

## MEDICALLY-COMPROMISED SAUDI PATIENTS ATTENDING THE DENTAL PRACTICE: A RETROSPECTIVE STUDY

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اشتملت الدراسة على مراجعة الحالة الصحية من ملفات «٢٠٩٦» حالة للمرضى المراجعين لكلية طب الأسنان - جامعة الملك سعود ٢٥٪ من هؤلاء المرضى كانوا يعانون من واحد أو أكثر من الأمراض ذات الأهمية قصوى لطبيب الأسنان، معظمهم كان بين العقد الثاني والخامس من العمر. وكان مرضى السكر يشكلون ٢١,٣٪ ومرضى ارتفاع ضغط الدم ١٥,٥٪ في حين اختلفت نسبة الذين يعانون من الربو وأمراض القلب والحساسية. الدراسة اشتملت أيضاً معرفة الخطوات التي قام طبيب الأسنان باتباعها والعمل على اتخاذ التدابير الوقائية حتى لا يتعرض لبعض الأخطاء التي يمكن تلافيها قبل بداية العلاج ولكن يصعب معالجتها حين وقوعها.

To determine the medical condition of patients attending the dental clinics at King Saud University College of Dentistry, 2,096 patients' files were studied. About 25% of the patients had history of medical conditions, the highest frequency being among those in their third, fourth and fifth decades of life. Of the medically compromised patients, 21.3% were diabetic, 15.5% hypertensive, while the remainder had such conditions as asthma, arthritis, cardiac problems and penicillin hypersensitivity. The results of this study underscore the need to accurately record patients' medical history before dental treatment so as to take adequate precautions.

The emphasis of dental education is turning in the direction of training students to concern themselves with the whole patient. Any meaningful participation by the dental surgeon as a member of the medical diagnostic team can be possible only if: a) he has some understanding of the disease process which involves the different organs; b) he adopts the methods of clinical diagnosis; and c) he is familiar with the investigation modalities employed in medicine and surgery.

The dentist is no longer treating teeth in patients

Received 13/02/95; revised 18/04/96; accepted 07/07/96

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but patients who have teeth.<sup>1</sup> Therefore, it is imperative that with the improvement in technical skills, there should be an even greater appreciation of the many different manifestations and interrelationships of oral and systemic diseases understanding its pathophysiology so that treatment can also be directed towards management of the patient as a whole rather than individual management of the disease process.

Identifying systemic illnesses is very important to the safety of the patient. The success of treatment depends on the information about patient's health status and the medication they are receiving since most drugs used have a broader range of action as well as serious interactions. Taking a careful medical history before any type of dental treatment is vital and mandatory to proper patient's care. It is important to identify and detect any systemic

diseases in all patients while taking such history. This is a difficult task since most of the patients attending the dental clinic in our society have little or no idea about their medical problems. Some of them are illiterate while others are unable to give clear history for unknown reasons. Neglecting taking proper medical history might result in some grave complications, such as infective endocarditis<sup>2</sup>, with a mortality rate of approximately 30% following simple dental procedures.

The objective of this retrospective study was to emphasize the importance of taking a thorough medical history prior to dental treatment since this is one of the most commonly highlighted subjects in the curriculum for dental students everywhere. Other objectives are to assess the percentage of medically-compromised Saudi patients who visited the dental college seeking dental treatment; to estimate the most frequently encountered diseases, and the amount of appreciation and careful evaluation of the patient's health status; and to determine any investigation done to conclude a modification of dental treatment and required precautions. We also hope to draw attention to any new recommendations based on the result of the study towards improvement in dental management of the medically-compromised patients.

### Materials & Methods

Two-thousand-ninety-six (2,096) files of Saudi patients were randomly retrieved from the Registration & Record Division at King Saud University (KSU) College of Dentistry. These files were issued between the years 1988 - 1993.

These files were studied for sex, age, chief complaint and associated medical problems. Additionally, investigation of any professional consultation requested during treatment period, and any modification in the dental treatment warranted by the presence of the medical condition, or requested by the patient's physician, have also been taken. Emphasis was given to the patient's response to the questionnaire and the history taken by the examining dental practitioner.

### Results

Out of the 2,096 files, 1,231 were females (58.7%) and 865 were males (41.3%). The total number of patients with medical problems was 530

(25.3%) of which 233 were males (43.96%) and 297 were females (56.03%). This indicates that one in four patients attending the Dental College at King Saud University had associated medical problem (Table 1).

Some of the patients had a history of more than one medical problem with a total number of 616 medical problems. Our results showed that the highest incidence of medical problems occurred in the third, fourth and fifth decades of life and kept the same frequency with increasing age as shown in Table 2.

Tables 3a and b showed that 81 cases (15.28%) of the medically compromised patients mentioned in the questionnaire that they had associated medical problems, but the examining practitioner did not record that in the medical history. Of the 530 patient records with medical problems, 103 patients

Table 1. Number and distribution of patients according to sex.

Sex	Total No. of Patients	No. of Patients with Medical Problems	% of Patients with Medical Problems
Females	1231	297	56%
Males	865	233	44%
Total	2096	530	100%

Table 2. Distribution of patients according to age and medical status.

Age	No. of Patients	No. of Patients with Medical Problems	%
1-10	425	38	8.9
11-20	452	57	12.6
21-30	460	137	29.8
31-40	324	127	39.2
41-50	208	85	40.9
51-60	177	66	37.3
Above 60	50	20	4.0
Total	2096	530	100%

Table 3a. Distribution of patients according to their medical status.

