

Prevalence of systemic diseases among patients attending department of dentistry at government medical college and hospital in Latur, INDIA

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Abstract

Aim: The study was conducted to determine the prevalence of systemic disease among patients requesting dental treatment. **Materials and Methods:** Data was collected from 1000 randomly selected patients visiting department of Dentistry for treatment of various dental problems. The patients were asked to provide a Yes or No answer to questions about specific medical conditions and were grouped according to the system involved: cardiovascular diseases, haematological diseases, endocrine diseases, respiratory diseases, infectious diseases, neurological diseases, dermatological diseases and psychiatric diseases. **Results:** The overall prevalence of systemic diseases in dental patients was 22.1%. The prevalence of diseases involving different system was: cardiovascular diseases- 7.7%, respiratory diseases- 0.7%, endocrine disorders- 5.1%, haematological diseases- 1%, neurological diseases- 0.6%, infections- 1.5%, dermatological diseases- 4.6%, and psychiatric diseases- 0.9%. Hypertension (7.6%) was the most prevalent condition followed by diabetes mellitus (4.9%). **Conclusion:** There is a high prevalence of systemic diseases among individuals requesting dental treatment. It is necessary to identify such conditions that have an impact on, and can be impacted by dental treatment to avoid complications.

Key Words: Prevalence, Systemic Diseases, Dentistry.

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INTRODUCTION

An evaluation and consideration of health status of patients prior to any dental and oral surgical procedure forms an essential part of comprehensive health care system. Apparently well but in fact medically compromised patients (patient whose general condition is deranged because of underlying systemic disease) when presented with dental problems, majority of them are unaware of their systemic status i.e. whether they are

healthy or have any systemic disease which increases unacceptable possibility of complications if disease remains untreated¹. Medical conditions may alter dental treatment because of direct effects on oral tissues, bacteremia, altered haemostasis, compromise of the immune system, and drug interactions. Systemic disease can also lower a patient's tolerance to dental interventions or limit the patient's ability to maintain adequate oral hygiene². Most treatment of oral diseases involves invasive procedures and pharmacotherapeutic agents. Examples of patients for whom medical histories modify their cases include the use of local anaesthesia with vasoconstriction for dental patients with compromised cardiovascular conditions, invasive dental procedures that induce temporary bacteremia and increase the risk of patients' susceptibility to infections of endocardium or patients who have prosthetic replacements³. Among patients at risk, bacterial endocarditis is one of the most serious complications of dental treatment. Tomas *et al.* found six out of 87 patients with definite bacterial endocarditis developed the disease as a result of dental

treatment. Another six developed it due to oral infections. This makes it mandatory such patients be recognized and given oral hygiene instructions and prescribed prophylactic antibiotics according to current protocols⁴. Whereas adequate pretreatment knowledge of involvement of systemic disease may significantly decrease complications associated with dental and oral surgical procedures, which can be effectively done by utilization of many techniques available to diagnose and treat the underlying systemic disease which results in decreased morbidity and mortality associated with systemic diseases which is precipitated by dental treatment. The present study was carried out with the following aims and objectives:

- To find out the overall prevalence of various systemic diseases in patients reporting to department of Dentistry at Government Medical College Hospital for treatment of various dental problems.
- To find out the prevalence of individual systemic diseases in patients reporting to department of Dentistry at Government Medical College Hospital for treatment of various dental problems.
- To find out the prevalence of systemic diseases according to three different age groups.

MATERIALS AND METHODS

The study was conducted at department of Dentistry, Government Medical College and Hospital, Latur, Maharashtra, India. The study population comprised of 1000 randomly selected patients who reported to the department of Dentistry seeking treatment for various dental problems. The data was collected through a personal interview conducted by one of the author who completed the questionnaire. The patients were asked if they had any specific medical condition(s). The patients were asked to provide a Yes or No answer to questions about specific medical conditions. The patients were grouped according to the system involved under the following headings.

- Cardiovascular diseases: hypertension, ischaemic heart disease, congenital heart disease, rheumatic heart disease, patients' undergone angioplasty, coronary artery bypass surgery, or prosthetic valve surgery.

- Hematological diseases: Anemia, leukemia, bleeding disorders, any other.
- Endocrine diseases: Diabetes mellitus; thyroid disorders, any other.
- Respiratory diseases: Bronchial asthma, chronic obstructive pulmonary disease (COPD), any other.
- Infectious diseases: Tuberculosis, leprosy, hepatitis, HIV infection, any other.
- Neurological diseases: Epilepsy, neuralgia any other.
- Dermatological diseases: Psoriasis, dermatitis, scabies, vesiculobullous diseases, any other.
- Psychiatric diseases: Depression, obsessive compulsive disorder, any other.

The overall prevalence of systemic diseases among dental patients was calculated. Similarly, the prevalence of individual systemic diseases was calculated. The patients were grouped into three age groups: less than 20 years, 20-40 years, and more than 40 years. The prevalence of systemic diseases in these different age groups was calculated. The collected data was analysed with SPSS statistical package.

