Original Article

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Internal Medicine Section

A Comparative Survey of Medical Disorders in the Elderly Persons of Rural and Urban Area of North India

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ABSTRACT

Aims of the Study: To study the profile of medical disorders in the elderly persons who attended the medical outpatients department in a tertiary care hospital.

Methodology: This study was conducted in the Out-Patients Department of Medicine in the Teerthanker Mahaveer Medical College Hospital and Research Centre for a period of 6 months and a total of 380 consecutive patients who were aged 60-years and above were enrolled in it. The data from these patients was collected by taking a detailed history and by conducting a physical examination as per the pre-designed proforma. The relevant investigations were done, wherever needed.

Results: Among the 380 patients, male patients (52.63%) predominated the female patients (47.37%). A majority of our patients were from the 60-70 years age group [82.00% (n=200) among the males and 82.22% among the females]. The no. of male patients (n=120) from the rural areas was higher than the number of females and the number of female patients (n=90) from the urban areas was higher than the number of males. The prevalence of various medical disorders in this population was: chronic obstructive pulmonary disease – 24.21%, hypertension – 20.78%, pulmonary tuberculosis – 14.47%, coronary artery disease – 12.36%, diabetes mellitus – 12.63%, chest infection (non-tubercular) – 10.0%, cirrhosis of the liver - 3.42%. and various types of cancers – 2.10%.

Conclusion: The study showed a high prevalence of chronic obstructive pulmonary disease, pulmonary tuberculosis, hypertension and coronary artery disease in the elderly persons who attended a large tertiary care teaching hospital in Moradabad, UP.

Key Words: Old age, Disease pattern, Psychiatric disorder, Metabolic syndrome

INTRODUCTION

As the elderly population is growing continuously in all parts of the world, it has been estimated that by the year 2025, a majority of the elderly people worldwide, will be residing in developing countries [1]. India is amidst a demographic transition with a trend towards an ageing population [2]. In India, the ageing population which is above 60-years has been estimated to almost double-up from 7.7% in 2001 to 12.30% in 2025 and the number of elderly people will be nearly 150 million [3, 4]. Improving the living standards results in better health, which leads to a decline in the mortality rates and higher life expectancy. According to the United Nations (UN) estimates, during the period from 1995–2000 in India, the life expectancy of males stood at 62.3 years, while that of females was 62.9 years. For the period from 2020–25, the projected figures are 68.8 years for males and 72.1 years for females and for the period from 2045–50, the estimates are 73 years for males and 76.9 years for females [1]. In many parts of the India, like in many developing countries, health problems and medical care are the major concerns among a large majority of the elderly. The elderly are more vulnerable to diseases because of their impaired physiological reserves and defense mechanisms. A nationwide survey from our country which was conducted by the National Sample Survey Organisation, reported that 45% of the elderly suffered from chronic illnesses [5].

The elderly population constitutes a major chunk of the total population at any given time and it would need a bigger share of the health care facilities. Hence, it is important for any country to know the prevalence and the peculiarities of the common diseases among the elderly in their population. With this in mind, the present study was undertaken to know the pattern of various common diseases for which the elderly patients sought medical attention in a medical out-patients department in the setting of a tertiary care hospital in north India, Moradabad, India. Our medical college and hospital is situated 10 km away from Moradabad, which is a city in north India which is located 152 km away from Delhi and is surrounded by a no. of villages. So, the patients who come to our hospital comprise of both the rural as well as the urban populations. That is why we have studied the disease pattern in both the populations separately.

AIMS AND OBJECTIVES

The objectives of this study were as follows:

1. To find out the disease patterns among the study subjects,
2. To identify the difference, if any, in such disease patterns according to the sex and residence of the study subjects

MATERIALS AND METHODS

The present study was conducted in the Medicine Out-Patients Department of the Teerthanker Mahaveer Medical College Hospital and Research Centre from September'2011 to February' 2012. A total of 380 consecutive patients who were aged 60-years and above and were from either sex were enrolled and the

data from these patients was collected in the form of a detailed history and physical examination as per the pre-designed proforma. The relevant investigations were undertaken in all the patients, wherever needed. The diagnoses of various diseases were made as per the standard disease definitions which were corroborated with the relevant investigations. This study was approved by the Institutional Ethical Committee. An oral and written consent was obtained from the patients before their participation in the study.

Inclusion and Exclusion Criteria

Hypertension was diagnosed according to the JNC VII guidelines. Coronary artery disease was diagnosed on the basis of the patients' history, electrocardiogram results, stress testing, or from the coronary angiography reports which were already available with the patients. The patients were labelled as diabetic if they fulfilled the ADA criteria for the blood sugar levels [6,7]. Chronic kidney disease was diagnosed as per the National Kidney Foundation – K/DOQI guidelines when the patients had evidence of structural renal disease on ultrasonography and/or abnormalities on urinalysis or deranged kidney function tests. Cirrhosis of the liver was diagnosed as per the ultrasonography and the liver function test results [8]. Pulmonary tuberculosis and other chest infections were diagnosed on the basis of the chest skiagram findings which were corroborated with the sputum examination.

Statistics

The data which was collected was analyzed and the results were obtained as the percentage of the total elderly patients for various diseases.

