 children preferred treatment under general anaesthesia. Parents preferred treatment under general anaesthesia more for male children as compared to female children. Parents preferred general anaesthesia more in the age group of 2 to 3 years as compared to 4 to 5 years. Single visit treatment was the most preferred reason for general anaesthesia. We observed that parents preferred treatment under general anaesthesia for children between 2-5 years of age.

KEYWORDS: Chair side treatment, Children, General anaesthesia

INTRODUCTION

Dental caries is the most common oral health disease in children worldwide. (Panchal, Jeevanandan and Subramanian, 2019). This can be due to many reasons like feeding practices, maintenance of improper oral hygiene, salivary flow rate and dietary factors. (Govindaraju and Gurunathan, 2017; 'Fluoride, Fluoridated Toothpaste Efficacy And Its Safety In Children - Review', 2018), (Subramanyam *et al.*, 2018) Dental neglect amongst patients as well as their parents is also one of the reasons for dental caries in children at a very young age. (Gurunathan and Shanmugaavel, 2016) Most children can undergo dental treatment in the chair side under local anaesthesia. Some children tend to be uncooperative for treatment due to fear and anxiety, and such children can be managed using behaviour management techniques. (Ravikumar, Jeevanandan and Subramanian, 2017) Patients requiring treatment under general anaesthesia are usually those children who are very young in age or those suffering from physical, mental, cognitive or emotional immaturity or disability or those with extreme anxiety. Children requiring full

mouth rehabilitation are also recommended for treatment under general anaesthesia. Certain children requiring surgeries in the oral cavity are also recommended to be treated under general anaesthesia.(Christabel and Linda Christabel, 2015; Packiri, 2017)Children requiring general anaesthesia usually suffer from early childhood caries. Medically compromised children are treated under general anesthesia more effectively and efficiently(White *et al.*, 2016)

General anaesthesia can be induced using various techniques like rectal induction, oral induction, nasal induction , inhalation induction, transmucosal induction , intravenous induction and intra muscular induction.(Adewale, 2012)Some of the advantages of treatment under general anesthesia include efficiency and high quality preventive and restorative care rendered by the dentist and convenience for the patient.The parental approach towards dental treatment of a child plays a major role . Parents are usually well versed with all the treatment procedures in recent times.In some scenarios , it's the parents who suggest the practitioners their choice of treatment for the child. (Vellingiri and Gurunathan, 2015).This study is aimed to assess parental preference for treatment under general anaesthesia for their children.

Materials and methods

The study was conducted in the Department of Pediatric Dentistry,Saveetha Dental College . The ethical approval was given by the Institutional Scientific Review Board. A total of 1268 patient treatment records between june 2019 and march 2020 were reviewed . There were three reviewers involved in the study of which one was an external reviewer. The data for the study was collected from patient management software of the university that is used to record the details of the patient. Children between 2-5 years of age undergoing treatment under general anaesthesia were included in the study.

A total of 80 children were included in the study whose treatment was done under general anaesthesia . The data was segregated and tabulated . The parameters assessed were age, gender, parental preference and reason for general anaesthesia. Grouping of parameters was done in an excel sheet. The data was then transferred to SPSS software 2.0 and statistical analysis was performed.Chi square statistical analysis was done for the present study. The above analysis was performed using a statistical software (SPSS inc version 2.0, Chicago IL USA) .

Results and Discussion

It was observed that out of 80 children, parents of 53 preferred treatment under general anaesthesia . The remaining 27 children were treated under general anesthesia rather than chair side treatment as those children lacked cooperative ability.

Based on the reason for preference of general anaesthesia it was observed that single visit treatment was the reason stated by most parents followed by lacking cooperative ability, requirement of painless , full mouth rehabilitation , better quality of life and residing out of state. (Figure 1)

On the basis of gender , it was observed that parents preferred general anesthesia as an option more for males(36.25%) as compared to females(30%) ($p=0.747$) (Graph 1)

On the basis of age, it was observed that parents preferred general anaesthesia as an option more for children in the age group of 2 to 3 years(42.5%) rather than 4 to 5 years(23.75%) ($p=0.814$) (Graph 2)

Caries in children usually below six years of age tend to be rapid and progressive. Treating such young children requires a lot of behavior management methods to be followed. General anaesthesia is a pharmacological method of behavior management. Certain advantages of treating a child under general anaesthesia is avoidance of multiple visits and painless procedure. The use of rotary instruments also assists in managing the time required to perform pulp therapy procedures under general anaesthesia for a child. (Jeevanandan, 2017),(Govindaraju, Jeevanandan and Subramanian, 2017a),(Govindaraju, Jeevanandan and Subramanian, 2017b),(Jeevanandan and Govindaraju, 2018),(Govindaraju, 2017),(Lakshmanan *et al.*, 2020)