Quality of Findings	No. of Patients	% of Total
Normal patients (no medical history)	993	47.4
Patients with medical history	530	25.3
Patients with no case history on file	573	27.3
Total	2,096	100%

Table 3b. Number of patients and their recognition of dentist.

Quality of Findings	No. of Patients		%of Total
	No. of Patients	%of Total	
Medical problem clear on file (Questionnaire and case history)	449	84.7	
Medical problem not clear (Questionnaire only)	81	15.3	
Total	530	100%	

Table 4. Number and distribution of patients according to their medical problems.

Medical problems	No. of Patients		%of Total
	No. of Patients	%of Total	
Diabetes	113	18.35	
Hypertension	82	13.31	
Asthma	79	12.82	
Arthritis	71	11.53	
Anemia	55	8.93	
Cardiac problem	28	4.55	
Epilepsy	17	2.76	
Drug allergy	52	8.55	
Hepatitis	9	1.47	
Bleeding tendency	10	1.62	
Psychiatric	5	0.8	
Thyroid disease	21	3.4	
Hypotension	10	1.62	
Others	64	10.39	
Total	616	100%	

consultation was advised. The rest of the patients did not have any records of medical consultation or investigations performed for them.

The results showed that diabetic patients constituted the majority of cases, 113 patients (21.32%) and 82 (15.47%) were hypertensive. Bronchial asthma and arthritis came next with an incidence of 14.9% and 13.49%, respectively. Only 28 patients (5.28%) had cardiac problems, 9 (1.7%) had a history of hepatitis and 52 patients (9.81 %) had a positive history of penicillin hypersensitivity.

All hepatitis patients (9) and those with bleeding disorders (10) were investigated properly and written physician's consultations were obtained. On the other hand, only 27 diabetic patients (23.9%) were investigated and nine patients (32.14%) with cardiac problem had written consultations from physician. That is, only 55 patients were properly investigated (10.37% of the total number of medical problems).

Dental treatment modification and/or drug indication or contra-indication, e.g. local anaesthetic administration with or without epinephrine and prescription of prophylactic antibiotic, were mentioned in 16 files only (3.01%) of all the medically compromised patients.

## Discussion

The concept of taking a medical history, before any dental treatment is vital and mandatory for proper patient's care. However, there are conflicting reports on the best methods of acquiring this medical history, and the use of such history by the dentist to modify treatment. Some studies reported the superiority of questionnaire over history taking by dentist,<sup>3</sup> while others showed that medical history is more comprehensive than the questionnaire.<sup>4,5</sup>

At King Saud University College of Dentistry, a questionnaire completed by the patient, was used as guide to dental practitioners during direct interview. This is to determine the adequacy of history taken by the dentist and to identify the occurrence of medical problems that might eventually cause complications.<sup>4,5</sup> Emphasis should be given on how to quickly conduct an interview by the screening officers or the dentist for some important conditions, which the patients have in the questionnaire. The frequency with which dentist had omitted an important information from the medical history was found to be 15.3% of the total number of files of patients with medical problems. In fact, 573 (27.3%) of the files showed no medical history. Identification of these medical disorders is of great importance in order to take the necessary precautions and to avoid the occurrence of life threatening situations. Their recognition should be followed by proper medical consultation, thorough physical examination and intensive laboratory investigation.

The importance of history taking will not only result in modifying dental treatment but, most importantly, will lead to identifying patients with contagious diseases like hepatitis, tuberculosis and AIDS, resulting in their isolation and separation from the other patients receiving dental care thus preventing cross infection. In our study, all patients with history of hepatitis were investigated. Those with history of heart condition are likely to develop infective endocarditis of which less than 8%

received antibiotic prophylaxis and 30% (9 patients) were referred to their cardiologist for consultation.

Information about patient's health status should include the medication they are receiving which is always challenging to the dentist. Most drugs used by dentists have a broad range of action that exert multiple effects, and serious drug interactions are known to occur. This was studied previously and was found that between 3-5% of all hospital admissions was the result of drug interactions.<sup>67</sup> Antibiotics, aspirin-containing medication or non-steroidal anti-inflammatory (NSAID), which are commonly used by dentists, were implicated as the cause of some of these adverse reactions requiring hospitalization. In this study, it was found that the examiners had overlooked the enquiry about any form of medications used by patients.

Since penicillin is very commonly used in the dental profession, history of hypersensitivity should always be confirmed by performing a sensitivity test before switching to another antibiotic. Careful physical examination of all patients with heart condition is mandatory, and cardiologist consultation is a must to assess the present state of the heart. This is because most cardiac ailments are long standing that might be aggravated or, possibly, may provoke heart attack following dental procedure or use of dental medicaments.

A baseline laboratory assessment is essential for all patients with chronic systemic diseases, e.g. diabetes, liver or kidney disease, as a guide if the condition worsens. Most patients with such diseases are on medication, some with serious effects. End-stage renal disease will require heparinization of the blood for dialysis. The author had seen two cases with severe bleeding following extraction, one day after dialysis. Post-coronary bypass patients,

although they may not require antibiotic prophylaxis, are on aspirin. This affects the platelet function and prolong bleeding should be expected with most dental procedures, likewise patients on NSAID for arthritis.

Timing of the dental treatment is very essential. Diabetic patients should be treated early in the morning after taking their meal and medications, while patients with contagious diseases, e.g. hepatitis, must be treated at the end of the day in order to avoid cross infection.

We conclude with the fact that some important aspects of history taking is the medical part with the use of a questionnaire. However, recording the medical history following an interview is still not a safe method unless the consequences of omitting such vital information is to be explained to the patient and is clear the examiner.

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