

BİR TIP FAKÜLTESİNDE VERİLEN ÇOCUK DIŞHEKİMLİĞİ HİZMETLERİNİN ANALİZİ

ANALYSIS OF PEDIATRIC DENTAL SERVICES PROVIDED IN A MEDICAL FACULTY

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Özet

Tıp fakültesi poliklinik ve kliniklerinden pediyatrik konsültasyon amacıyla gönderilen 1214 hasta incelendi. Bu retrospektif çalışmada, çocuklar, medikal ve oral sağlık sorunları ile dental tedavi gereksinimi bakımından analiz edildiler.

En sık karşılaşılan medikal sağlık sorunu lösemi (% 20), solid tümörler (% 15.1) ve kardiyak problemler (% 7.5) olmuştur. Lösemili ve solid tümörlü çocuklarda çürük prevalansı diğer kronik hastalıklı çocuklara göre anlamlı düzeyde yüksektir (P<0.001). Muayene edilen çocukların % 83'ünün ağızda tedaviyi gerektiren hastalık veya anomaliler tespit edilmiştir. Diş çürüğü, oral mukozit, diş gelişim bozukluğu ve gingivitis en sık karşılaşılan tanılar olmuştur. Akut dental ve oral sorunlar, çocukların % 71'inde belirlenmiştir. Çocukların % 50'si çocuk diş hekimi tarafından tedavi edilmiştir.

Bulgular tıp fakültelerinde çocuk dişhekimliği konsültasyon hizmetlerinin gerekliliğine işaret etmiştir.

Anahtar sözcükler: Çocuk, pediatri, çocuk dişhekimliği.

Abstract

All in- and out-patients at a medical faculty referred for a pediatric dental consultation (n=1214) were studied. In this retrospective study, the children were analyzed regarding their medical and oral condition and subsequent dental treatment need.

The most frequent medical condition was leukemia (20 %), solid tumors (15.1 %), and cardiac problems (7.5 %). Children with leukemia and solid tumors exhibited a significantly increased caries prevalence (P<0.001) compared to other chronically sick children. Of the children examined 83 % were diagnosed with diseases or abnormalities in the oral cavity requiring treatment. Dental caries, oral mucositis, altered tooth development and gingivitis were the most commonly seen diagnosis. Acute dental and oral problems were diagnosed in 71 % of the children. 50 % children were subsequently treated by a pediatric dentist.

The results indicated the need of pediatric dental consultation services at medical faculties.

Key words: Children, pediatrics, pediatric dentistry.

Introduction

Medically compromised children have an increased risk to develop oral diseases because the diseases itself may induce oral manifestations, a decreased host resistance or the treatment or medication may induce side effects in the oral cavity. Special consideration is also directed to patients whose medical condition is at risk if the patient suffers from dental disease.^{1, 2}

Dental treatment and examinations in children with chronic diseases may be irregular

and treatment sessions often postponed. Ertugrul et al. reported that the oral status of children with chronic renal failure had lower dental treatment need compared to controls however, they should receive dental health education in order to improve their overall oral health.³ According to another Turkish studies, caries level of leukemic children who were not caries-free before chemotherapy can be stabilized by caries prevention methods such as frequent topical fluoride applications and fissure sealants, intensive oral care and improved self-care practices⁴ and the childhood cancer survivors should be considered as at risk for caries and should periodically undergo an adequate evaluation by a specialist dentist.⁵ Concerning the in-patient pediatric dental consultation services most consultations concerned children and adolescents with neoplasm's and neurologic disorders.⁶

The Consultation Unit of Oral Diseases located in this Medical Faculty is unique and

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only accepts referrals of children who have been treated at in-patient and out-patient clinics of the departments. In this unit a trained pediatric dentist works for systemically compromised children in close connection with the pediatricians. The aim of the present study principally was to retrospectively analyze the pediatric dental services provided at the Consultation Unit of Oral Diseases in order to disclose oral treatment needs and to stress the vital importance of dental examination and treatment of medically compromised children.

Material and method

During a five-year period (January 2006-December 2010), 1214 patients, 508 boys and 706 girls, representing all pediatric consultations from the departments of pediatrics and emergency medicine, were studied retrospectively regarding the medical and oral condition and dental treatment variables. Children who are between ages 0 and 17 are accepted as pediatric population in the Consultation Unit of Oral Diseases as a hospital policy. The mean age of the patients was 8.2 ± 3.5 years. The consultations were formal referrals. Table 1 presented the variables studied. Information regarding medical diagnosis and medications were obtained from the medical records. Current dental records were obtained at the Unit where the child received dental treatment earlier.

