

Oral Hygiene Status and Treatment Needs among Haemophilic Children in Telangana State and Andhra Pradesh State

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Abstract

Context: Hemophilia children must be considered as special category of patients. The bleeding tendency and fear of bleed may have a negative effect on preventive dental care of patients with hemophilia both at home and at dental office. A review of literature regarding the care of hemophilic patients showed the paucity of material on this important subject, and the lack of information on the dental health of this group of patients. **Aim:** To evaluate the oral hygiene status, prevalence of dental caries and treatment needs of children with haemophilia **Materials and Methods:** A descriptive cross-sectional study was conducted on 328 subjects with age ranging from 5-15 years attending and registering their names, residential address, parental occupation and other criteria in hemophilic society at Telangana state and Andhra Pradesh state. The oral hygiene status was recorded by using OHI-S. Teeth affected by dental caries and teeth restored/extracted as sequelae of dental caries were assessed using decayed, missed, filled tooth (DEFT), DMFT for primary and permanent dentition respectively. **Statistical analysis:** student t test. **Results:** The mean oral hygiene index simplified scores were 3.21 in 5-10 years and 3.22 in 11-15 years respectively. The mean deft of 5-10 years was 3.23 and for 11-15 years was 2.27 and DMFT for 5-10 years was 2.81 and highest mean DMFT 5.92 was recorded in 11-15 years age group. **Conclusion:** The present study showed oral hygiene status was poor, and the prevalence of dental caries was 83.63% and the treatment needs was 93.90%.

Keywords: Hemophilia; Simplified oral hygiene index; Dental caries; Treatment needs

Introduction

Bleeding disorders are certainly one of the most challenging medical emergencies amongst health care professionals, for reasons well known.^[1] Hemophilia accounts for about 80% of bleeding disorders characterized by a lifelong defect in the clotting mechanism.^[2] The frequency and severity of bleeding experienced by a person with hemophilia depends mainly on their plasma levels of Anti hemophilic factors.^[3] These disorders are present in all ethnic groups and geographic regions but higher prevalence are reported in specific ethnic groups.^[4] The highly vascular oral cavity is definitely a hot spot for hemorrhage in this group of patients.^[1] Oral health instructions create awareness of the need to return regularly for examination, professional prophylaxis and treatment. Appropriate dental care necessary for these individuals however, the issue gains more importance as dental care affects the general health of hemophilic patients.^[5]

Hemophilia children must be considered as special category of patients. Patients with hemophilia generally do not receive optimal dental treatment despite of greater knowledge of hemostasis and advances in the treatment of bleeding disorders.^[6] Although there are number of studies regarding oral surgical and periodontal management, but studies relating to the oral hygiene status, dental caries and treatment needs are very

limited. Hence, the purpose of this present study was to evaluate the above mentioned parameters among hemophilic children in Telangana state and Andhra Pradesh state.

Subjects and Methods

A descriptive cross-sectional study was conducted by Department of Pedodontics and Preventive Dentistry, Mamata Dental College, Khammam, India to study the oral hygiene status, dental caries and treatment needs on a group of children suffering from hemophilia. The study group includes a total of 328 subjects with age ranging from 5-15 years attending and registering their names, residential address, parental occupation and other criteria in hemophilic society at Telangana state and Andhra Pradesh state who were coming for general treatment and follow up. The children suffering from hemophilia were only included in the present study. Subjects with other hematological disorders and systemic diseases were excluded. The study subjects were then randomly divided into two groups

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How to Cite this Article: Venugopal Reddy N, et al. Oral Hygiene Status and Treatment Needs among Haemophilic Children in Telangana State and Andhra Pradesh State. Ann Med Health Sci Res. 2017; 7: 28-31

based on age, group one is 5-10 years and group two is 11-15 years. Furthermore, questionnaires were filled out by parents (or) guardians of young children (5-7 years old) or by the older children themselves. This questionnaire included questions about the presence of other hemophilic members of the family, type of hemophilia, dietary habits, frequency of tooth brushing, education and economic level of parents and parent's oral hygiene habits.

An ethical approval was obtained from the institutional review board, hemophilic societies and the informed consent was obtained from the parents/guardians.

All the subjects included in the study group were examined by single qualified examiner using ADA (American dental association) Type III specification. The oral hygiene status was recorded by using OHI-S as reported by John C. Greene and Jack R. Vermillion. Teeth affected by dental caries and teeth restored/extracted as sequele of dental caries were assessed using decayed, missed, filled tooth (DEFT), DMFT for primary and permanent dentition respectively was recorded by using WHO criteria in 1997. Missing primary incisor teeth for children aged 5 years and older were considered exfoliated and were not included in the "m" component, as was missing primary canines or molars in children aged 9 or 10 years. When permanent teeth were missing a history of the reason for tooth extraction was obtained in order to ensure that orthodontic extractions were not included in the "M" component. The results obtained was tabulated and statistically analyzed.