With the growing awareness in the society among parents regarding health care and also access to information, parental satisfaction plays a pivotal role. Obtaining parental satisfaction will help in achieving a child's oral health care needs with an appropriate treatment plan. In recent times parents are becoming more concerned about their children's oral health and are more aware of preventive procedures to prevent caries. This includes sealants, regular prophylaxis and fluoride applications that might include the regulation of levels of fluoride in drinking water itself. (Somasundaram *et al.*, 2015) General anaesthesia is another treatment procedure parents are showing interest towards in the last few years .

In treating children, ensuring a painless procedure is of prime importance for all dentists. Pain management in children helps in managing the behaviour of the child better in an operatory. (Saurabh and Ruchi, 2016) While performing the procedure if pain is not controlled, the child might turn uncooperative or anxious which would further interfere in providing quality treatment by the dentist. Dental procedures performed under general anaesthesia for such patients would in turn facilitate dentists to provide proper dental care and ensure a better quality of life. Treatment under general anesthesia permit dentists to treat patients who otherwise cannot be treated on the chair side , which include highly anxious children, children having phobia towards dental treatment, children lacking ability to cooperate, patients with certain developmental defects, patients with musculo control problems and patients with systemic conditions that may be enhanced or triggered by anxiety. (Forsyth *et al.*, 2012) Many parents electively request treatment under general anaesthesia in order to reduce stress and anxiety. This in turn increases the comfort of the child. Comfort of the child is of prime importance to any parent. Treating a child under general anaesthesia is considered to be a very efficient treatment modality as it takes only a single visit to complete the treatment and does not require cooperation from the child. (Morsy, Dowidar and Bakry, 2015)

General anesthesia despite having numerous advantages is usually considered as the last resort of treatment as it may pose a risk to the child's health. ('Rhode Island Children With Special Health Care Needs: Findings From the 2001 National Survey of Children With Special Health Care Needs', 2002), (Wang *et al.*, 2020)

The AAPD approves the use of general anesthesia in pediatric dentistry for patients who lack ability to cooperate, children with anxiety , fear leading to loss of communication, patients that need significant surgical procedures, dental procedures that need to be catered to immediately. ('Policy on the Use of Deep Sedation and General Anesthesia in the Pediatric Dental Office', 2016)

According to Ramazani , in recent times perception of parents towards treatment under general anaesthesia for their children has evolved. (Ramazani, 2016) In recent times parents are preferring treatment under general anaesthesia for younger children.

In the present study it was observed that 66 percent of the parents preferred treatment under general anaesthesia. When enquired from parents about the reason for preference of general anesthesia it was observed that 32 percent parents preferred not to have multiple visits for their child. They justify this by saying schools do not permit regular leave hence treatment in single visits was convenient for them. 27 percent of the parents were convinced for general anaesthesia as their children lacked cooperative ability. 11 percent of parents opted for general anesthesia as their child required full mouth rehabilitation . 12.5 percent of parents wanted a painless procedure . 10 percent of the parents preferred general anesthesia as they wanted a good quality of life for their child. They felt that if the child had a traumatic experience at the dental clinic it would affect him emotionally till the later stages of life and also that treatment without any interference would improve the quality of the dentist. 7.5 percent parents preferred general anesthesia as they did not belong to the same state and had limited time for completion of procedure .

It was observed that anaesthesia that parents preferred general anaesthesia more in 2-3 years old children rather than 4 to 5 years of age.

The limitation of the present study is that the patient records were of one dental institute, A multi-centric study can be conducted to extrapolate the results to general public.

CONCLUSION

We observed that parents preferred treatment under general anesthesia for children between 2 to 5 years of age as compared to the chair side treatment.

AUTHORS CONTRIBUTION

Niharika Kotian- Contributed to conception, design, data acquisition and interpretation, drafted the manuscript. Deepa Gurunathan - Contributed to conception, design, data interpretation and critically revised the manuscript. EMG Subramanian - Critically revised the manuscript.

CONFLICT OF INTEREST

No conflict of interest.

