Original Research Article

Study of co-morbid conditions in elderly patients with hypertension

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Abstract

Background: Cardiovascular diseases in the older people is not seen in isolation, these groups may have other associated co-morbid conditions. The prevalence of comorbidity among people with hypertension is more common than those individuals with a normal BP. The management of multiple comorbidities requires more complex strategies to achieve effective care. **Aim:** To study the prevalence of co-morbid conditions in elderly patients with hypertension. **Material and Methods:** All patients above the age of 65 years, irrespective of their hypertensive status were included in this study. All patients were classified according to blood pressure readings. All samples were venous blood gatherings in the morning after an 8 hr fast. In all patients, ECG and fundus examination was done. 2D Echo was done whenever necessary. **Results:** Of the 200 patients, all (100%) had a co-morbid illness present, of which ischemic heart disease contributed the maximum number of patients (28.5%). This was followed by diabetes mellitus seen in 50 patients (25%). Other co-morbidities included stroke in 15%, infections 14%, chronic obstructive pulmonary disease 13% and malignancy 4.5% patients. **Conclusion:** Critical clinical examination and assessment of target organ damage, presence of co-morbid conditions in hypertensive individuals helps us in making the strategy for management.
Key Words: Elderly, Hypertension, Ischemic heart disease, diabetes mellitus, co-morbidity.

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INTRODUCTION

Hypertension is a major health problem worldwide and its complications have significant socioeconomic impact. Elderly persons with untreated hypertension are at higher risk of suffering from stroke and other major cardiovascular events.[1]As the population grows older, the incidence of hypertension, continues to increase in the developed and developing societies. Cardiovascular diseases in the older people is not seen in isolation, these groups may have other associated co-morbid conditions like arthritis, dementia, diabetes mellitus, dyslipidemia, vision disorder, ear nose and throat problems, orthopaedic problems, COPD and malignancy. Patients with multiple chronic conditions have on average a higher level of morbidity, poorer physical functioning and quality of life, a greater likelihood of persistent depression, and lower levels of social well-being.[2-5] Such patients incur increased risks of adverse drug events and mortality.[6] Despite the recent emphasis to conduct research on patients with multiple co-morbidities, even basic epidemiologic information such as prevalence is not well known. Thus, the present study was undertaken to study the prevalence of co-morbid conditions in elderly patients with hypertension.

MATERIAL AND METHODS

The present study was conducted in 200 patients above 65 years of age, who were admitted under various clinical departments like Medicine, Surgery, Gynaecology and allied branches in AL-Ameen Medical College and District Hospital, Bijapur. All patients were subjected to detailed clinical examination and investigations.

Inclusion Criteria: All patients above the age of 65 years, irrespective of their hypertensive status, i.e.,

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whether known hypertensive undergoing treatment, recently detected hypertensive or non-hypertensive.

Exclusion Criteria: Patients below 65 years age group and with retroviral disease.

Methodology: The standard protocol was adapted when measuring for blood pressure (BP), blood sample collection and biochemical analysis. After of at least 5 minutes of rest and in both arms, supine as well as standing and in both lower limbsby a mercury sphygmomanometer. In patients who were bedridden, comatose, only supine blood pressure in arm and leg were taken. In patients with atrial fibrillation, a set of three readings and their mean was taken into consideration.

All patients were classified according to the VIIth US Joint National Committee on prevention, detection, evaluation and treatment of high blood pressure.[7] Hypertension was defined as an average SBP ≥140 mmHg, DBP ≥90 mmHg or the presence of antihypertensive agents. Prehypertension was defined as an average SBP 120-139 mmHg or DBP 80-89 mmHg. Diabetes mellitus (DM) was defined as having a fasting plasma glucose ≥126 mg/dL, the current use of antidiabetic agents or the use of insulin prescribed by physician due to a previous diagnosis of diabetes. Impaired fasting glucose (IFG) was determined by the range; 100 mg/dL≤ fasting plasma glucose (FPG) <126 mg/dL. Stroke, myocardial infarction (MI), angina, chronic kidney disease (CKD), and thyroid disease were defined as being a previous diagnosis given by a physician. CVD was defined as the previous diagnosis of stroke, MI, or angina. All samples were venous blood gatherings in the morning after an 8 hr fast. In all patients, ECG and fundus examination was done. 2D Echo was done whenever necessary. Routine urine examination, blood urea, serum creatinine and USG abdomen was done to look for evidence of hypertensive nephropathy. CT Brain was done if there were clinical features of cerebrovascular accident to rule out haemorrhage and infarction.

