Oral Health Status and Treatment Needs in Pediatric Aids Patients

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Abstract
Human immunodeficiency virus (HIV) infection has become a chronic condition in children with improved survival and quality of life after the introduction of highly active anti-retroviral therapy. Patients frequently report with oral manifestations but the oral health status has been poorly researched. This study was done to investigate the oral health status and treatment needs amongst HIV infected children in Chennai, India. 50 children from 2 HIV care homes were examined and data was statistically analysed. 48% of the children had caries. Restoration was the main treatment need followed by oral prophylaxis.
Keywords: AIDS, caries, children, HIV, oral health

1. Introduction

Human immunodeficiency virus (HIV) is a deadly virus which has negatively influenced the quality of life of the affected population and their families for the past few decades. Over 2.3 million children are living with human immunodeficiency virus (HIIV) below the age of 14 all over the world [1]. It is estimated that approximately 880 children are infected with HIV daily. HIV-positive children experience various health disadvantages and are susceptible to opportunistic and other infectious disease [1,2].
India has estimated 145,000 children <15 years of age who are infected by HIV/AIDS, and about 22,000 new infections occur every year. Children account for 7% of all the new HIV infections [3]. Children with HIV are at high risk for dental caries. Poor socioeconomic status, dental caries, reduced immunological response, painful symptoms in the mouth, decreased salivary function and continuous use of medicines that have been formulated as syrups or sugared solutions are usual characteristics of children with AIDS [4]. These children frequently exhibit lesions on the oral mucosa, resulting in pain that contributes to ineffective or infrequent tooth brushing. All of these may affect the quality of life and the need for treatment becomes essential [5].
Various studies in the past have reported the occurrence of oral manifestations of HIV [6,7]. Very few studies have focused on the oral health status and the unmet treatment needs. Hence, this study was undertaken with the aim to find the prevalence of dental caries in children with HIV and their treatment needs in Chennai, India.
METHODS:
The present study was initiated after receiving ethical clearance from the institutional review board of Saveetha Dental College and Hospitals (IHEC/SDC/FACULTY/22/PEDO/435) . 50 HIV positive children aged 2-14 who visited the Department of Pediatric and Preventive Dentistry at the Saveetha Dental College and Hospitals, Chennai from two different care homes which take care of children who are HIV positive. All the children had a confirmatory diagnosis by ELISA and/or Western blot which was arranged by the respective care homes before visiting the pediatric dental department. Consent was taken from respective parent/ caregiver before clinical examination
Universal protocols for HIV patients were followed during examination. All clinical examination was carried out by a single They were examined for the following parameters using the World Health Organization Oral Health Survey Basic Methods. Data was recorded in Microsoft Excel and exported to the statistical package of social science for windows (SPSS) and subjected to statistical analysis.

2. Results

The study population consisted of 50 children which consisted of 28 boys and 22 girls. 7 children were below 6 years while the remaining 43 were above 7 years (Table 1). Caries was found in 24 children. In the primary dentition, dmft was found to be 1.48 ±

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2.39 in children below 6 years while children above 7 years had dmft score of 1.23 ± 4.87. DMFT was found to be 2.76 ± 3.45(Table 2). Girls were found to have lesser decayed teeth (Table 3) better oral hygiene compared to boys (Table 4).

Table 1: Socio-demographic characteristics of the study population		
Characteristics	N	%
Gender		
Male	28	56
Female	22	44
Age (years)		
Range		
0–6	7	14
7-14	43	86
TOTAL	50	100

Table 2: Mean dmft/DMFT of the study population according to age group		
Age group (years)	dmft	DMFT
0-6	1.48 ± 2.39	-
7-14	1.23 ± 4.87	2.76 ± 3.45

Table 3: Mean dmft/DMFT according to gender			
Gender	N	Total Carious Teeth	Mean
Male	28	71	2.32 ± 2.45
Female	22	56	2.08 ± 2.19

Table 4: Oral Hygiene status based on Gender				
Gender	N	Good	Fair	Poor
Male	28	10	10	8
Female	22	12	8	2

Table 5: Oral Hygiene Based on Age		
Age group (years)	OHI (S)	P value
0-6	1.5 ± 1.2	0.714
7-14	1.8 ± 1.3	

Table 6: Treatment needs			
S. NO	Treatment	N(Children)	%
1	Restoration	30	60%
2	Pulpectomy	6	12%
3	Root canal Treatment	2	4%
4	Extraction	13	26%
5	Orthodontic	5	10%
6	Oral Prophylaxis	20	40%

3. Discussion

With the introduction of antiretroviral therapy, the life expectancy of patients with AIDS has improved. Highly active anti-retroviral therapy (HAART) has been reported to be efficacious in terms of hastening immunological recovery and enhancing growth in HIV-infected children across the world. Survival has greatly improved with the advent of HAART in children [8]. There are reports of positive influence of HAART on the overall quality of life of children living with HIV/AIDS. The early diagnosis of children with HIV infection is imperative to initiate HAART before significant immunological compromise occurs. Due to HAART, children do not need to fear death but have to live life with a chronic disease. [8-10]

The oral cavity is an important and frequently undervalued source of diagnostic and prognostic information in patients with HIV disease [6] . Oral manifestations are considered to be the first symptoms of AIDS and are considered to be prognostic markers. Due to compromised immune status, children with HIV have reported with poor oral hygiene. However, none of the studies have focussed on the unmet treatment needs [11].

In the present study, it was seen that caries in primary dentition was higher in children in the age group 0-6 when compared to 7-14. This can be attributed to difficulty in dexterity skills required for brushing and the lack of interest the parents/ caregivers gave to oral health when compared to general health [12]. In children above 7 years, caries was higher in permanent dentition compared to primary dentition. This could be due to the tendency to consume more snacks over time. Adolescence may increase the risk of dental diseases, as it is a period during which oral care habits are being established, with lower motivation regarding good oral hygiene maintenance [13].

From the results of the present study, 60% of the study population required restorations while invasive endodontic procedures such as pulpectomy was needed in12% patients and root canal treatment in 4% of the patients. Oral prophylaxis was needed for 40% of the children. Oral hygiene was found to be better in girls as compared to boys. From the above results, it can be understood that the dentist plays an important role in improving oral hygiene in children who are infected with HIV.

Unmet treatment needs such as restorations may turn to invasive endodontic procedures or even extraction if oral hygiene is mot maintained and timely treatment is not done. School based oral health education along with motivation from parents and caregivers will help to improve oral hygiene in children [15]. Comprehensive dental treatment along with education of caregiver should be initiated for better oral hygiene.

4. Conclusion

Within the limitations of our study, it was found that majority of the children had good oral hygiene. Restorations were the most needed treatment followed by oral prophylaxis. Oral hygiene instructions should be reinforced in children to improve their oral health.

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