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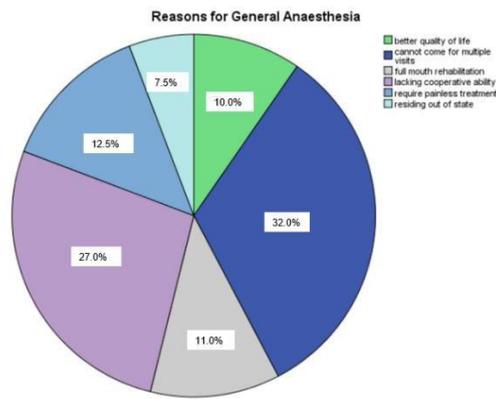
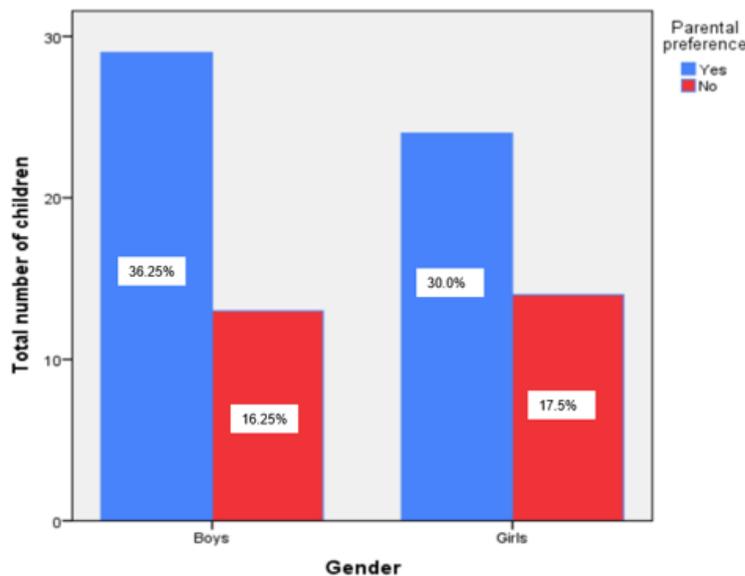
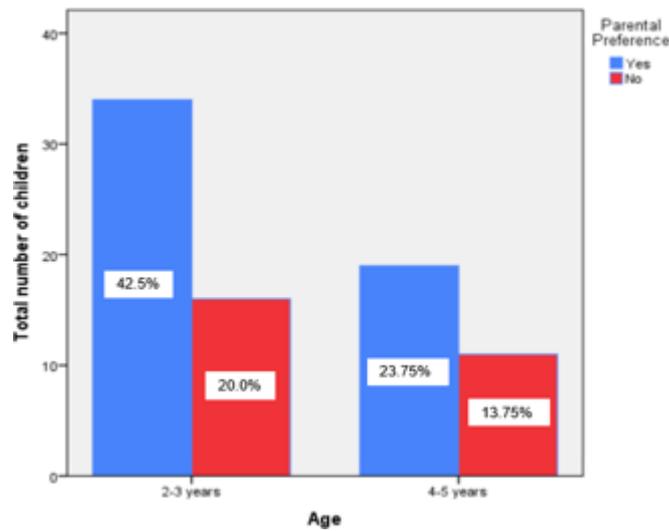


Figure 1: Pie chart representing reasons for parents preferring treatment under General Anaesthesia .32% parents preferred not to have multiple visits for their child. 27 % of the parents were convinced for general anaesthesia as their children lacked cooperative ability. 11% of parents opted for general anesthesia as their child required full mouth rehabilitation . 12.5 % of parents wanted a painless procedure . 10 % of the parents preferred general anesthesia as they wanted a good quality of life for their child. 7.5%parents preferred general anesthesia as they did not belong to the same state .



GRAPH 1:Bar graph representing association of parental preference for General Anaesthesia with gender of the child where blue represents parental preference for treatment under general anesthesia and red represents parents refusal for treatment under general anesthesia. X axis represents the gender of the child and Y axis represents the number of children indicated for treatment under general anaesthesia. Chi square test was done to obtain the association between gender of the child and parental preference for treatment under general anaesthesia and it was not significant statistically. Pearson chi square value:7.390. On the basis of gender , it was observed that parents preferred general anesthesia as an option more for males(36.25%) as compared to females(30%)(p=0.747), hence not statistically significant.



GRAPH 2: Bar graph representing association of parental preference for General Anaesthesia with age of the child where blue represents parental preference for treatment under general anaesthesia and red represents parents refusal for treatment under general anaesthesia. X axis represents the age of the child and Y axis represents the number of children indicated for treatment under general anaesthesia. Chi square test was done to obtain the association between age of the child and parental preference for treatment under general anaesthesia and it was found to be not significant statistically. Pearson chi square value:7.390. On the basis of age, it was observed that parents preferred general anaesthesia as an option more for children in the age group of 2 to 3 years(42.5%) rather than 4 to 5 years(23.75%)($p=0.814$).