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## Dental Caries Experience among Haemophilic Children

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### ABSTRACT

Inherited bleeding disorders account for approximately one in ten thousand live births. Haemophilia A accounts for about 80% of bleeding disorders and form a priority group for dental care. Hence, Preventive dentistry is vital to the younger hemophiliac. To determine the dental caries experience of children suffering from haemophilia attending Karnataka Hemophilia Society, Davangere. A descriptive cross-sectional study was conducted on children suffering from haemophilia, age ranging from 2 to 15 years. Caries was diagnosed using WHO criteria and DMFT and dft indices were recorded. The number of children with no active caries was 35.29% in primary and 78.57% in permanent dentition. Similarly, caries was 17.64% in primary and 71.48% in permanent dentition. Dental caries prevalence was more among haemophilic patients indicating need for dental services at the earliest as a preventive measure.

**Key words:** Bleeding disorders, Haemophilia, Dental caries, Preventive procedures.

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## INTRODUCTION

Inherited bleeding disorders account for approximately one in ten thousand live births. Haemophilia A is the most common of these and accounts for about 80% of bleeding disorders. It is a sex linked recessive disorder in which the level of factor VIII is reduced. Von Willibrands disease is a related condition in which there are low levels of factor VIII and a lack of platelet adhesion. Haemophilia B (Christmas disease) is clinically similar to haemophilia A but is caused by a deficiency of factor IX; it accounts for about 10% of inherited bleeding disorders. These three represent the majority of bleeding disorders, although further disorders affecting the platelet system can cause a bleeding tendency, for example thrombocytopenia, which may be primary or secondary to disorders such as leukaemia [1]. Hemophilia is considered severe when plasma activity is <1 IU/dL (normal range 50-100); moderate if it ranges between 2 and 5 IU/dL, and mild if it is between 6 and 40 IU/dL [2].

Hemophilic patients must be thought of as special patients. Patients with hemophilia generally do not receive optimal dental treatment despite greater knowledge of hemostasis and advances in the treatment of the bleeding disorders. Although significant progress in oral surgery treatment for hemophiliacs has been documented, the focus of these reports has been dental extractions rather than conservation of the dentition and promotion of oral health. The dental profession should be made aware of safe, general dental treatment for this special group of patients. Bleeding is uncommon with routine dental procedures, and current modes of hemophilic therapy enable the practitioner to treat bleeding crises successfully should they arise [3].

Since, routine dental procedures however don't usually involve bleeding; there is no contraindication to general dental treatment for hemophiliacs. Caution must be used with local anesthetic block techniques. Preventive dentistry is vital to the younger hemophiliac; older hemophiliacs may require extensive treatment to restore mouths that have been neglected for years [2- 4].

Several reports disclose that 14% of hemophiliacs and 30% cases of mild haemophilia were first diagnosed following an episode of sever oral bleeding. The most common site of oral bleeding was the frenum of the lip and the tongue. Thus the dentist may be the first to diagnose a patient with haemophilia. Although there have been number of studies regarding with oral surgical, periodontal management of haemophilia there are few data for the dental caries and their preventive aspects in haemophilia children.

### Objective

To determine the dental caries experience of children suffering from haemophilia attending Karnataka hemophilia society, Davangere.

## MATERIAL AND METHODS

A descriptive cross-sectional study was conducted on a group of children suffering from haemophilia with age ranging from 2 to 15 years attending and registered their names, residential address, parental occupation and other criteria in Karnataka haemophilia society at Davangere city for general treatment and follow up. The examinations were carried out in a room, patients being seated on an ordinary chair under natural illumination. Prior to the examination each child was asked to rinse their mouth with water, the teeth were then dried using cotton rolls. Caries was diagnosed by visual inspection after drying and removing debris from the tooth surfaces. Both primary and permanent dentition was taken for consideration in all children. History of dentifrices used for their regular tooth brushing was obtained. Caries was diagnosed using World Health Organization criteria and DMFT [Decayed, Missing & Filled Teeth] and dft [decayed, filled teeth] indices were recorded. Primary dentitions were examined by dft index for children aged 2- 12 years. Missing primary incisor teeth for children aged 5 years and older were considered exfoliated and therefore were not included in the 'm' component, as was missing primary canines or molars in children aged 9 or 10 years. The permanent dentitions were assessed by DMFT for children aged 7 – 15 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 study was approved by faculty of hematology along with concerned medical center and informed consent was obtained from parents. Ethical clearance was obtained from ethical committee of College of Dental Sciences, Davangere. Numbers and proportions of children with no active caries and with no experience of decay were recorded.

