

## **Antibiotics Commonly Prescribed in Children Undergoing Dental Treatment Under General Anesthesia - A Retrospective Study**

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**ABSTRACT:**

INTRODUCTION: Prophylactic anti-infection agents are exceptionally fundamental as they are compelling in decreasing any bacterial diseases and furthermore lessens the post usable temperature after broad sedation in youngsters. Anti-toxins

doesn't totally wipe out the microscopic organisms yet diminishes the impacts of bacterial attack for kids going through dental treatment under broad sedation.

**AIM:** To analyze the antibiotics commonly prescribed in children undergoing dental treatment under general anesthesia.

**MATERIALS AND METHODS:** The data was collected from Saveetha dental college department. The details of 206 patients were collected, out of which 75 patients fulfilled the inclusion and exclusion criteria. The data analysis was calculated using SPSS software of version 23 for which chi square test and pearson correlation test was conducted. The P value less than 0.05 was considered statistically significant.

**RESULTS:** Antibiotics most commonly prescribed are ampicillin with cloxacillin (41.89%) followed by other drugs (29.73%) which includes azithromycin, clindamycin, erythromycin and ciprofloxacin. A significant association was noted between the age and the antibiotic prescribed. ( $p=0.000$ )k

**CONCLUSION:** In the present study, antibiotics prescribed commonly for children undergoing dental treatment under general anaesthesia was ampicillin+cloxacillin of 3-6 year age group female children.

**KEYWORDS:** Antibiotics, bacteria, children, general anaesthesia

## **INTRODUCTION:**

Antibiotics are most commonly used in dental practice. 10% of antibiotics were estimated to be related to dental infections. The most commonly prescribed drug was associated with amoxicillin- clavulanate by the dentist during dental treatment(1). Antibiotic agents were additionally demonstrated for a large portion of the odontogenic contaminations, oral non-odontogenic diseases, as a prophylaxis against central contaminations and furthermore as prophylactics against neighborhood diseases and spread to different organs and tissues(1,2) Rational utilization of anti-toxins are expected in dental and oral clinical practices, as it guarantees the most extreme adequacy while simultaneously limiting the aftereffects and the presence of opposition (3).

Antibiotics prescribed commonly in children under general anesthesia by dentists were characterized by a number of particularities. There is a wide range of antibiotic organisms which were isolated from the oral cavity, but not all of them were potentially human pathogens(2)(3). Antibiotics in general were characterized only for a short period of time, especially not more than 7-10 days(4).

As cited in previous articles, antibiotics prescribed commonly for children under general anesthesia in dental practice contribute elements to favor the rational use of such medicines(5). For pediatric dental treatment, the patients who are unable to cooperate, the American Academy of pediatrics dentistry (AAPD) has recommended general anesthesia. A child who is extremely anxious, uncooperative and also physically and mentally disabled children needs an extensive treatment for general anesthesia and antibiotics to prevent the occurrence of postoperative temperature rise and infective endocarditis due to many dental related bacteremia(6)(7). As far as previous research articles, the drawbacks to the apparent advantages of antimicrobial treatment were addressed by their undesired impacts of the utilization of Prophylactic anti-infection agents for the most part (10). Our group has broad information and exploration experience that has convert into excellent publications(13-25) (26-32). The point of the current review was to examine the antimicrobials usually endorsed in kids going through dental treatment under general sedation.

## **MATERIALS AND METHOD:**

The data was collected from the children visiting the Department of Pedodontics for dental rehabilitation under general anesthesia in Saveetha dental college and hospital. The details of 206 pediatric patients were collected out of which 75 patients fulfilled the inclusion and exclusion criteria. Records with incomplete data and unclear data were excluded from the study. Ethical clearance was obtained from the institutional authority board.

The data included a varied population predominantly children under general anesthesia. The information gathered was arranged under the accompanying boundaries: Age, gender, antibiotics recommended. The information investigation was performed utilizing SPSS programming of form 23. The chi square test and Pearson connection was finished. The P esteem was under 0.005 and was statistically significant.

