Original Article

Operative Dentistry in Diabetic & Hypertensive

Association of Diabetes and Hypertension with Presenting Complaints Among Patients of Operative Dentistry

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ABSTRACT

Objectives: This study was conducted to ascertain the role of diabetes and hypertension with presenting complaints among patients of operative dentistry as there is limited data available on this issue from Pakistan.

Study Design: Cross sectional study

Place and Duration of Study: This study was conducted at the Department of Operative Dentristry, Nishtar Institute of Dentistry, Multan from 01-08-2016 to 01-02-2017.

Materials and Methods: A total of 200 study cases presenting with different complaints were recruited in our study using non – probability convenient sampling technique. Data was entered analyzed by SPSS – 20.

Results: A total of 200 study cases were taken in this study, of which 89 (44.5%) were male patients while 111(55.5%) were female patients. Mean age of our study cases was 38.58 ± 10.92 years (with minimum age of our study cases was 20 years while maximum age was 73 years). Among these 200 study cases, 71 (35.5%) were from rural areas while 129 (64.5%) were from urban areas, 62 (31%) were poor and 133 (66.5%) were from middle income families and only 2.5 % were rich. Diabetes was noted in 48 (24%) and hypertension was present in 70 (35 %). Pain in upper and lower posterior was noted in 101 (50.5%), sensitivity and food lodgment in 36 (18 %), post filling complaints in 21 (10.5%), aesthetic problems in 13 (6.5%) , sensitivity in upper and lower anterior was noted in 8 (4%) and 21 (10.5%) presented with other miscellaneous complaints.

Conclusion: Very high frequencies of hypertension and diabetes were noted in our study while pain in upper and lower posterior was the major presenting complaints followed by sensitivity. These presenting complaints were significantly associated with urban residential status however not associated with diabetes and hypertension.

Key Words: Diabetes, hypertension, operative dentistry

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INTRODUCTION

Diabetes mellitus which affects patients of all age groups is a chronic illness and is regarded as one of the major causes of mortality, disability, poor quality of life and increased morbidity all over the world particularly in developing countries [1]. It is a growing public health concern all over the world representing common metabolic diseases. In literature, different macrovascular as well as microvascular complications have been reported among patients with diabetes[2]. Diabetes mellitus is characterized by different metabolic disorders which are defined by increased blood glucose levels which may be a results of total or relatively decreased insulin secretions and may also be due to insulin resistance or both. The metabolic disorders may involve carbohydrates, proteins and fat metabolism in our bodies. Diabetes mellitus can affect all age groups, but it is more commonly noted in adults[3]. The World Health Organization (WHO) recently described diabetes to be a pandemic.[2, 4] The prevalence of diabetes in different population subsets have increased exponentially over the last few decades and it is expected to increase triple in the next decade and it is also regarded as one the leading causes of death and morbidity due to its underlying microvascular and macrovascular complications. However there is scarcity of data regarding oral complications associated with diabetes and hypertension [5, 6]. Different inflammatory illnesses and soft tissue diseases in our oral cavities are reported to be related with diabetes mellitus [7,8]; but little is known about such complications and there is a dire need to ascertain current magnitude of the problem [9, 10]. Periodontal diseases are often categorized as the sixth most common complication of diabetes mellitus after most commonly reported co-morbidities and complications [11]. Periodontal diseases are described as a more prevalent oral complication of diabetes mellitus as compared with some other oral manifestations such as dry mouth and caries [12]. Diabetic patients having poor glycemic control often present with increased levels of severity of periodontitis [13].

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Early identification followed by timely management of such oral complications can help in the early diagnosis of diabetes mellitus and to achieve desired glycemic control [14,15]. Therefore, diabetic oral manifestations are needed to be identified and included in the ultimate care of diabetes in order to fight this chronic metabolic disease effectively[16].

MATERIALS AND METHODS

This cross – sectional study was done Department of Surgery, Nishtar Institute of Dentistry (NID) Multan. Non – probability convenient sampling technique was used to collect data from patients and consecutive 200 patients with different presenting complaints were recruited, after taking informed verbal consent, in this study. These patients were interviewed by a researcher and all socio-demographic information was gathered by using pre-tested and validated questionnaire. Diabetes was defined as "patients having fasting blood glucose levels more than 126 mg/dl on 2 separate occasions or those who have been taking any hypoglycemic drug therapy for more than 2 years". Hypertension was defined as "patients having blood pressure more than 140/90 mmHg twice one week apart or those who were taking anytihypertensive therapy for more than 2 years." These patients were categorized as poor if they had family income less than 20000 rupees per month, middle income in case of family income ranging from 20000 rupees to 50000 rupees and rich if they had more than 50000 rupees family income per month. All this data was analyzed with the help of SPSS – 20 and different categorical variables were tabulated for frequencies and percentages while mean and standard deviations have been calculated for numerical variables like age. Impact of confounders was controlled by uni – variate analysis by applying chi – square test at 0.05 level of significance.