## RESULTS AND DISCUSSION

### RESULTS

A total of twenty haemophilic patients included in the study who were in the age range of 5 to 12 years.

**Table 1: Distribution of study groups according to type of haemophilia.**

Form of haemophilia	TYPE OF HAEMOPHILIA		
	Type A patients n (%)	Type B patients n (%)	Type C patients n (%)
Severe	6 (54.54%)	4 (57.14%)	0
Moderate	4 (36.36%)	3 (42.85%)	2 (100%)
Mild	1 (9.09%)	0	0
<b>Total</b>	<b>11 (55%)</b>	<b>7 (35%)</b>	<b>2 (10%)</b>

Table I shows distribution of the study group according to type of haemophilia. The maximum number were recorded in type A [11 patients – 55%] among them 6 were severe, 4 were moderate and 1 was mild form. In type B, 7 patients [35%] were reported among them 4

were severe and 3 were of moderate form and in type C, 2 [10%] were reported and both were moderate form.

**Table 2: The number of children with decayed and filled teeth in both primary and permanent dentition.**

Caries experience	In primary dentition n = 17	In permanent dentition n = 14
No of decayed teeth (percentage)	11 (64.70%)	3 (21.42%)
No of filled teeth (percentage)	3 (17.64%)	1 (7.14%)

Table II shows the number of children with decayed and filled teeth in both primary and permanent dentition. In primary dentition a total of 11 patients were found with decayed teeth out of 17 patients, accounting for 64.70%. In permanent dentition, 3 patients out of 14 patients were found to have decayed teeth accounting for 21.42%. The number of filled teeth in primary dentition was 3 accounting 17.64% and in permanent dentition only one patient was having filled teeth accounting for 7.14%.

**Table 3: The number of children in the study group with no active caries and no caries experience in both primary and permanent dentition.**

Caries experience	Number (and %) of children in primary dentition [2-12years]	Number (and %) of children in permanent dentition [7-15 years]
No active caries (dt /DT=0)	6 (35.29%)	11 (78.57%)
No caries experience (dft /DMFT = 0)	3 (17.64%)	10 (71.48%)

Table III shows the number of children in the study group with no active caries and no caries experience in both primary and permanent dentition, the number of children in primary dentition [2-12years] with no active caries (dt=0) was 6 accounting for 35.29%, and in permanent dentition [7-15 years] with no active caries was 11 accounting for 78.57%. Children with no caries experience (dft = 0) was 3 (17.64%) in primary dentition and 10 (71.48%) in permanent dentition.

## DISCUSSION

A review of the literature regarding the care of haemophilic patients showed the paucity of material on this important subject, and the lack of information on the dental health of this group of patients. Dental management of patients with haemophilia begins with prevention of dental disease and thus maintenance of a caries free dentition with good periodontal health [5-7]. As inherited bleeding disorders account for 1 in 10,000 live births and haemophilia represents the majority of such disorders, they are a priority group for dental care [1].

The present study established the dental caries experience of 20 haemophilic patients aged 2-15 years. The prevalence of dental caries in permanent teeth was consistent with the study conducted by D Boyd et al [1] whereas it was slightly higher in primary dentition than that reported in a study conducted by D Boyd et al [1] [66% compared to control 45%] and in a study conducted by Sonbol H et al, where significantly greater proportion of children with severe haemophilia were caries-free compared with the controls (36.7% vs. 13.3%; P=0.04). Both the DMFS and DMFT were significantly greater in the controls (3.6 and 2.8, respectively) compared with the haemophilia group, (0.8 and 0.7; P=0.007 and P=0.04) [8]. This may be due to the fact that there the 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. Hence, patients may be better motivated by virtue of medical condition which was lagging in the present study, but it is unlikely that this alone was the explanation.

As small sample size being the limitation of the present study, further studies are recommended and at the same time dental services should be recommended as an integral part of hematology treatment as a preliminary step in preventive procedures.

## CONCLUSION

The present study showed more number of haemophilic children's experienced dental caries indicating need for dental services at the earliest as a preventive measure for these patients.

### 1. What this paper or case report adds?

- It's an original research and first among the haemophilic children in Davangere city.
- A paucity of material on this important subject and lack of information on the dental health of this group made to study the prevalence of dental caries among the haemophilic children.
- This adds an evidence of increased number of dental caries among the haemophilic children.

### 2. Why this paper or case report is important to medicine?

- Increased prevalence of dental caries among haemophilic children indicates the necessity of preventive measures.
- Hence, it becomes a prime responsibility of public health professional to focus on this special group.

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