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Prevalence of medically compromised conditions in dental patients

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Abstract

Objectives: To study the prevalence of medically compromised conditions in patients seeking dental treatments at the Faculty of Dentistry, Chulalongkorn University. **Study design:** The files of 58,317 patients seeking dental treatments at the Faculty of Dentistry, Chulalongkorn University from 2002-2004 were retrieved and reviewed for medically compromised conditions. **Results:** From a total of 58,317 patients, 7,167 patients (12.2%) had medically compromised conditions. The five most prevalent conditions in descending order were allergy, hypertension, diabetes mellitus, heart diseases and thyroid diseases. **Conclusions:** Even though the prevalence of medically compromised conditions in dental patients is not high, dentists should bear in mind that some of the patients may harbor such conditions which are contraindicated for certain dental procedures or medication or require special attention when treating these patients. Therefore, a thorough history taking and careful clinical examinations are mandatory before commencing any dental treatment.

Keywords: Medically compromised conditions, prevalence, dental patients.

Introduction

The advances in medical technology, greater access to medical facilities and better socio-economic conditions enable people to live longer as evidenced by an increase in the life expectancy in many parts of the world (1). These improvements are also reflected in better oral health in a number of patients since they still retain their natural teeth into the old age. As a consequence, dentists are expected to encounter a greater number of patients, especially the elderly. As the proportion of the elderly in the population continues to increase, there will be more patients with medically compromised conditions. When dentists have a chance to treat these patients, there are

concerns that they should be aware of such as the effect of medical problems and their treatments on dental treatment plans, the dental or oral soft tissue problems that can arise in these patients and the effect of dental treatments on their medical conditions.

There is a paucity of data concerning the prevalence of medically compromised conditions in dental patients from Thailand. To the best of our knowledge, there is only one small-scale study from one dental school in Bangkok (2). The objective of this study was to determine the prevalence of medically compromised conditions in Thai dental patients.

Materials and Methods

A total of 58,317 patient records from the Faculty of Dentistry, Chulalongkorn University starting from 1st January 2002 to 31st December 2004 were reviewed for the presence of medically compromised conditions. Demographic data of the patients were also collected. Medically compromised conditions were classified into 8 categories as follows; allergy, endocrine disorders, cardiovascular diseases, respiratory diseases, hematological disorders, liver diseases, renal diseases, and others. The age of the patients was analyzed by descriptive statistics. Chi square was used to determine difference between genders. A p-value less than 0.05 was considered statistically significant.

Results

From a total of 58,317 patients, 7,167 patients (12.2%) were afflicted with medically compromised conditions. The age of dental patients who were afflicted with medically compromised conditions ranged from 1 to 95 years with the mean age \pm SD = 49.6 \pm 17.25 years. The majority of them (54.3%) were in the 5th to the 7th decades of life (Fig.1). If each category was considered separately, the mean ages of the patients were in the 4th to the 6th decades of life (Table 1). There were 2,579 male patients (35.98%) and 4,588 female patients (64.02%). The number of female patients who had medically compromised conditions was statistically higher than that of male patients ($p=0.000$). Almost all categories elicited female predilection over male patients except in the respiratory diseases and liver diseases category. But, only in the allergy, cardiovascular diseases, endocrine disorders and hematologic disorders categories, that female patients significantly outnumbered male patients (Table 1).

In the present study, the most frequently encountered disease category was allergy followed in descending order by cardiovascular diseases, endocrine disorders, respiratory diseases, hematological disorders, liver diseases, others and renal diseases, respectively (Fig.2).

In the allergy category, 14.33% of them were allergic

rhinitis while the rest were allergy to drugs. Most patients were allergic to penicillin followed by sulfa group, tetracycline and aspirin respectively.

Discussion

The category which exhibited the highest mean age was the cardiovascular diseases category followed by the endocrine diseases category. This reflects the character of these 2 categories which are usually encountered in adult or elderly patients, while the hematologic disorders category showed the lowest mean age since some hematologic disorders are congenital abnormalities and can be found at birth or during childhood.

The present study demonstrated female preponderance in almost all categories even in the generally accepted male predominance diseases such as cardiovascular diseases. This phenomenon may be attributable to the fact that females pay more attention to both general health and oral health than males as evidenced by the greater number of female patients attending Chulalongkorn dental school (female: male ratio=1.5:1)

The prevalence of medically compromised conditions in dental patients in the present study was 12.2%. This figure is rather low when compared with previous studies. Rhodus et al. (3). reported that the prevalence of medical conditions in dental patients increased from 7.3% in 1976 to 24.6% in 1986. Smeets et al. (4). revealed the prevalence of medically compromised patients from the survey of 29,424 dental patients from the Netherlands to be 28.2%. Saengsirinavin et al. (2). disclosed the prevalence of medical conditions in Thai dental patients to be 55.45%. Umino et al. (5) reported that one or more medically compromised conditions were encountered in 64.2% of elderly Japanese dental patients. Cottone et al. (6) conducted a survey from 4,365 patients and the result indicated that 68.5% of the patients had at least one significant medical problem. Nery et al. (7) reviewed 581 periodontal patients' records. The results revealed that the private office group had 27.6% medical problems, the academic dental center had 46.3%, while

