

ORIGINAL PAPER

Prevalence of Hypertension Among the Patients Attending the Dental Out-Patient Department

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ABSTRACT

Objective: To determine the prevalence of hypertension among the patients attending dental out-patient department.

Introduction: Many patients seeking dental treatment and attending in Dental Clinic may not be healthy and may come with physical ailments like hypertension which may restrict his desired Dental procedures. Dentist may not be able to provide the treatment to prevent any untoward accident. **Material and methods:** The present study was a hospital based cross sectional study conducted in a tertiary care centre during the period of January 2017 to March 2017. **Result:** Analysis was done upon 98 dental outdoor patients to determine the prevalence of hypertension. The overall prevalence of hypertension was found to be 52% among the study group. **Conclusion:** Before going for any dental procedure especially in elderly patients, a thorough clinical examination may lead to improved monitoring and treatment to the patients and it helps the doctor to avoid any untoward incident.

Keywords: Elderly patient, dental procedure, clinical examination, JNC-7 guidelines

INTRODUCTION

Hypertension is one of the cardiovascular diseases which has been reported as one of the common causes of death.^{1,2} Hypertension can be diagnosed by measuring a patient's blood pressure and once detected, treatment methods have to be initiated to reduce the risk of cardiovascular diseases and fatality to a reasonable level³ to avoid any untoward incident.

Many patients do not routinely measure their own blood pressure, some may remain unnoticed and some patients may have irregular control of blood pressure. Some of patient does not know that he / she is hypertensive. The prevalence of hypertension in population has been reported different geographically since it may be influenced by environmental factors.

This study became necessary because of increasing number of hypertensive patients detected at the dental clinic. The objective was to determine the prevalence of hypertensive patients among dental patients.

MATERIALS AND METHOD

The present study was a hospital based cross sectional study conducted in a tertiary care centre of Assam during the period of January 2017 to March 2017. A total of 98 patients attending the dental out-patient department during the study period and satisfying the inclusion and exclusion criteria were included in the study. Patients of both the sexes of age group 25- 65 years were included in the study. However, pregnant women, patients suffering from heart diseases and other chronic diseases were excluded from the study.

Measurements of the Blood Pressure of all the participants were taken using Sphygmomanometer and Stethoscope. Blood pressure of each patient was re-checked after 10 minutes. Study participants were categorized into two groups: First, those diagnosed with hypertension previously; i.e., those who reported being diagnosed hypertensive and/or were taking antihypertensive drugs during the visit. Second group consisted of those who were undiagnosed, but elevated blood pressure

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reading, at the initial screening (systolic >140 mm Hg and/or diastolic >90 mm Hg). They were referred to the general physicians for further diagnosis and treatment. Levels of blood pressure of the patients were classified as per the JNC 7 criteria.⁴ Data were presented in terms of percentages and statistical analyses were performed using Fisher's exact test.

RESULT AND OBSERVATION

In the present study, out of 98 patients, males (62.2%) were more than females (37.8%). Maximum of the patients (32.6%) were in the age group of 30- 39 years of age followed by 31.6% in the 40-49 years age group (**Table 1**). Mean age of the patients was 42.7 years with a standard deviation of 10.5 years.

Table 1 Age and Sex Distribution of the Study Participants

Age Group (in years)	Number of participants		Total
	Male (%)	Female (%)	
< 30	7 (7.8)	2 (2.2)	9 (9.2)
30 – 39	19 (59.4)	13 (40.6)	32 (32.6)
40 – 49	20 (64.5)	11 (35.5)	31 (31.6)
50 – 59	10 (55.6)	8 (44.4)	18 (18.4)
60 and above	5 (62.5)	3 (37.5)	8 (8.2)
Total	61 (62.2)	37 (37.8)	98 (100)

Figures in the parentheses are the percentages

Out of the 98 patients studied, 40 (40.8%) were in Stage-I hypertension and 11 (11.2%) were in stage-II hypertension as per JNC7. Male hypertensive patients (35, 57.4%) were more than the females (16, 43.2%). (**Table 2**)

Table 2 Levels of Blood Pressure of the Participants as per JNC7

Levels of Blood Pressure as per JNC7	Sex		Total
	Male	Female	
Normal	3 (37.5)	5 (62.5)	8 (8.2)
Pre-Hypertension	23 (59.0)	16 (41.0)	39 (39.8)
Stage-I Hypertension	30 (75.0)	10 (25.0)	40 (40.8)
Stage-II Hypertension	5 (45.5)	6 (54.5)	11 (11.2)
Total	61 (62.2)	37 (37.8)	98 (100.0)