Patient variables	Medical condition	Dental variables	Treatment variables
Age	Diagnosis	Dental variables	Type of examination
Sex	Medication	Periodontal condition	Treatment
Referral		Mucous membrane lesions	Follow-up
		Altered tooth development	

Table 1. Variables registered in 1214 medically compromised children referred for dental consultation.

Diagnostic criteria

All data on oral health were recorded and obtained from the current oral health evaluation form (FR-HAD-03-606-01) in the hospital. In this form, dental caries (d/D), missed (m/M) and filled (f/F) teeth were recorded in both dentitions. However, missed primary teeth were not presented since premature primary teeth loss was not

investigated in this study. No diagnostic index for periodontal health status is used in the form. Therefore, gingivitis was registered by using an arbitrary scale when clinical signs of redness, edema and/or bleeding were evident on more than one site. Other lesions of the soft tissues (like oral mucositis) were diagnosed according to etiology and also recorded as present or not. The degree of involvement of soft tissues was not recorded according to a scale. Disturbances of tooth development (hypoplasia, altered root development, hypodontia, etc.) recorded as present or not according to the number of teeth. The examination of dental caries and disturbances in dental development was, when needed, supplemented by dental panoramic and periapical radiographies.

Results

Medical condition in referred patients

During the 5 year period 1214 children were referred for dental consultation. Table 2 shows the patients divided into WHO classification groups.⁷ The most common medical diagnoses were: leukemia n=243 (20 %), solid tumors n= 182 (15 %), cardiac diseases n=85 (7 %). 929 (76.5 %) of the children and adolescents were on continuous medication. The most frequently used medications were: systemic antibiotics (567 patients), chemotherapeutic agents (425), and anticonvulsive drugs (81). 73 (6.1 %) were mentally retarded.

Diagnosis (WHO-code)	n	%
Neoplasms	425	35.1
Diseases of the respiratory system	255	21.1
Endocrine, nutritional and metabolic diseases	107	9.0
Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism	100	8.5
Diseases of the circulatory system	85	7.5
Diseases of the digestive system	75	6.2
Mental and behavioral disorders	73	6.1
Diseases of the nervous system	47	5.0
Diseases of the skin and subcutaneous tissue	10	1.0
Congenital malformations, deformations and chromosomal abnormalities	37	0.5
Total	1214	100

Table 2. Distribution of medical diagnosis in 1214 referred patients.

Oral condition

Of the 1214 patients 1008 (83 %) were, at the first examination, diagnosed with diseases or abnormalities in the oral cavity requirement treatment consideration and planning. Table 3 shows the distribution of dental diagnoses in the examined patients. Dental caries, diseases of the soft tissue (oral mucositis), disturbances in dental development and gingivitis were the most commonly found diagnosis. Dental caries prevalence was found 78 %. dft and DMFT were calculated 5.7 ± 1.1 and 2.1 ± 0.7 ; respectively. Mean number of decayed teeth in both dentitions (dt = 4.9 ± 1.7 and DT = 1.6 ± 0.9) were the major contributors for the percentage of population affected with dental caries. When comparing the major medical diagnose groups, children with leukemia and solid tumor exhibited significantly more decayed teeth in both primary (5.6 ± 2.7) and permanent teeth (1.7 ± 0.6) compared to other children examined (3.6 ± 2.1 and 0.5 ± 0.3 ; respectively; $P < 0.01$). Children with the diseases of the respiratory system showed more enamel hypoplasia compared to others ($P < 0.01$).

Diagnosis	n	%
Dental caries	850	70
Diseases of the soft tissue	656	54
Disturbances in dental development	425	35
Gingivitis	267	22
No pathological diagnosis	182	15

Table 3. Distribution of dental diagnosis in 1214 referred patients.

Referral and treatment

The reason for referral was classified in 4 different groups: 700 (57.6 %) patients exhibited acute dental or oral problems, 321 (26.4 %) were referred for baseline examination before the start of anticancer treatment, 112 (9.2 %) because of existing medically compromising conditions with an increased risk for oral diseases and the need of detection of focal infections and 81 (6.7 %) were under medical examination and in need of dental consultation.