Table 1. Age and gender of medically compromised dental patients

Medically compromised conditions	Age (mean \pm SD)	Number of M:F	Chi square for gender difference (p-value)
Allergy	39.68 \pm 16.86	1212 : 2526	0.000
Cardiovascular diseases	56.54 \pm 14.22	956 : 1405	0.000
Endocrine diseases	52.73 \pm 14.27	434 : 852	0.000
Respiratory diseases	44.89 \pm 23.65	288:188	0.208
Hematologic disorders	31.42 \pm 18.38	53 : 166	0.002
Liver diseases	39.84 \pm 14.24	101 : 89	0.835
Renal diseases	45.18 \pm 16.84	26 : 42	0.317
Others	39.28 \pm 17.71	71 : 94	0.371

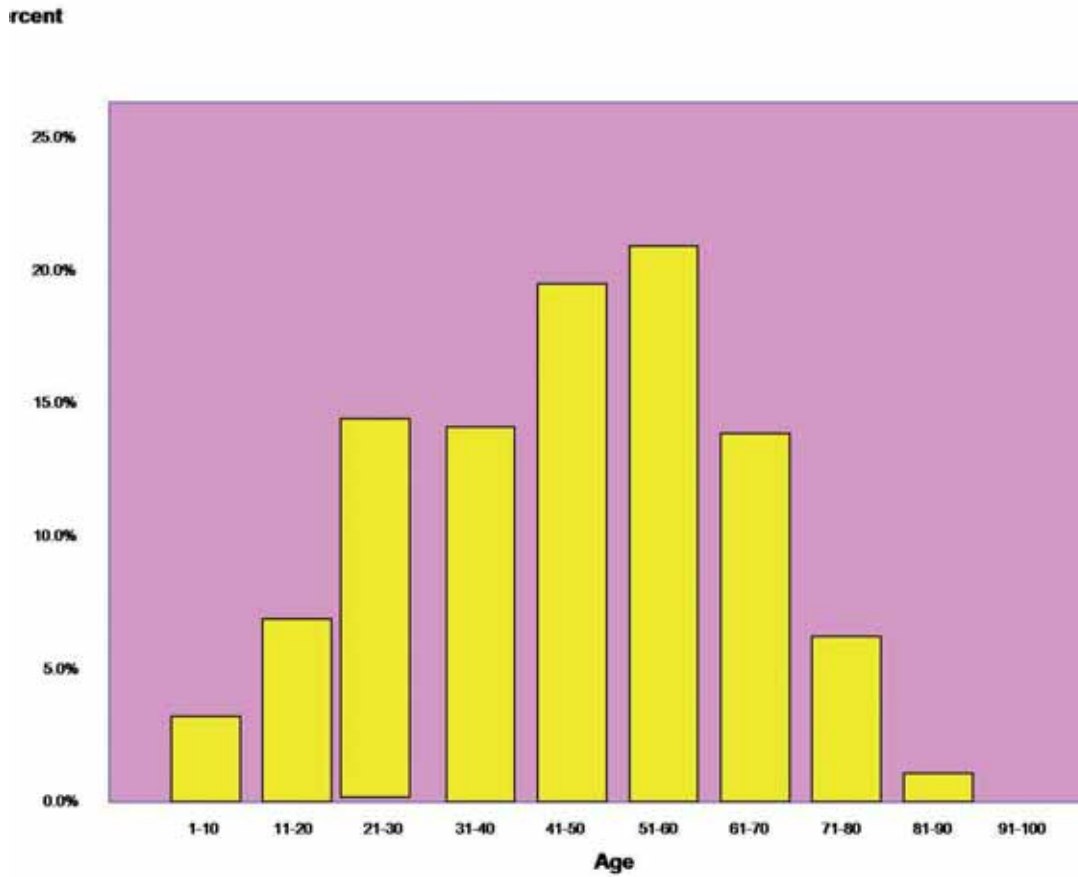


Fig. 1. The age distribution of dental patients who were afflicted with medically compromised conditions.