Results

The present cross sectional study was conducted on 328 hemophilic children of age group of 5-15 years in Telangana state and Andhra Pradesh state, which included 304 males and 24 females [Table 1 and Figure 1]. The mean oral hygiene index simplified scores were 3.21 in 5-10 years and 3.22 in 11-15 years respectively [Table 2 and Figure 2]. Out of 328 subjects the children affected with dental caries were 294 and the overall percentage prevalence of dental caries was 89.63%. The mean deft of 5-10 years was 3.23 and for 11-15 years was 2.27 and DMFT for 5-10 years was 2.81 and highest mean DMFT 5.92 was recorded in 11-15 years age group [Tables 3 and 4]. Over all treatment required was 93.90% in that 65.85% require preventive care, 63.41% fissure sealant, 62.80% one surface filling, 43.90% two or more surface filling, 37.80% extraction, 29.26% pulp care, and 7.31% crown [Table 5].

Discussion

Hemophilia is the most common hemorrhagic diathesis across the globe with an occurrence of 1 per every 10,000 people. It is caused by congenital deficiency of factor VIII. It is a sex-linked recessive characteristic, transmitted by asymptomatic female carriers and manifest only in males. The defective gene on the X chromosome causes a deficiency of factor VIII, which can be either complete or partial.^[2]

Table 1: Distribution of study subjects according to age and gender.

Age groups (years)	Males	Females	Total
5-10	120 (94.48%)	7 (5.52%)	127 (38.7%)
11-15	184 (91.54%)	17 (8.46%)	201 (61.3%)
Total	304 (92.6%)	24 (7.31%)	328 (100%)

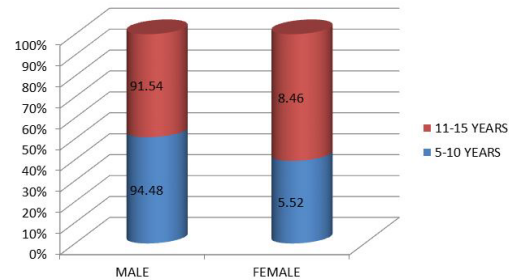


Figure 1: Distribution of study subjects according to age and gender.

Table 2: Oral hygiene status of study population.

Age group (years)	N	Debris index	Calculus index	OHI-S
5-10	127	1.60	1.61	3.21
11-15	201	1.95	1.277	3.22

OHI-S – Simplified oral hygiene index

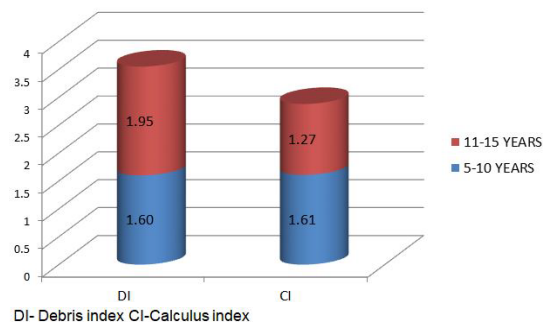


Figure 2: Oral hygiene status of study population.

Table 3: Prevalence of dental caries among the study population.

Age groups (years)	N	With caries	Total prevalence	N	With caries	Males prevalence	N	With caries	Fe-males Prevalence
5-10	127	110	86.6%	128	108	90%	7	2	28.6%
11-15	201	184	91.54%	184	172	93.5%	17	12	6.52%
Total	328	294	89.63%	312	280	89.74%	24	14	58.3%

Table 4: The Intra analysis of mean deft and mean DMFT.

Age groups (years)	deft	d	e	f	DMFT	D	M	F
5-10	3.23	2.31	0.6	0.32	2.81	2.4	0.21	0.2
11-15	2.27	2.2	0.05	0.02	5.92	4.52	0.8	0.6

DEFT: Decayed, Exfoliated, Filled Teeth DMFT: Decayed, Missing, Filled Teeth

Table 5: Treatment needs of study population.

	Age groups				Total	
	5-10 (years)		11-15 (years)		N	%
	N	%	N	%		
Children require treatment	118	92.91	190	94.52	308	93.90
Preventive care	62	48.81	154	76.61	216	65.85
Fissure sealant	78	61.41	130	64.67	208	63.41
One surface filling	48	37.79	158	78.60	206	62.80
Two or more surface filling	64	50.39	80	39.8	144	43.90

Crown	13	10.23	11	5.47	24	7.31
Pulp care	36	28.34	60	29.85	96	29.26
Extraction	33	25.98	91	45.27	124	37.80

Hemophilia A can be classified as severe (less than 1% of normal factor VIII activity), moderate (1-5% of normal factor VIII activity), or mild (5-25% of normal factor VIII activity). As the age increases, the child's physical activity naturally increases, which results in more exposure to trauma, especially in hemophiliacs.^[7]