## **RESULTS:**

The mean age of the children who participated in the study was  $3.11 \pm 0.354$  years of age and the demographic details are tabulated in Table 1. Ampicillin with cloxacillin was found to be the most commonly prescribed antibiotics in children for dental treatment under General anesthesia. (Figure 1) A significant association was noted between the age and the antibiotic prescribed. (Figure 2).

## **DISCUSSION:**

In the current arena, there is a worldwide knowledge about general anaesthesia which showed increased children receiving dental treatment under general anaesthesia. The success of any dental (8) procedure done under general anesthesia in children depends on several factors. (9)

Prophylactic antibiotics prescribed for children are generally indicated for invasive dental procedures under General anesthesia. Some of the common outcomes reported in children undergoing dental treatment are bacteremia and temperature elevation. A few investigations were finished assessing the result of various dental systems under broad sedation remembering nasal intubation for bacteremia and temperature changes in youngsters and the impact of prophylactic antimicrobial agents on it. Antibiotics are commonly prescribed for any bacterial infections to reduce its virulence in the oral cavity. Antibiotics prescribed commonly for children under general anaesthesia for dental treatment can vary according to patient complaints and allergic reactions (10). Most common antibiotics prescribed widely are amoxicillin.

Several reasons have been proposed for the occurrence of postoperative temperature elevation in children after dental treatment under general anaesthesia. One of the possible causes for temperature elevation after general anesthesia was considered to be dehydration. Previous articles have shown that the majority of children having dental treatment under general anaesthesia were between 5-9 years old. (11) It also suggests continuing reluctance among dentists to use general anaesthesia for any dental elective extractions with prophylactic antibiotics prescribed. (12) The previous articles also show that the patients with antibiotics prescribed before treatment demonstrated reduced frequencies of pain, swelling and temperature than those without prophylactic antibiotics. (13)

In the present study, antibiotics prescribed commonly for children in dental treatment under general anaesthesia was more in male children below the age group of 4 years than female children of different age groups with decreased pain, temperature. This marks the need to educate every practitioner on the use of prophylactic antibiotics and analgesics to reduce postoperative pain and infections. This study is limited only to a limited population over a small time period including both the gender groups and in future study, with a wide range of population further studies can be carried out on the basis of the antibiotics usage under general anesthesia for dental treatment.

## **CONCLUSION:**

From this study we conclude that antibiotics most commonly prescribed for children with dental treatment under general anaesthesia are Ampicillin with cloxacillin within the age group of 3-6 years and was prescribed mostly to female children rather than male children.

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**CONFLICT OF INTEREST :** The authors have none to declare.

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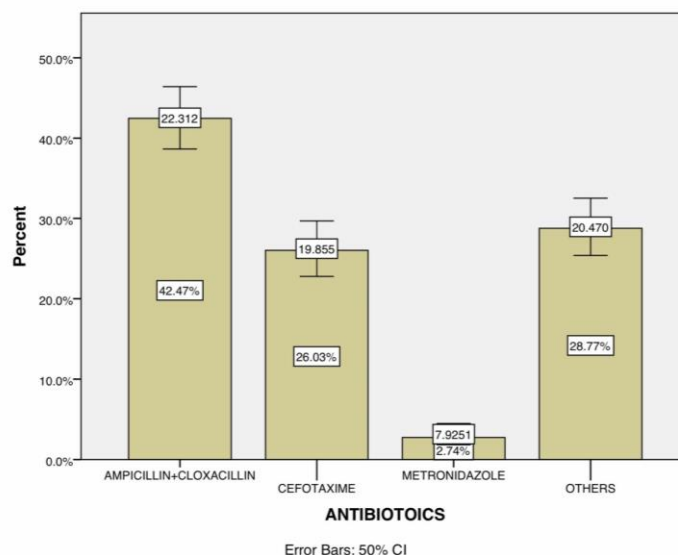


Figure1: The above graph shows X- axis with antibiotics and Y-axis with the prescription percentage with ampicillin+cloxacillin, cefotaxime, metronidazole and others, out of which Ampicillin+cloxacillin shows the highest percentage of 41.89% was commonly prescribed antibiotics when compared to cefotaxime, metronidazole and other drugs like clindamycin, erythromycin, azithromycin and ciprofloxacin.