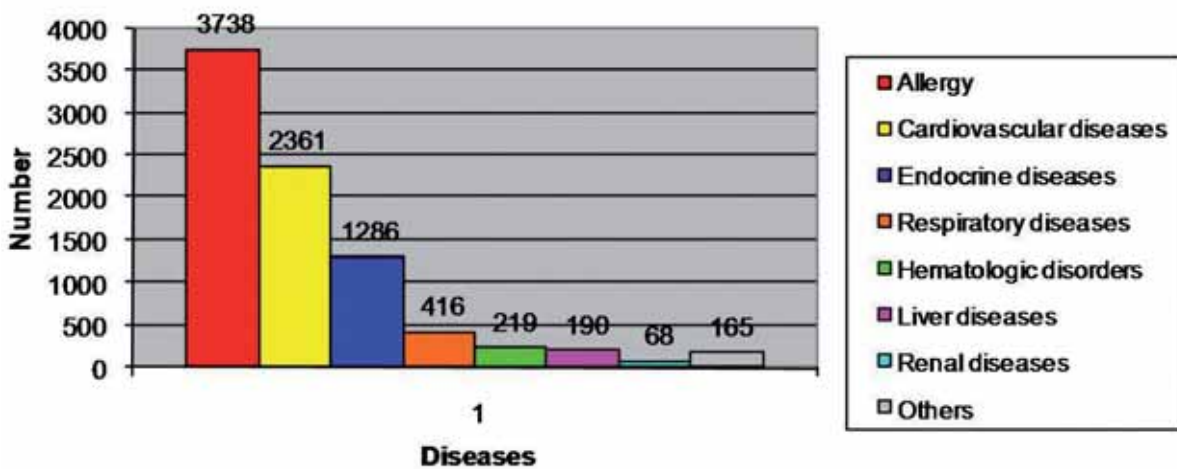


Fig. 2. The distribution of medically compromised conditions in dental patients.

the hospital dental clinic showed the highest prevalence of 74.1%. The reasons for this may be accounted for by the fact that the present study recruited patients across a wide age range in contrast to most previous studies which focused exclusively on elderly patients since the prevalence of medically compromised conditions tends to increase with advancing age (8,9). The majority of people in developing countries such as Thailand do not undergo routine medical check-ups. As a consequence, patients harboring asymptomatic medically compromised conditions such as hypertension, heart disease or diabetes mellitus do not realize that they have medically compromised conditions. The present study is a retrospective study conducted by reviewing the patient records. The major drawback of the present study is that it does not conduct the interview and physical examinations so patients with undiagnosed medically compromised conditions may go undetected. The other reason is that patients with infectious or sexually transmitted diseases such as AIDS may not give accurate medical histories for fear that they may be denied dental treatments. Surprisingly, there was a study from one dental school situated in the same Bangkok area reporting a prevalence of medically compromised conditions in dental patients as high as 55.4% (2). This unusual high prevalence may occur by chance since there were only 541 patients in that small-scale study.

Allergy ranked as the most common medically compromised conditions encountered in dental patients in the present study. Similar findings were reported by Saengsiriravin et al. (2) in a small-scale study from Bangkok area. The studies by Smeets et al. (4) and Suomi et al. (8) also indicated that allergy ranked as the most frequently encountered medically compromised conditions in dental patients.

In the present study, there were more drug allergy patients than the allergic rhinitis patients and the most common drug that the patients were allergic to was penicillin followed by sulfa group as in the study by Jainkittivong et al. (10). The incidence of penicillin allergy has been reported to be from 1-10% (11). Dentists should take a thorough patient history especially drug allergy before prescribing any medication.

In the present study, cardiovascular diseases came second as the most prevalent medically compromised conditions in dental patients as in the studies by Smeets et al. (4), Persson et al. (12), and Jainkittivong et al. (10). A number of previous studies reported that cardiovascular diseases were the most prevalent medically compromised conditions in dental patients (3-7). Endocrine disorders, the majority of which were diabetes mellitus, came third in the present study. Allergy, cardiovascular diseases, and endocrine disorders are usually among the top five most common medically compromised conditions in dental patients, but in different orders in dif-

ferent studies (13). The other category that is always among the top five most common medically compromised conditions in elderly dental patients is bone and joint disorders.

As more and more patients with medically compromised conditions are seeking dental treatments, dentists should be prepared to handle this type of patient. A thorough history taking and physical examination in every patient is important to identify patients with medically compromised conditions, but unaware of them. There may be a modification in treatment plan to suit individual patient (14,15). For example, the first six month after acute myocardial infarction, dental treatment should be reserved for emergency situation only (14) or the avoidance of bruising maneuvers during dental treatment in patients with coagulation factor deficiency (16). Prescribing medications for this type of patient must be carried out with extra-care to avoid interference with multiple medications patients already have and an undesirable drug interactions (15). Antibiotic prophylaxis is compulsory for certain dental procedures. Dental setting is regarded as a stressful environment for certain individuals. It would be beneficial to reduce stress in the dental setting when treating this type of patient especially in hypertensive patients (14).

Conclusions

Even though the prevalence of medically compromised conditions in dental patients is not high, dentists should bear in mind that some of the patients may harbor medically compromised conditions which are contraindicated for certain dental procedures or medications or required special attention when treating these patients. Therefore a thorough history taking and careful clinical examinations are mandatory before commencing any dental treatment.

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