In the developing countries the children with congenital coagulation disorders refrain from use of tooth brush to avoid gingival bleeding and they are more concerned with their medical health than their dental health, on the other hand in developed countries there is possible explanation of good oral health, low caries experience by comprehensive hemophilic centers which provide children regular periodic dental checkups, preventive dental programs and oral hygiene instructions to the children from an early age.^[8]

Towards an overall improvement of dental health in this vulnerable segment of population, the integration of dental care into the everyday life of hemophilia treatment centers can be recommended, which should aim toward preventive measures. This in turn will reduce the prevalence of dental diseases and contribute to the effective use of economic resources provided that a proactive role is taken by health authorities. Hematology should also be included in the curricula of all the medical professions including medical and dental.^[9,10]

The undue fear of hemophiliacs and dentists from attempting oral care is due to lack of availability for oral health care knowledge and dental services to the vast majority of hemophiliacs leading to neglected oral cavities with teeth that could not be managed by any other line of treatment than extractions.^[11]

Many of the coagulation defects present a hazard to surgery and to local anesthetic injections, but in general teeth erupt and exfoliate without problems and noninvasive dental treatment is safe, close coordination is needed between the dentist and the physician to plan a safe and comprehensive dental care.^[12]

Improvement in communication among hematologists, dental specialists and those in general dental practices could be an important step to establish an effective dental management of patients with hemophilia. There is a lack of epidemiological studies in oral health status of hemophilia patients.^[12]

The two main oral diseases affecting patients with hemophilia are the same as for the rest of population, i.e., dental caries and gingivitis/periodontitis. It is conceivable that congenital coagulation disorders are risk factors for dental caries, gingivitis, periodontitis and subsequent alveolar bone loss due to the fact that these patients are afraid to use an everyday prophylactic measures in proper way in order to avoid bleeding episodes.^[13]

A review of literature regarding the care of hemophilic patients showed the paucity of material on this important subject, and the

lack of information on the dental health of this group of patients. The present study, therefore, was conducted to evaluate the oral hygiene status, prevalence of dental caries and oral health needs of children with hemophilia.

In present study the oral hygiene index simplified was scored as poor in 5-10 (3.21) and for 11-15 (3.22) years age group. These findings were similar to a study conducted in Poland where the oral hygiene index of hemophilic children was recorded as worse when compared to controls.^[8] They concluded that data gained from the questionnaire and clinical examinations of this group disclosed the need for and necessity of preventive treatments and dental education in patients with hemophilia. But few studies were not in agreement to the present study, which showed a fair and good level oral hygiene respectively attributing to the comprehensive hemophilic centers with dental care services.^[11,14,15]

According to National Oral Health Survey caries prevalence in India was 51.9% (mean deft 2), 53.8% (mean DMFT 1.8) and 63.1% (mean DMFT 2.4) at ages 5, 12, and 15 years. According to WHO mean DMFT at the age of 12 years should not be more than three.^[6]

It is necessary to identify the oral health conditions using indices that measure the experience and severity of dental caries. Therefore the deft and DMFT indices were used, which allow an understanding of the distribution of events in these individuals as well as establishing coping measures to be taken in order to improve their oral health conditions.^[4]

The present study recorded the overall caries prevalence as 89.63% with a mean deft and DMFT of 3.23 and 2.81 respectively in 5-10 years age group and in 11-15 years age group the mean deft and DMFT was 2.27 and 5.92. Results similar to those of the present study have been reported by Sudhanshu et al., Evangelista et al. This agreement in the DMFT values can be attributed to the fact that these studies evaluated the prevalence of caries in a specific population.^[6,16]

Few studies reported lower caries experience probably which was contrary to the present study where significantly greater proportion of children with severe hemophilia were caries-free compared with the controls. Both the DMFS and DMFT were significantly greater in the controls compared with the hemophilia group which could be due to the fact that there patients received dental care as dental department was situated next to the outpatient hematology consulting room and the dental aspect of the service was considered as an integral part of the hematology visit.^[2,15,16,17]

Conclusion

In the present study the overall treatment required was 93.90% in that 65.85% require preventive care, 63.41% fissure sealant, 62.80% one surface filling, 43.90% two or more surface filling, 37.80% extraction, 29.26% pulp care, and 7.31% crown. The results of present study was in accordance to those reported by Sudhanshu et al.^[2]

The results showed that the crown requirement was 10.23% in 5-10 years age group and 5.47% in 11-15 years age group. The probable reason could be that as age increases the prevalence of caries progression increases and the requirement of treatment needs increases except for crown it is decreased as age increases as dental caries in mixed dentition the spread of caries process is faster, so the requirement of crown is more in 5-10 years old children than 11-15 years.

Conflict of Interest

All authors disclose that there was no conflict of interest.

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