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Completely Edentulous Patients Taking Antihypertensives

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Abstract

A complete denture is a removable prosthesis used when all teeth within a jaw have been lost and need to be prosthetically replaced. Hypertension is a highly prevalent cardiovascular disease worldwide. Arterial hypertension is an important health issue and associated increase in risk of suffering cardiovascular disease in the form of angina, myocardial infarction, and stroke. The aim of the study is to assess the effect of antihypertensive on completely edentulous patients. The data was collected from the dental archives of patient management software patented by Saveetha Dental College. Total sample size included 34 patients who were completely edentulous and taking antihypertensive medication. Data was tabulated and imported to SPSS for statistical analysis. Descriptive statistics and chi square test were done. The result of the study shows that the most prevalent gender taking antihypertensive medication is male, the common age group is 61-70 years old. Results of the Chi square test shows positive correlation, but it is not significant since $p=0.929$. While providing prosthodontic care to the patients with hypertension, understanding the disease, its treatment and impact on patients' ability to undergo and respond to dental care is mandatory. Within the limits of the study, the most common gender taking antihypertensive drugs were male patients within the age group of 61-70 years old who were completely edentulous.

Keywords: Age; Edentulousness; Gender; Hypertension

Introduction

The impact of oral health on the quality of life of the elderly may have increased significantly over the last decade because of the increase in the elderly population and the longevity without their own teeth [1]. Tooth loss affects oral health related measures such as functional problems in eating and speech and social discomfort when smiling [2,3]

A complete denture is a removable prosthesis used when all teeth within a jaw have been lost and need to be prosthetically replaced. It can be opposed by natural dentition, a partial or complete denture, fixed appliances or, sometimes, soft tissues [4]. The House classification system places complete denture patients into 4 groups - philosophical, exacting, hysterical, and

indifferent, depending on their psychological make-up, experiences, difficulties, and expectations [5]. The philosophical patient is well balanced and depends on the dentist for proper diagnosis, prognosis, treatment. The exacting patient is concerned about the appearance and efficiency of complete dentures, reluctant to accept the advice of the dentist [6]. The hysterical patient can also have been unsuccessful in wearing complete dentures and now demands perfection that is unobtainable. The indifferent patient is unconcerned about appearance and does not care about ability to masticate food [7,8].

Fabrication of complete denture is contraindicated in patients who undergo radiotherapy in the head and neck region [9]. Elderly and ill persons find it difficult

to endure extraction of more teeth at the same sitting and special care should be given to them. Mentally disturbed patients with limited mental ability are neither able to cooperate nor take care of their denture and hygiene [10].

Hypertension is a highly prevalent cardiovascular disease worldwide [11]. Arterial hypertension is an important health issue and associated increase in risk of suffering cardiovascular disease in the form of angina, myocardial infarction, and stroke [12]. The dental management of these hypertensive patients can cause problems in terms of oral complications, dental therapy and emergency care [13]. The risk for cardiovascular is compounded by procedural stress are epinephrine exposure from local anaesthesia or other exogenous sources. Complications usually occur in post prosthodontic therapy period [14,15]

Prosthodontics should be aware of the oral manifestations caused by adverse effects of antihypertensive drugs for successful outcome of treatment. Many antihypertensive drugs like angiotensin converting enzyme inhibitors, thiazide diuretics, loop diuretics, calcium channel blockers are associated with xerostomia [16]. Gingival hyperplasia is also of the most common clinical findings in patients with hypertension taking antihypertensive medication especially calcium channel blockers like nifedipine [17]. The antihypertensive effect of antihypertensive drugs may be antagonized by long term usage of NSAIDs [18]. The aim of the study is to evaluate the effect of antihypertensive drugs on completely edentulous patients based on their age and gender status.