Figures in the parentheses are the percentages

When the initial screening was done, 19 patients were found to have previously diagnosed as hypertensive whereas 32 previously undiagnosed patients were found as hypertensive (**Table 3**). All those 32 patients were referred to the general physician for further diagnosis and treatment. All the 32 patients were returned with a final diagnosis of hypertension. Thus, the overall prevalence of hypertension was found to be 52% (51/98) among the study group.

Table 3 Distribution of the Hypertensive Participants as per their Diagnosis status

Diagnosis Status	No. of Participants	Percentage
Previously Diagnosed	19	37.3
Previously Un-Diagnosed	32	62.7
Total	51	100.0

The age-wise prevalence of hypertension showed that maximum (33.3%) of the hypertensive patients were in the age group of 40-49 years followed by the age group of 50-59 years (29.4%). At the same time the proportion of previously undiagnosed patients were found to be increasing with the increase of age (**Table 4**).

Table 4 Age-wise Distribution of the Hypertensive Participants as per their Diagnosis status

Age Group (in years)	Diagnosis Status		Total
	Previously Diagnosed	Previously Un-Diagnosed	
< 30	3 (60.0)	2 (40.0)	5 (9.8)
30 – 39	3 (42.9)	4 (57.1)	7 (13.7)
40 – 49	7 (41.2)	10 (58.8)	17 (33.3)
50 – 59	5 (33.3)	10 (66.7)	15 (29.4)
60 and above	1 (14.3)	6 (85.7)	7 (13.7)
Total	19 (37.3)	32 (62.7)	51 (100)

Figures in the parentheses are the percentages

The different levels of blood pressure as per JNC7 classification with respect to the age of the participants were shown in **Table 5**. A significant association was observed between the different levels of blood pressure and age group of the participants ($p < 0.01$).

Table 5 Levels of Blood Pressure (JNC 7) of the Participants according to Age

Age Group (in years)	Levels of Blood Pressure as per JNC 7				Total
	Normal	Pre-Hypertension	Stage-I Hypertension	Stage-II Hypertension	
< 30	1 (11.1)	3 (33.3)	5 (55.6)	0 (0)	9
30 – 39	4 (12.5)	21 (65.6)	7 (21.9)	0 (0)	32
40 – 49	3 (9.7)	11 (35.5)	13 (41.9)	4 (12.9)	31
50 – 59	0 (0)	3 (16.7)	10 (55.6)	5 (27.8)	18
60 and above	0 (0)	1 (12.5)	5 (62.5)	2 (25.0)	8
Total	8 (8.2)	39 (39.8)	40 (40.8)	11 (11.2)	98

DISCUSSION

Hypertension is the most common problem among elderly people as well as middle aged people. The mean age of the patients of 42.7 years of this study was supported by Kearney PM.⁵ In this study males (62.2%) were more than females (37.8%), which was consistent with the findings of Sikkerimath SB.⁶ The overall prevalence of hypertension of this present study was 52% (51/98). This high prevalence of hypertension was supported by European hypertension which occurs in about 30-45% of people as of 2013⁷ and the United States which has the prevalence of 24% of adult population.^{8, 9} As of 2006 hypertension affects 76 million US adults (34% of the population) and African American adults have among the highest rates of hypertension in the world at 44%⁷ similar to this study. This high prevalence is in accordance with several Indian studies mentioned in National Cardiovascular Disease Database.¹⁰

Hypertension is more common in men (though menopause tends to decrease this difference),¹¹ which was supported by the findings of the present study. The higher proportion of hypertension in males compared to the females revealed in the present study was in accordance with the findings of Sikkerimath SB.⁶ High blood pressure affects between 16 and 37% of the population globally¹² supporting this study.

CONCLUSION

The present study showed a high proportion of hypertensive patients, both diagnosed and undiagnosed, were visiting the dental out-patient department for seeking dental treatment. Based on the evidences presented in this study, dentists should give emphasis on the detection and referral of patients suffering from high blood pressure. Therefore, before going for any dental

procedure especially in elderly patients, a through clinical examination may lead to improved monitoring and treatment to the patients.

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