RESULTS

The prevalence of various systemic diseases in the patients visiting department of Dentistry for dental problems is shown in table 1. A total of 1000 randomly selected patients who reported to the department of Dentistry seeking treatment for various dental complaints participated in the study. The overall prevalence of systemic diseases in patients visiting department of Dentistry was 22.1%. The prevalence of diseases involving different system was: cardiovascular diseases- 7.7%, respiratory diseases- 0.7%, endocrine disorders- 5.1%, haematological diseases- 1%, neurological diseases- 0.6%, infections- 1.5%, dermatological diseases- 4.6%, and psychiatric diseases- 0.9%. Amongst the various systemic diseases, hypertension 76 (7.6%) was the most prevalent condition followed by diabetes mellitus 49 (4.9%). The patients were subdivided according to the age groups: less than 20 years, 20-40 years, and more than 40 years. The prevalence of systemic diseases in the three age groups is shown in table 2. The prevalence of systemic disease among patients more than 40 years age was highly significant than the patients in two younger age groups.

Table 1: Prevalence of systemic diseases in 1000 patients visiting department of Dentistry

Sr. No.	Systemic disease	No. of patients	Prevalence
1.	Cardiovascular system	77	7.7%
	Hypertension	76	
	H/O coronary artery bypass	1	
2.	Respiratory system	7	0.7%
	Asthma	4	
	COPD	3	
3.	Endocrine	51	5.1%
	Diabetes Mellitus	49	
	Hypothyroidism	3	
4.	Hematological	10	1%
	Anemia	5	
	Deep vein thrombosis	1	
	Sickle cell disease	1	
	Idiopathic thrombocytopenic purpura	1	
	Raised prothrombin time	2	
5.	Neurological	6	0.6%
	Epilepsy	2	
	Trigeminal neuralgia	2	
	Postherpetic neuralgia	2	
6.	Infections	15	1.5%
	Tuberculosis	1	
	Herpes simplex	5	
	HIV	3	
	Leprosy	4	
	Chicken pox	2	
7.	Dermatological	46	4.6%
	Allergic contact dermatitis	9	
	Scabies	13	
	Psoriasis	9	
	FDE	2	
	Urticaria	4	
	Insect bite reaction	2	
	Drug reaction	2	
	ICD	1	
	ED	1	
	Pemphigus	1	
	Lichen planus	2	
8.	Psychiatric	9	0.9%
	OCD	2	
	Depression	5	
	Alcohol use disorder, cannabis use disorder	1	
	Schizophrenia	1	
	Total	221	22.1%

Table 2: Prevalence of systemic diseases in 1000 patients visiting department of Dentistry according to different age groups

	<20 years	20-40 years	>40 years
CVS	0	2	75
RS	0	0	7
Endocrine	0	2	49
Hematological	2	3	5
Neurological	1	0	5
Infections	5	4	6
Dermatological	3	25	18
Psychiatric	1	3	5
TOTAL	12	39	170

Chi Square test: 110.14; df:14; p<0.001; Highly Significant

DISCUSSION

The concept of taking a medical history, before any dental treatment, is vital and mandatory for proper patient care. Oral care is an integral part of medical care. This is particularly apparent when the patient seeking oral health care presents with systemic illness or disability. It is becoming an increasingly larger responsibility for the dentist and other oral health care professional to identify with systemic diseases, compromising conditions and disabilities that have an impact on, and can be impacted by oral health treatment⁵. This study was carried out to assess the prevalence of systemic diseases among dental patients attending department of Dentistry at Government Medical College and Hospital, Latur. The overall prevalence of systemic diseases in patients with dental problems was 22.1%. There are various studies showing different prevalence rate of systemic diseases in dental patients. Kolte VS *et al* found prevalence of 4.055% of systemic diseases in oral surgery patients evaluated over a period of six months⁶. Hari *et al*. saw a prevalence rate of systemic disease in dental patients up to 14.5%⁷. Thus, the prevalence rate of systemic diseases in these studies is less than that obtained in the present investigation (22.1%). On the other hand, the study by Cottone and Katraya showed prevalence rate of medically compromised patients in dental practice as 35.3%⁸. Similarly, Fernández-Feijoo J *et al*. found prevalence rate of 35.2% in public system and 28.1% in private system systemic disease among patients requesting dental consultation⁹. These variations in the prevalence rates obtained by different investigators may be attributed to several factors including age, sex, sample size, methodology, and disease category involved in the study. The result of the present study indicates hypertension to be the leading medical condition, followed by diabetes mellitus in patients with dental problems. The least prevalence was observed for neurological diseases. This is in accordance with some studies. Cottone HA *et al*.⁸ and Kolte VS *et al*.⁶ found cardiovascular diseases to be the most prevalent condition followed by metabolic diseases among dental patients. Our results differ from those obtained by Khader *et al*. who found gastrointestinal disease to be most prevalent followed by bleeding tendencies. Hypertension was the least prevalent disease¹⁰. Similarly Sachdeva SK *et al*. found gastrointestinal disease to be the most prevalent condition followed by hypertension, arthritis, diabetes and anemia¹¹. In contrast to most previous studies which focused on elderly dental patients, the patients in this study were included from all the age groups. The

prevalence of systemic diseases was significantly higher in patients older than 40 years age as compared to the younger patients. Although medical emergencies are rare in dental practice, they can occur during or as a consequence of a dental procedure and they may have a fatal outcome. The results of our study confirm that there are a number of patients with medical disorders among individuals requesting dental treatment. Such patients should be identified and their systemic condition thoroughly evaluated and necessary precautions taken prior to and during dental treatment to avoid complications.

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