Materials and methods

Records of patients who are completely edentulous and under medication for hypertension visiting Saveetha dental college and hospitals, Chennai were evaluated between June 2019-March 2020. The advantage of this study was that it was done on a population with similar ethnicity. The disadvantage was that the area of the study was not that large. This study was approved by the institutional ethics board. Two reviewers were involved in this study. Total sample size included was 34 patients who were taking antihypertensives. To minimise sampling bias, all available data was

included with a sorting process of removing double entries. Internal validity of the study was nonprobability inclusion, and the external validity was homogenisation and replication of experimentation.

Data collection was done from the dental archive of the patient management software system patented by Saveetha dental college. The data was obtained from the general examination details of all the completely edentulous patients. If medication was not being taken, they were excluded from the study. Data was verified by one external reviewer. The data was then exported to SPSS and the variables were identified.

Chi square test was performed on the data using SPSS software by IBM. Age, gender, and ethnicity were considered as independent variables. Completely edentulous patients, taking antihypertensives, type, dosage, any side effects were considered as a dependent variable. Type of analysis done was correlation analysis.

Results and discussion

The data collected from the patient management software was tabulated in SPSS and the descriptive analysis was obtained.

Out of a total of 421 patients, only 34 patients have hypertension and under medication for the same. 23 Male and 11 females within the age group of 50-80 years were present in the study analysis. Of which, 5 males in the age group of 50-60 years, 13 males in 61-70 years and 5 males in 71-80 years were present. In the female category, 3 were present in the 50-60 age group, 6 females in 61- 70 years and 2 females above 70 years were present.

The frequencies in this study are depicted in Figure 1 showing the age group involved in the study along with percentile of each group. Figure 2 shows frequency and percentile of male and female involved in the study.

Chi square test was done to assess association between gender and antihypertensive uptake in the population. Results showed positive correlation, but it is not significant since $p=0.929$. Completely edentulous male patients in the age group 61-70 years old are under medication for antihypertensives (Figure 3).

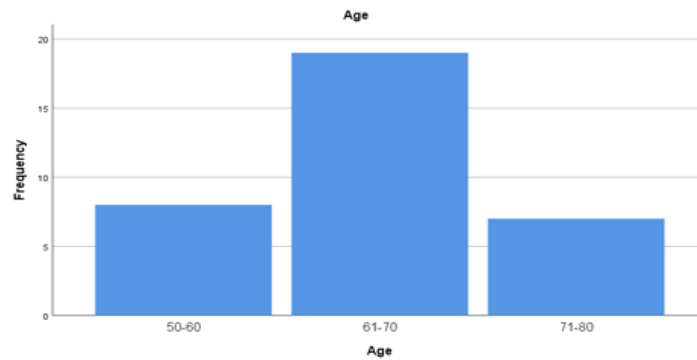


Figure 1: Bar graph depicting the age distribution involved in the study. X axis represents the age group of patients and Y axis represents the frequency of patients within the age group of the study. The most common age group present involved in the study is 61-70 years old.

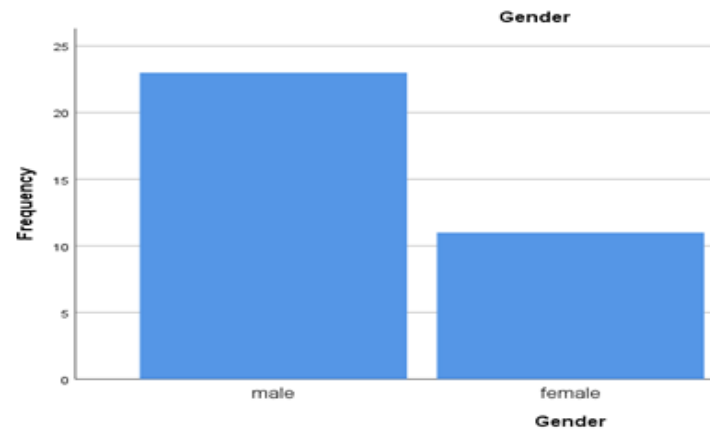


Figure 2: Bar graph depicting the gender distribution involved in the study. X axis represents the gender of patients and Y axis represents the frequency of patients within the gender distribution of the study. The most common gender present involved in the study is male patients.