RESULTS

Out of these 200 patients, 127 (64%) were found to be hypertensive, of which 125 were male patients and 75 were female patients. Of the 127 hypertensive patients, 74 (58%) were males and 53 (42%) were females. Out of the 127 patients, 83 (62.5%) were known hypertensive and 44 (35.5%) were newly detected. Only 15 patients had the blood pressure well controlled below 120/80 mm Hg. Of the 200 patients in our study, dyslipidemia was found in 47 (23.5%) patients, of whom 28 (59.5%) were males and 19 (40.5%) were females. Isolated systolic hypertension is said to be present if the systolic blood pressure is more than 140 mm Hg and diastolic blood pressure is less than 90 mm Hg. Among 127 hypertensive patients, isolated systolic hypertension was diagnosed in 25 (19.9%) patients in whom 13 (52%) were males and 12 (48%) were females. Of the 200 patients taken up in our study, all (100%) had a co-morbid illness present, of which ischemic heart disease contributed the maximum number of patients (57 which accounted for 28.5%). This was followed by diabetes mellitus seen in 50 patients (25%). Other co-morbidities included stroke in 30 patients (15%), infections 28 (14%) patients, chronic obstructive pulmonary disease in 26 (13%) patients and malignancy was found in 9 (4.5%) patients.

Table 1: Co-morbid conditions in elderly hypertensive population

Co-Morbidity	No. of patients	Percentage
Ischemic heart disease	57	28.5%
Diabetes mellitus	50	25%
Stroke	30	15%
Infection	28	14%
COPD	26	13%
Malignancy	09	4.5%

DISCUSSION

The prevalence of comorbidity among people with hypertension is more common than those individuals with a normal BP. Co-morbidity is a common and notable status concerning the increasing complexity of care associated with it. It has been suggested that managing multiple comorbidities requires more complex strategies to achieve effective care. In our study, the incidence of hypertension was found to be 64% (127/200). In a study done by Farook *et al*,[8] the incidence of established hypertension among elderly was 61.4%. All the patients included in our study had a co-morbid illness present, of which ischemic heart disease contributed the maximum number of patients (57 which accounted for 28.5%). This was followed by diabetes mellitus seen in 50 patients (25%). Of the 57 patients detected for ischemic heart disease based on ECG, 75.4% (43 patients) had hypertension, while 24.5% (14 patients) were non hypertensive. In a study done by Dwivedi *et al*, incidence of IHD detected was 57.6%.[9] In Gupta *et al* the incidence was as low as 3%.[10] In the management of coronary artery disease among hypertensive, it was concluded by Bruce MP *et al* that the use of short acting calcium channel blockers specially in high doses was associated with increased risk of myocardial infarction[11] and the JNC VII has recommended diuretics and beta-blockers as the first line unless contraindicated.[3]Low dose diuretics has been found to be safe and at the same time effective in the prevention of stroke, myocardial infarction, congestive cardiac failure and thus the total mortality. Diabetes mellitus is a widely accepted risk factor for IHD and stroke. In our study, DM was found in total of 50

patients (25%) of which 34 (17%) patients were hypertensive and 16 (8%) were non hypertensive. Farook *et al* had the incidence of 37% in their study.[8] Dwivedi *et al* found the incidence to be 31.4%[9] while Gupta *et al* found the incidence of 13%.[10]The findings in our study are in concordance with Dwivedi *et al*. The prevalence of DM is a significant predictor of a poor long term survival following strokes. Stoke is the second leading cause of death and disability in hypertensive patients.[8]The systolic blood pressure is a better predictor of complications and borderline elevation of systolic blood pressure is associated with 42% increase in stroke and 52% increase in cardiovascular deaths. In our study, the incidence of stroke was 15% of which 13.5% were hypertensive and 5% were non hypertensive. Dwivedi *et al* found 27.3% incidence in their study,[9] Kulkarni *et al* found the incidence of 15.4%.[12]

CONCLUSION

Critical clinical examination and assessment of target organ damage, presence of co-morbid conditions in hypertensive individuals helps us in making the strategy for management. The observations warn us to screen for hypertension in elderly population at the early stage to prevent any complications.

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