

Pattern of Medical Conditions among Patients Attending Oral and Maxillofacial Surgery Over a Period of One Year

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Abstract

Objectives: A survey was conducted to determine the pattern and frequency of medical comorbidities, present in patients visiting the department of oral and maxillofacial surgery during one calendar year.

Materials & Methods: All patients regardless of age and gender who reported to oral and maxillofacial surgery during the period of one year (October 2013 to September 2014) were included in the study. The patient's medical history was recorded on a predesigned proforma to find out the pattern and frequency of different medical problems. Incomplete forms and patients treated under general anaesthesia were excluded from the study. Descriptive analyses were done.

Results: From a total of 12960 patients, 6095 patients (47%) reported having comorbidities. The patients' age was grouped into decade with majority in the 4th decades of life. Female (51%) to male (49%) ratio was 1.04:1. Patients presenting with single comorbid disease were 83.2% and patients having more than one were 16.8%. Hypertension was the most commonly presenting comorbid accounting for 28% followed by diabetes mellitus 20% and other cardiac issues 15%.

Conclusion: Higher incidence of hypertension and diabetes were found as medical comorbidities. Other comorbidities found were cardiac issues, gastro intestinal issues and tuberculosis.

Key Words: Dental extraction, Diabetes mellitus; Hypertension, Ischemic heart disease, Medical records

Introduction

In present medical era the presence of comorbid is associated with worse health outcomes, more complex clinical management, and increased health care costs. One single definition and related meaning of the term "comorbid" is not well conceptualized. Many alternate terms such as multimorbidity, morbidity burden, and patient complexity are frequently used¹ Health care increasingly needs to address the management of individuals with multiple coexisting diseases, which are now the norms rather the exception. Co-morbidities and other health status measures are theorized to play a key role in determining health care utilization. Comorbidity was defined by Feinstein as "any distinct clinical entity that has co-existed or that may occur during the clinical course of a patient who has the index disease under study."¹ Comorbidity is the occurrence of supplementary illnesses (or diseases) along with a primary illness or disorder; or their effects. The supplementary of illness could be a behavioral or mental problem.²

Patients visiting dental care facilities may present with different comorbidities, which sometimes may be unknown to them or they may be on a complex range of medications for their medical conditions. The goal of dental treatment is to deliver safe and effective treatment without causing any medical emergency. Consultation with the medical consultant may be needed according to the nature of the patient's comorbidity or medical problem. Dental treatment may sometimes be modified accordingly. An accurate medical history helps the clinician to decide whether any kind of medical or dental treatment will be safe for a particular patient. Medical history plays a key role in the safe management of patients in general and specifically in dental office.³

Historically, the dentist has been trained to function in a solo practice treating the reasonably healthy patients. The concept of targeting the healthy affluent patient is changing and emphasis increasing in dentistry education to treat medically compromised patients safely and effectively.⁴

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Literature shows the prevalence of medical comorbid up to 64.2% alone or in combination. Dhanuthai⁵ reported 12.2% prevalence of comorbid in dental patients whereas 28.2% by Smeets⁶ and 73.3% by Maryam and colleagues.⁶ In oral and maxillofacial surgery patients, cardiovascular diseases were found to be the most prevalent medically compromised conditions (57.87%) followed by endocrine disorders (35-73%), and many other systemic diseases.^{7,8} The occurrence of medical emergencies are rare in dental practices, however can occur anytime during or as a consequence of a dental procedure and may be fatal sometime.^{9,10}

The health status of a country’s population is also relevant. Pakistan is ranked 134th out of 174 countries by Human development index of the United Nations in respect to health and literacy rate.¹¹ There are very few publications from Pakistan on such database that represents the frequency of comorbid in patients visiting dental care facilities.

With this view and for establishing a database of various systemic diseases in dental patients, a study was planned and conducted in oral & maxillofacial surgery (OMFS) department over the period of one year at Islamabad Dental Hospital (IDH), Islamabad. This study will be helpful in equipping the dental offices accordingly for medical emergency. Future dentists can be trained accordingly.