RESULTS

A total of 200 study cases were taken in this study, of which 89 (44.5%) were male patients while 111(55.5%) were female patients. Mean age of our study cases was 38.58 ± 10.92 years (with minimum age of our study cases was 20 years while maximum age was 73 years). Among these 200 study cases, 71 (35.5%) were from rural areas while 129 (64.5%) were from urban areas, 62 (31%) were poor and 133 (66.5%) were from middle income families and only 2.5 % were rich. Diabetes was noted in 48 (24%) and hypertension was present in 70 (35 %). Pain in upper and lower posterior was noted in 101 (50.5%), sensitivity and food lodgment in 36 (18 %), post filling complaints in 21 (10.5%), aesthetic problems in 13 (6.5%) , sensitivity in upper and lower anterior was noted in 8 (4%) and 21 (10.5%) presented with other miscellaneous complaints (Figure – 1).

Among 89 male patients diabetes was noted in 18 (20.2%) while in females diabetes was present in 27 % patients but this difference was statistically insignificant (p = 0.318). Similarly hypertension was noted in 34.8 % male patients while 35.1% female had hypertension (p = 1.00).

Table No. 1: Cross - tabulation of diabetes with regards to presenting complaints. (n = 200)

Presenting complaints	Diabetes		P - value
	Yes (n = 48)	No (n= 152)	
Pain in upper and lower posterior (n = 101)	24	77	**0.787**
Sensitivity in upper and lower posterior (n = 36)	07	29	
Post filling complaints (n = 21)	06	15	
Aesthetic problems in upper & lower anterior (n = 13)	05	08	
Sensitivity in upper and lower anterior (n = 08)	02	06	
Others (n =21)	04	17	
Total	**200**		

Table No. 2: Cross - tabulation of hypertension with regards to presenting complaints. (n = 200)

Presenting complaints	Hypertension		P - value
	Yes (n = 70)	No (n=130)	
Pain in upper and lower posterior (n = 101)	35	66	**0.553**
Sensitivity in upper and lower posterior (n = 36)	12	24	
Post filling complaints (n = 21)	08	13	
Aesthetic problems in upper & lower anterior (n = 13)	07	06	
Sensitivity in upper and lower anterior (n = 08)	01	07	
Others (n =21)	07	14	
Total	**200**		

Table No. 3: Cross - tabulation of gender with regards to presenting complaints. (n = 200)

Presenting complaints	Gender		P - value
	Male (n = 89)	Female (n = 111)	
Pain in upper and lower posterior (n = 101)	45	56	0.813
Sensitivity in upper and lower posterior (n = 36)	14	22	
Post filling complaints (n = 21)	09	12	
Aesthetic problems in upper & lower anterior (n = 13)	05	08	
Sensitivity in upper and lower anterior (n = 08)	05	03	
Others (n =21)	11	10	
Total	**200**		

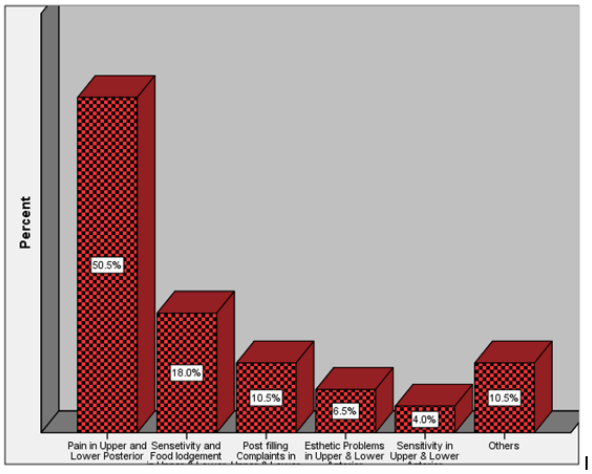

Figure No. 1: Presenting complaints among study cases.