The treatment of the patients was also classified in 2 different levels depending on the

sources utilized. 498 patients (41 %) required only consultation, 607 (50 %) were treated by a doctor of Pedodontics during hospitalization or 109 (9 %) who were medically stabilized were referred to public dental service clinic with instructions on treatment plan.

Discussion

The results of this study showed that medically compromised children are in need of an in-patient pediatric dental service. Generally, the spectrum of patients referred reflects the patient population of the hospital.⁸ In this study the most common medical diagnoses among referred patients are leukemia, solid tumors and cardiac diseases. This is in accordance with the previous studies from dental clinics of university hospitals which reported that most referrals concerned patients with malignant diseases.⁶ However, according to data from Turkish Statistical Institute in 2010, the first five diseases that 0-6 year old children were exposed to in the last 6 months are; upper respiratory tract infections (tonsillitis, middle ear infections, pharyngitis) with 39.4 %, diarrhea with 25.6 %, anemia with 11.3 %, oral and dental health problems with 9.1 % and communicable diseases (measles, varicella, mumps etc.) with 8.9. The first five diseases that 7-14 year old children were exposed to in the last 6 months are; infectious diseases with 46.3 %, oral and dental health problems with 26.3 %, visual problems with 16.8 %, diseases related with nutrition with 8.8 % and skin diseases with 8.7 %.⁹ In Turkey treatment of children with malignant diseases is mainly implemented in medical faculties. However, dental health care units or dental consultation units are not established in all medical faculties. Therefore, the prevalence of oral diseases according to the distribution of medical diagnosis in this study is more representative for a dental health care unit in a Turkish city.

Of 1214 patients examined during a five year period 83 % were diagnosed with diseases or abnormalities in the oral cavity required treatment consideration and planning. This finding is not in agreement with the previous studies which they reported lower percentages of dental treatment needs. Acs and Needelman⁶ reported a 56 % dental treatment need of in-patient dental consultation services and Arrrup et al. was determined the treatment need 53 %

at a regional hospital.¹⁰ According to a recent study from India, oral hygiene of the children with congenital heart disease was found to be poor with tongue coating (50.6 %), plaque (41.8 %), calculus (35.3 %), and caries (42.4 %).¹¹ In Turkey prevalence of dental diseases and the subsequent treatment need are higher compared to other developed countries. At age 5, mean dmft was found 3.7¹² and SiC was 7.75.¹³ In our study, dft and DMFT were determined 5.7 and 2.1 respectively. Patients had carious teeth in almost 5 primary teeth and at least 2 permanent teeth. Therefore, the higher percentage of the dental treatment need determined in this study population is considered to be normal and the result is in accordance with the profile of the country.

The results obtained for gingivitis and soft tissue diseases (Table 3) should be considered subjective since arbitrary scales have been using to record the symptoms and signs on the tissues. The researchers again call for a standard oral health evaluation form to be adopted in the hospital to facilitate comparisons of future reports.

The reasons for referral were classified into 4 different categories. Almost 27 % of the patients were referred for baseline examination before the start of medical treatment; sixty percent of the patients were referred for established oral mucositis occurred during chemotherapy or radiotherapy and acute dental problems, pulpitis and periapical lesions; and 9.2 % of them were referred for the detection of focal infections in the oral cavity before organ transplantation. Since 2002 new treatment protocols have been elaborated in Pediatric Hematology and Oncology Departments with demand of the Pediatric Dental Care Unit. The protocols include a baseline examination to eliminate possible foci for infection and to instruct patients in oral hygiene procedures before anticancer therapy; prevention and treatment of common side effects like oral mucositis during therapy and maintenance of good oral health status after the therapy. Therefore, patients with leukemia and solid tumors constituted the major part of our study population. The other branches of the department such as cardiology are aware of the importance of the maintenance of overall oral health and generally referred their child patient to get pediatric dentist consultation for the

detection of focal infections and their subsequent treatment.

This study identified several factors that need consideration of further exploration and development of pediatricians' role in providing for the oral health of their patients. First, dental caries remains a substantial problem in young children and is made worse by existing barriers that prevent them from obtaining dental care. Hospital pediatricians have the opportunity to play an important role in helping children and their families gain access to dental care. Therefore, instructional efforts to increase pediatricians' dental knowledge in the importance of oral diseases should be established. A second conclusion from this study is that the need of pediatric consultation service at medical faculties and pediatric dental care for medically compromised children to ensure the continuation of high quality of dental care.

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