INTRODUCTION

Dental caries is an important Dental Public Health Problem and is also the most prevalent oral disease among children and adults in the world. The prevalence of dental caries was of great interest for long and is a principal subject of many epidemiological researches being carried out all over the world. This disease not only causes damage to the tooth, but is also responsible for several morbid conditions of the oral cavity and other systems of the body (WHO 1981). The prevalence pattern of dental caries varies with age, sex, socio economic status, race, geographical location, food habits and oral hygiene practices. All the teeth and all the surfaces are not equally susceptible to caries. It is of interest therefore, to know the relative caries susceptibility of the teeth in the maxilla and mandible. The main objective of this investigation was to assess the prevalence and pattern of dental caries in deciduous dentition among 5 year old school children.

METHODOLOGY

This epidemiological study was carried out on 5 year old school children for the assessment of dental caries prevalence and pattern in deciduous dentition. The study population consisted of 3364 (males=1744, females=1620) 5 year old school children. Twenty schools were selected using random number table. School going children aged 5 years who were present on the day of examination were included in the study. Approval from the concerned authorities was obtained prior to beginning the study. Out of the total sample of 504, 263 (52.2%) were males and 241 (47.8%) were females. The survey was conducted between February 2008 and April 2008. The dental examination was carried out by two dentists. Prior to the survey, intra examiner reproducibility was evaluated by two examinations performed on the same school children in a gap of 2 days. Agreements between the first and second examiner were found to be good. During the survey, 10 children in each school were re-examined to assess
intra examiner reliability. There was a good agreement between the examiners.

Dental caries was assessed by Dentition status and Treatment Need (WHO 1997) using mouth mirror and probe. Only cavitated lesions visible under natural sunlight and class room’s tube-lights were noted on specially designed Proforma sheets. The data was statistically analyzed using Proportion test for comparison of prevalence of caries among the different groups, sex, arch, teeth (anterior and posterior teeth) and right and left side of the oral cavity. Oral health education was given to the school children in the local language and for those who required treatment, were advised to visit dentist for the required treatment.

RESULTS

The study population consisted of 504, school children of the age of 5 years. It included 263 (52.2%) males and 241 (47.8%) females.

Figure 1 shows prevalence of dental caries among study population. Caries prevalence was 44.4%. Sex wise comparison revealed that caries prevalence was higher in males, 125 (47.4%) than in females, 99 (41.1%) and the difference was significant statistically (P<0.05)

Figure 2 shows prevalence of dental caries in the arches. Caries prevalence was 37% in the maxillary arch and 26.6% in the Mandibular arch. Among males, the mandibular arch showed a higher caries level (38.8%) than the maxillary arch (30.8%) and the difference was significant statistically (P<0.05). Similarly among females, the mandibular arch showed higher caries prevalence (34.9%) than the maxillar arch (22%) and the difference was statistically significant (P<0.01).

Figure 3 shows dental caries prevalence on right and left side of oral cavity. On comparing, it was found that caries occurred in a bilateral phenomenon (right side = 37.6%, left side= 38.6%). Among males caries prevalence was 40.4% and 41.2% for right and left sides respectively. Among females caries prevalence was 34.4% and 35.7% for right and left sides respectively. The differences were not significant.

Table 4 and Figure 4 (a) 4(b) presents tooth wise and sex wise prevalence of dental caries. In both the sexes, when caries was compared between the anterior and the posterior teeth, caries prevalence was higher in the posterior segment than the anterior segment. When the caries prevalence of the anterior teeth was compared between the sexes, males showed higher caries prevalence than females and this difference was statistically significant (P<0.01).

Table 5 and Figure 5(a) 5(b) show tooth wise and arch wise prevalence of dental caries. Comparison of caries between the arches in the anterior segment revealed that caries attack was higher in the maxillary arch and the difference was significant statistically (P<0.001). On the other hand, comparison of caries prevalence was higher in the mandibular arch. The difference was significant statistically (P<0.001).
DISCUSSION

Among the study population, caries was significantly more prevalent in males than in females, which suggest that dental caries show some predilection for sex. Similar findings have been reported in other studies.\(^3\),\(^4\) This higher caries prevalence in males in primary dentition was due to early eruption and longer retention of these teeth in males.\(^5\)

Dental caries show some relation to the arches regarding prevalence pattern and the mandibular arch is affected more often than the maxillary arch, says Sathe\(^6\). In the present study, inter arch comparison revealed that caries prevalence was higher in mandibular arch and it was significant statistically in both the sexes. However, higher caries prevalence in upper arch was reported in one study.\(^8\)

On comparing caries prevalence in relation to right and left side of the oral cavity, it became evident that dental caries occurred predominantly as a bilateral phenomenon. Similar observations were also reported in some studies.\(^7\),\(^9\),\(^10\)

In the present study, caries prevalence was higher in posterior teeth as compared to anterior teeth in both the sexes. Caries attack was 4 times and 6 times more in the posterior teeth than in the anterior teeth among males and females respectively. Same was reported by Saravanan et al.\(^17\)

In the present study, among the posterior teeth, primary first molars in both the arches were less susceptible to caries than the primary second molars, even though the former erupts at an earlier age. This suggested that in primary dentition, among 5 year olds, the second molar is the tooth with highest caries experience. Similar findings were also reported by Fin Gorankich, Elfrink and Saraanan.\(^9\),\(^12\),\(^16\),\(^17\) This difference in individual tooth susceptibility could be due to the fissure topography of the molars. The pits and fissures in second primary molars are deeper and less completely coalesced.\(^8\),\(^13\)

It was also evident that the sequence of caries attack followed a specific pattern: mandibular molars, maxillary molars and maxillary anterior teeth were predominantly affected by caries, whereas the mandibular anterior teeth were least affected. This is
similar to the caries pattern described in other studies.\textsuperscript{13,16,17}

In the present study, the mandibular incisors were unaffected. This resembles the Early childhood caries pattern (Nursing caries) where the maxillary primary incisors, maxillary and mandibular primary molar are affected sparing mandibular primary incisors.\textsuperscript{14,15} The protection by the tongue and the opening of major salivary ducts near the lower incisors could be a reason for this resistance to caries in mandibular incisors.\textsuperscript{15} It was also evident that caries attack was higher in the lower arch than in the upper arch in the posterior teeth.

CONCLUSION

The prevalence of dental caries in deciduous dentition;

- Was higher in males than in females (P<0.05) in both arches.

- Was higher in mandibular arch in both the sexes (males P<0.05; females P<0.01).

- Showed a bilateral phenomenon in both the sexes.

- Was higher in primary second molars than the primary first molars in both the sexes and both the arches (posterior teeth P<0.01).

- Was higher in the maxillary arch than in the mandibular arch among the anterior teeth (P < 0.001).

- Was higher in the mandibular arch than in the maxillary arch among the posterior teeth (P<0.001).

REFERENCES


