INTRODUCTION

Down’s syndrome is an autosomal disorder caused by an extra chromosome 21. The syndrome is characterized by short stature, characteristic facial features with a protruding tongue, a wide range of learning difficulties, congenital heart disease, gastrointestinal disorders and other features.1 Dental characteristics include abnormally rounded labial forms of tooth crown, partial anodontia, delayed eruption and malocclusion such as crowding, posterior cross bite and anterior openbite.1 Periodontally, both the primary and the permanent dentitions are affected by a rapidly progressing and severe inflammation in more than 50% of patients with Down’s syndrome.5,8 There are defects of chemotaxis of polymorphonuclear and other phagocytes which explain the high incidence of pocketing and marginal bone loss in these individuals.3

The oral flora is not different from other siblings.4 While the periodontal break down is more pronounced in Down’s Syndrome patients,5 the studies of dental caries prevalence are less clear.6 A number of studies have revealed significantly low caries prevalence in Down’s syndrome patients when compared to non-Down’s Syndrome individuals,7,9 while others have shown no difference in caries prevalence.10 Review of literature showed no study on caries prevalence and oral hygiene status among Down’s syndrome patients in Saudi Arabia.

Truly relevant program in oral health could not be developed without the knowledge of disease levels and trends in various populations.11 The need for a baseline data regarding dental caries prevalence in Down’s syndrome patients is important to establish an adequate dental care program in these individuals.11 Therefore, the purpose of this study was to determine caries prevalence and oral hygiene status of Down’s syndrome patients in Riyadh City, Saudi Arabia.

METHODOLOGY

Following approval of the study by the College of Dentistry Research Center, permission to conduct the study was obtained from the Directors of all six rehabilitation centers for special children in Riyadh. Informed consent was obtained from the parents of Down’s Syndrome children to participate in the study. The medical records of the Down’s Syndrome children had earlier been reviewed with the help of the health care providers of the centers, and relevant information was extracted.
One examiner who was trained and calibrated by a senior faculty member of the College of Dentistry, King Saud University, carried out all the examinations. The WHO criteria were utilized for diagnosis of dental caries. Each child was examined while seated on a portable chair under natural light using a disposable mirror and tongue blade. An explorer was sparingly used on doubtful surfaces. In case of doubt, the tooth was marked as sound. No radiographs were taken.

The oral hygiene status was recorded as good, fair or poor using the index of James et al. The data were entered into a computer and analyzed using SPSS (V. 10) to generate descriptive statistics for each variable.

RESULTS

A total of 224 Down syndrome patients (131 male and 93 female) were examined. Their ages ranged from 3-22 years. Upon examination of the medical records, it was revealed that 30 of them had history of cardiac surgery, 38 had history of mild asthma, 10 hypothyroidism and 18 had other medical conditions such as epilepsy, allergies, diabetes mellitus; 128 reported no medical conditions.

The caries prevalence in the group was 89%. The mean decayed, missing and filled teeth scores were $11.99 \pm 3.91$ and $12.07 \pm 4.22$ in males and females respectively (Table 1). Even though the mean caries scores were slightly high among the females; the difference was not statistically significant.

The patients were further divided into three age groups i.e., 3-6 years, 7-14 years and 15-21 years. The mean dmft score in 3-6 years-olds was $4.71 \pm 1.27$. In the 7-14 years-olds, the mean dmft and DMFT scores were $6.09 \pm 2.34$ and $3.93 \pm 1.64$, respectively. The corresponding figures in the 15-22 years-olds were $1.53 \pm 0.54$ and $4.11 \pm 1.77$. The decay component was observed to be the major constituent of the decayed, missing and filled teeth scores (Tables 2 and 3).

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Table 4 summarizes the oral hygiene status among the study group. The majority (66%) had fair oral hygiene status, while 25% had poor oral hygiene with only 9% having good oral hygiene.

DISCUSSION

Down syndrome, a congenital autosomal anomaly also called trisomy 21, is a genetic alteration characterized by generalized growth and mental deficiency. Down syndrome patients have characteristic orofacial features. Some of the common oral findings in these children include open bite, macrognathia, fissured lips and tongue, delayed eruption of teeth, missing and malformed teeth, microdontia, crowding, malocclusion, bruxism, poor oral hygiene and a low caries experience. Down's syndrome children in many countries have been reported to have low caries experience. A number of studies on oral health status of healthy Saudi children have reported similar findings.
have shown a high caries prevalence in Riyadh. The present study also revealed a high caries prevalence and severity among the Down syndrome patients in Riyadh. This is not in agreement with studies on Down’s syndrome patient in other countries that showed a low caries prevalence as well as a high number of caries free Down’s syndrome patients. The low caries prevalence in Down syndrome children appears to be due to immune protection caused by the elevated salivary S. mutans specific IgA concentrations and a simpler occlusal morphology. However, it seems as sub-optimal oral hygiene status among the study population has neutralized the above stated advantages.

Oral hygiene plays an important role in the initiation and progression of dental caries and periodontal diseases. In the present study majority of the patients had fair to poor oral hygiene. This could be attributed to their reduced manual dexterity and lack of oral health education in these individuals and their care-takers.

The present study has provided baseline data regarding caries prevalence and oral hygiene status in Down’s syndrome patients of Riyadh. It is expected that the results of this study would help in planning of restorative and preventive dental care, especially oral health education of Down’s syndrome individuals and their care-takers.

CONCLUSIONS

• The caries prevalence and severity was very high among Down’s syndrome patients in Riyadh.

• There was no statistically significant difference in caries experience between male and female Down’s syndrome patients.

• Majority of the Down’s syndrome patients had fair oral hygiene.

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REFERENCES