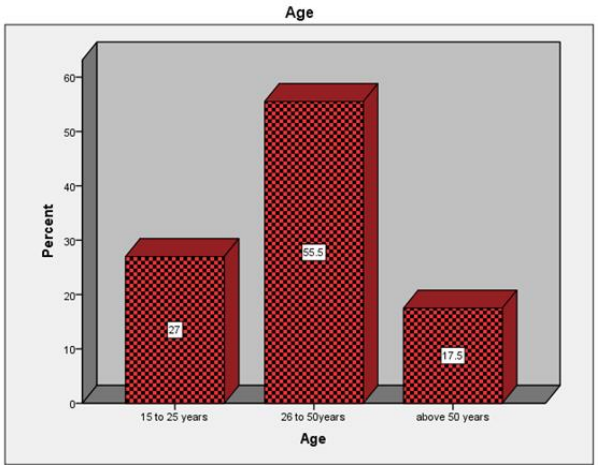

Figure No. 2: Age wise distribution of study cases.

Table No. 4: Cross - tabulation of residential status with regards to presenting complaints. (n = 200)

Presenting complaints	Residential status		P - value
	Rural (n = 71)	Urban (n = 129)	
Pain in upper and lower posterior (n = 101)	47	54	0.001
Sensitivity in upper and lower posterior (n = 36)	04	32	
Post filling complaints (n = 21)	05	16	
Aesthetic problems in upper & lower anterior (n = 13)	02	11	
Sensitivity in upper and lower anterior (n = 08)	02	06	
Others (n =21)	11	10	
Total	**200**		

DISCUSSION

In our study, 89 (44.5%) were male patients while 111(55.5%) were female patients. Similar kind of results have been reported in other studies as well showing female gender predominance. A study conducted in China by Ye et al [17] also reported female gender predominance with 59.5 % which is in compliance with that of our study results. However our findings are different from that of Siddiqui et al [18] who reported equal distribution of male and female patients. Mafla et al [19] also reported female gender predominance with 75% female patients which is in compliance with our study results. Mean age of our study cases was 38.58 ± 10.92 years (with minimum age of our study cases was 20 years while maximum age was 73 years). Ye et al [17] from china has also reported similar results. In our study 55.5% belonged to the age group of 26 to 50 years. Siddiqui et al [18] also reported that 56 % patients belonged to the same group which is same as that of our findings. Mafla et al [19] also reported similar results. Among these 200 study cases, 71 (35.5%) were from rural areas while 129 (64.5%) were from urban areas, 62 (31%) were poor and 133 (66.5%) were from middle income families and only 2.5 % were rich. Ye et al [17] from China has also reported that 62.26 % patients were from urban areas while 37.74% were from rural areas. Our study results are close to that of Reported by Ye et al [17]. Siddiqui et al [18] reported 21.9 % poor, 75.4% middle income and only 2.2 % were rich which is in compliance with our study results. Mafla et al [19] also reported middle income patients predominating which is similar to our study findings.

Pain in upper and lower posterior was noted in 101 (50.5%), sensitivity and food lodgment in 36 (18 %), post filling complaints in 21 (10.5%), aesthetic problems in 13 (6.5%), sensitivity in upper and lower anterior was noted in 8 (4%) and 21 (10.5%) presented with other miscellaneous complaints. Siddiqui et al [18] reported sensitivity and food lodgement in upper and lower posterior predominated with 40.7%, sensitivity in 28.6%, post – filling complaints in 10.4 %, aesthetic in 3.4% and 15 % presented with miscellaneous complaints. Our study results are in accordance with that of Siddiqui et al [18]. Diabetes was noted in 48 (24%) and hypertension was present in 70 (35 %). Among 89 male patients diabetes was noted in 18 (20.2%) while in females diabetes was present in 27 % patients but this difference was statistically insignificant (p = 0.318). Similarly hypertension was noted in 34.8 % male patients while 35.1% female had hypertension (p = 1.00). Siddiqui et al [18] reported hypertension in 15 % and quite low frequency of diabetes in 2 % only which are quite lower values and different from our findings.

CONCLUSION

Very high frequencies of hypertension and diabetes were noted in our study while pain in upper and lower posterior was the major presenting complaints followed by sensitivity. These presenting complaints were significantly associated with urban residential status however not associated with diabetes and hypertension.

Conflict of Interest: The study has no conflict of interest to declare by any author.

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