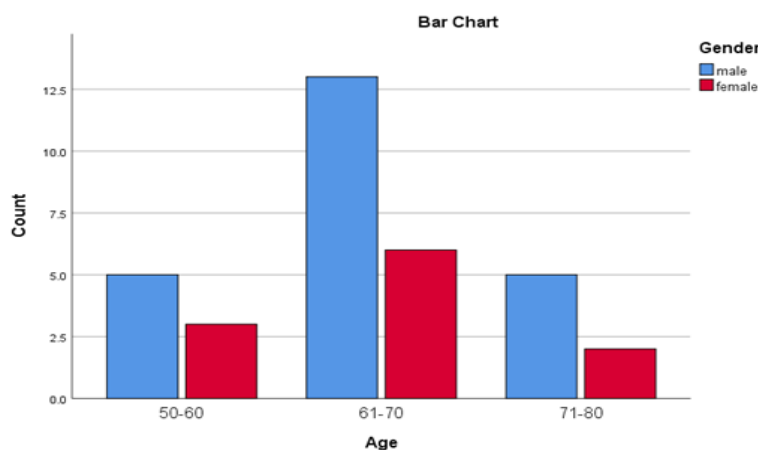


Figure 3: Bar graph depicting the association between age group and gender of anti-hypertensive patients who are completely edentulous. X axis represents the age group of patients and Y axis represents the frequency of male and female patients within the age group of the study. The graph shows positive correlation but is not statistically significant between Completely edentulous male patients in the age group of 61-70 years and antihypertensive uptake (Pearson Chi square test, $p < 0.929$).

Oral health is important to such an extent that it can hinder a person's ability to work and concentrate on his routine. Dental problems can devastate a person's physical as well as the psychological well-being [19]. Especially in the aged, oral problems are more chronic and severe as they have been always neglected in preference to other health problems. This tends to make them more irritable and to neglect dental health [20]. The general health of the elderly gives an insight into their quality of life while dental health also plays a very important role, as the dental problems interfere with the primary needs of life such as mastication of food, esthetics, speech etc. leading to irritability and loss of mental stability. So, we come across such a condition called completely edentulous state [21]. The completely edentulous condition is due to progressive loss of teeth causing esthetic and functional problems [22].

Hypertension, also called a 'silent killer,' is one of the most commonly encountered medical problems in dental practice. It is readily detectable, often asymptomatic, easily manageable, and can lead to lethal complications if left untreated. High blood pressure is a trait, as opposed to a specific disease, and represents a quantitative rather than a qualitative deviation from the norm [23].

In this study, we observed that the prevalent age group of completely edentulous patients taking antihypertensive drugs was 61-70 years old. Conversely a study conducted by Silva et al [24] stated that the common age group in that study was 50-60 years old when compared to the previous study. The reason for this difference can be due to different geographical location and the concern for health.

When considering the common gender in the present study was predominantly the male patients. This was found to be like previous studies that confirmed evidence that male was the most prevalent gender among the hypertensive population [25]. The similarity in the gender is seen since males are more commonly diagnosed with hypertension than compared to females.

Age was strongly associated with edentulous or complete loss of teeth. This was due to the cumulative effect of dental caries, periodontal diseases over the years [26]. Prosthodontic treatment approach in a hypertensive patient should be planned meticulously covering specific aspects like duration of hypertension, medication, and patient compliance about antihypertensives [27]. Fabricating a complete denture demands utmost care to avoid soft tissue abrasion.

Certain antihypertensives drugs are associated with xerostomia which in turn provide retention and stability of complete dentures [28].

Few limitations of the study design might be that the study is single centred with less sample size, similar ethnicity, and geographical location. To improvise the significance of this study, it should be done extensively with a large amount of sample size so that the results are more reliable.

Conclusion

While providing prosthodontic care to the patients with hypertension, understanding the disease, its treatment and impact on patients' ability to undergo and respond to dental care is mandatory. Within the limits of the study, the most common gender taking antihypertensive drugs are male patients within the age group of 61-70 years old who are completely edentulous.

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