Materials and Methods

A one-year survey was conducted at the OMFS department at IDH, Islamabad. All patients regardless of age and gender were included in the study. Histories were recorded on a predesigned comprehensive history form by the attending doctor and students. Detail history of the patients including chief complaints, medical and dental history was documented. Different medical problems revealed in history including hypertension, diabetes mellitus, hepatitis, tuberculosis (TB), anemia, gastrointestinal disorders, cardiac disorders, renal disorders and blood dyscrasias were documented. Incomplete history forms and patients treated under general anesthesia were excluded from the study. Data were recorded on Microsoft Excel Spreadsheet and descriptive statistical analyses were done.

Results

A total of 12960 patients visited the OMFS department in a year (October 2013 to September 2014). Patients afflicted with comorbidities were 6,095 (47%) Figure 1. Slight difference was observed regarding gender distribution, with a ratio of 1.04:1 (Figure 2).

Patients presenting with single comorbid disease were 83.2% and having more than one were 16.8% (Table 2).

Hypertension was the most commonly presenting comorbid accounting for 28% followed by diabetes mellitus 20% and other cardiac issues 15%. Frequency of other comorbid conditions is shown in Figure 3.

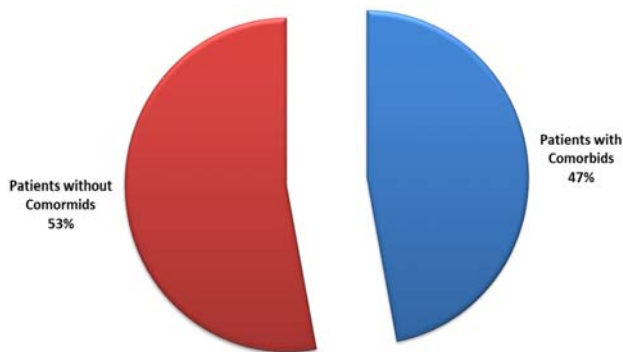


Figure 1: Patients reported with and without comorbidities

Majority of patients were in age bracket 41-50 years followed by 51-60 years (table 1).

Age Group	Male (n)	Female (n)	Total (n)	Percentage
1-10 Years	47	35	82	1.4
11-20 Years	193	234	427	7
21-30 Years	501	452	953	15.7
31-40 Years	586	641	1227	20.1
41-50 Years	793	730	1523	25
51-60 Years	663	677	1340	22
61-70 Years	93	272	365	6
70 & Above Years	110	68	178	3
Total	2986	3109	6095	100

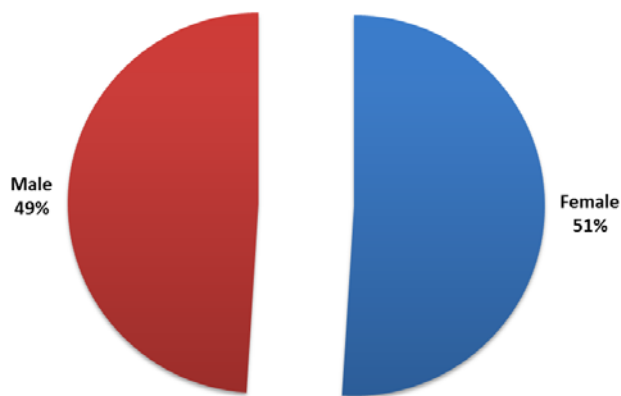


Figure 2: Gender distribution of patients with comorbidities

Comorbidities	Number	Percentage
Single	5059	83.2
Double	840	13.6
Multiple (More than Two)	196	3.2
Total	6095	100