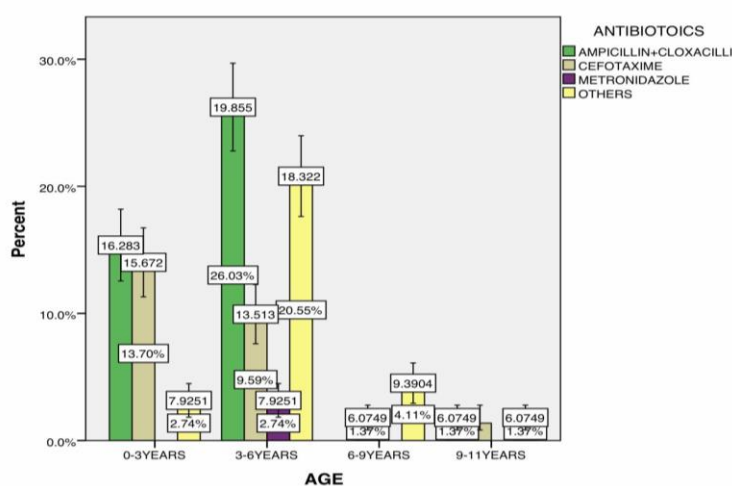


Figure:2 In the study conducted, the above graph shows X- axis with age group and Y-axis with the antibiotics count prescribed and the age group between 3-6 years of children were more commonly prescribed with antibiotics when compared to other age groups with green colour denoting ampicillin+cloxacillin, mustard colour denoting cefotaxime, purple colour denoting metronidazole and yellow colour denoting other drugs like clindamycin, erythromycin, azithromycin and ciprofloxacin. A Chi-square test was done for which the association graph was found to be statistically significant. Pearson's Chi-square value: 52.000, df: 2, p-value: 0.000 (<0.05). There is a significant association between the age and the antibiotics prescribed.

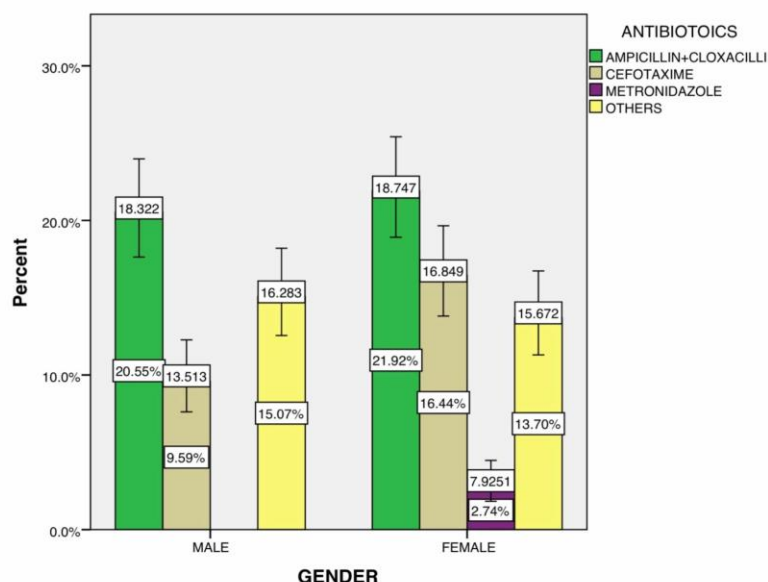


Figure:3 In the study conducted, the above graph shows X- axis with gender and Y-axis with the antibiotics count prescribed ,for which female children was most commonly prescribed with antibiotics when compared to male children with green colour denoting ampicillin+cloxacillin, mustard colour denoting cefotaxime ,purple colour denoting metronidazole and yellow colour denoting other drugs like clindamycin, erythromycin ,azithromycin and ciprofloxacin..A Chi-square test was done and the affiliation was viewed as measurably huge. Pearson's Chi-square worth: 52.000, df: 2, p-esteem: 0.000 (<0.05). There is a critical relationship between age and the antimicrobial agents.

AGE:	Mean-3.11	Std.deviation-0.354
GENDER: Total =100%	Men=45.9%	Female=54.1%

Table 1: Demographic details of the participants