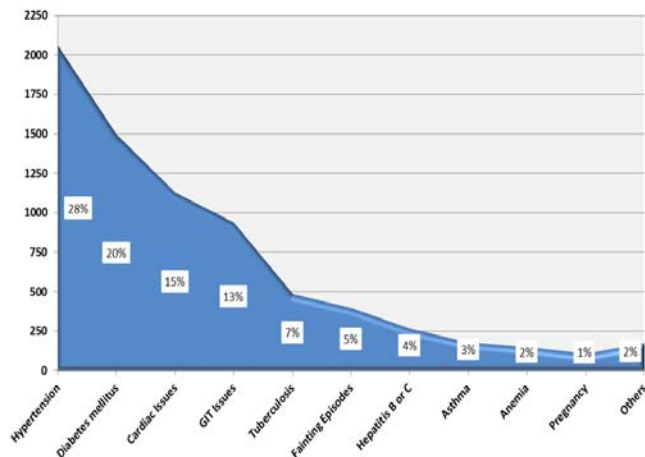


Figure 3: Comorbids frequency and percentage

Discussion

A thorough medical history is imperative to identify patients suffering from medical and dental problems and to ensure safety by the appropriate precautionary measures. Dental treatment is always safe for patient and doctor if it is done under the umbrella of extensive knowledge of associated medical illness.¹² Patient's medical problems are of paramount importance for providing effective and safe dental treatment. If patient is suffering from any medical illness then during any dental treatment, modification in treatment plane may be required. To elicit the patient's medical history, two different methods were used traditionally in dental practice. One is to take interviews and the other is patient self-reporting.¹³ History was taken in this study verbally by mixing the both methods. Over reporting or underreporting were possible. Though self-reporting has been considered reliable in many medical and dental literatures but it can be incomplete or inaccurate. Since these patients have a greater risk of developing surgical complications, the clinician must be able to recognize and treat such cases as safely as possible.

The prevalence of comorbidities increases with age. Majority of patients presenting with some medical problems were in 41-50 age bracket which is consistent with other studies.^{14,15} Most of the bulk patients fall in this age group of 21-60 years. Extremes of ages were usually not presented in oral surgery department. Gender distribution was similar to previous studies.¹⁶ This may be suggestive of the fact that males were busy in their day time jobs and females were free in the morning.

Hypertension had become one of the most common diseases affecting people worldwide. About 50 million people in the United States have hypertension.¹⁷ It is one of the most important risk factor for cardiovascular diseases and stroke; the leading cause of death today. In Pakistan one out of every three individuals over the age of 45 is hypertensive as revealed by national health surveys.¹⁸ The results of our study are comparable to other studies.^{17,19} Hypertension is followed by diabetes mellitus (20%). Escalation in rates of

diabetes especially type 2 in Pakistan is posing threats to population's quality of life as well as economy due to very high rates of complications.²⁰ Uncontrolled diabetes has been reported to increase incidence of caries, periodontal problems and delayed wound healing in dental surgical procedures.²¹ Kanwal et al¹⁶ reported 20% diabetes in her study. Guidelines should be followed to provide dental care to operate patients suffering from diabetes.

Patient general medical conditions require some modifications in dental treatments and a dentist should be able to do that. All routine dental treatment should be postponed in initial six months in patients having myocardial infarction.²² Likely patients suffering from renal or hepatic disorders need very careful medicine prescription if needed. Prescribing medication to patients who are already on multiple medications is a challenging job due to drug interaction.²³ The suspected cases of hepatitis B and C are 12 million in Pakistan and rate of infection is high in such medical conditions.²⁴ Tuberculosis (TB) is considered national disease with increasing incidence in Pakistan.²⁵ All patients reporting with Tuberculosis to our unit were disease free (no active TB). Special precautions were taken during dental treatment regarding cross infection control in patients suffering from Hepatitis B, C and TB. Cross infection is of more importance than drug interactions. Anxiety reduction protocol is mandatory and alternate means can also be offered for anesthesia i.e. sedation or general anesthesia to patients reported (5%) to had suffered from vasovagal syncope during previous dental treatment. It has been previously reported that incidence of syncope increases with fear and anxiety created by dental treatment, especially during local anesthesia administration.²⁶

The reliance on self-reporting of medical illness is a limiting factor in this study. The issue of comorbidities becomes important when patient health care and safety is the main concern. Dental education in undergraduate needs modification to train the future dental health provider as more medically oriented. Understanding the relationship of oral and systemic diseases and its medications will help the dental health provider to manage the dental patients effectively and safely. Life threatening medical emergencies can also be avoided or resolved effectively during dental treatment. Future research areas can be explored on the basis of this study.

Conclusion

There is higher prevalence of medical comorbids in patients visiting department for dental treatment. The prevalence also increases with age. Hypertension and diabetes were reported higher than other comorbids.

Conflict of Interest

This study has no conflict of interest to declare by any author.

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