RESULTS

Around 380 patients were enrolled in this 6 months study on the basis of the inclusion and exclusion criteria. The ages of the patients ranged from 60 to 90 years, with the mean age being 63.5 years. Out of the 380 elderly patients, 200 (52.63%) were males and 180 (47.36%) were females [Table/Fig-1]. The prevalence of various medical disorders in this population was: chronic obstructive pulmonary disease (COPD)– 24.21%, hypertension – 20.78%, pulmonary tuberculosis – 14.47%, coronary artery disease – 12.36%, diabetes mellitus – 12.63%, chest infection (non-tubercular) – 10.0%, stroke - 6.5%, chronic kidney disease – 4.5%, various types of cancers – 2.10% and cirrhosis of liver – 3.42% [Table/Fig-2 & 3].

COPD was found more in males from the rural areas (n=32) than in those from the urban areas (n=16). Males from the rural areas also suffered from pulmonary tuberculosis more (n=24) in comparison to the males from the urban areas (n=8). Hypertension was found more in females from the urban areas (n=22) than in males (n=18). A higher no. of males from the rural areas were diagnosed with Diabetes mellitus (n=13) than the females. But females from the urban areas were more diabetic (n=17) than the males [Table/Fig-2 & 3].

DISCUSSION

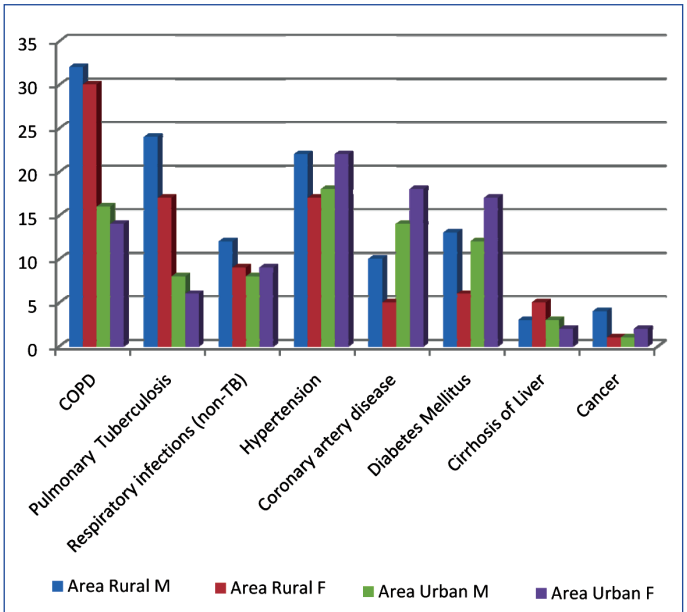
Many health problems are known to increase with age and this demographic trend may lead to an increase in the absolute number of health conditions in the population [9]. In addition,

Patient Age (years)	Men	Women	Total
60-70	164	148	312
71-80	32	30	62
81-90	4	2	6
Grand Total	200	180	380

[Table/Fig-1]: Age and sex distribution of patients

India	Rural		Urban		
Chronic Disease	M	F	M	F	%
COPD	32	30	16	14	24.21
Pulmonary Tuberculosis	24	17	8	6	14.47
Respiratory infections (non-TB)	12	9	8	9	10.0
Hypertension	22	17	18	22	20.78
Coronary artery disease	10	5	14	18	12.36
Diabetes Mellitus	13	6	12	17	12.63
Cirrhosis of Liver	3	5	3	2	3.42
Cancer	4	1	1	2	2.10
Grand Total	120	90	80	90	100

[Table/Fig-2]: Sex and residence wise distribution of diseases among the patients



[Table/Fig-3]: Disease and regional wise distribution of patients

because there is a growing body of evidence that older people are at a risk for multiple, comorbid conditions, the health-care seeking will probably also increase [9]. About 85% persons have chronic problems of one kind or the other and they require frequent visits to doctors and hospital stays, but still about 80% are able to move about on their own legs [10]. The common problems which affect the elderly include chronic bronchitis, arthritis, cataract, degenerative diseases of the heart, diabetes mellitus, and nutritional problems.

In our study, chronic obstructive pulmonary disease, hypertension, coronary artery disease, pulmonary tuberculosis, diabetes mellitus and coronary artery disease were the most common diseases for which the elderly population in Moradabad attended the medicine OPD.

Chronic obstructive pulmonary disease affected 24.21% patients who were mainly from the rural areas rather than from the urban

areas. The association of ageing and COPD is a result of the cumulative effects of smoking and environmental exposure in susceptible individuals. For this reason, a greater proportion of the elderly patients with COPD are likely to have more severe disease than the younger age groups. COPD is the only major disease with an increasing mortality, and by the year 2020, it will be the third most important cause of death worldwide [11]. We also found that the patients from the rural areas were chronic smokers; this might be the reason behind the higher number of patients of COPD from the rural areas.

Pulmonary tuberculosis was found more in patients from the rural areas (74.54%) than in those from the urban areas (25.46%). Moradabad was found to be thrust area for tuberculosis, because the rural population which lived in the villages had to come to the city to earn their livelihood [Table/Fig-2 & 3].

In various studies, the prevalence of COPD in subjects who were aged above 65-years was found to be higher among men (7–34%) than among women (6–15%) [12]. This was in accordance with the findings of our study, which also showed that males (52.17%) suffered more from COPD than the females. The variability in these figures, especially with respect to more numbers of females, is mainly because of the smoking habits of females in the rural areas.

Hypertension was the primary diagnosis in 20.78% of the elderly patients who attended the medicine OPD. The studies from India on the prevalence of hypertension showed a linear increase in the blood pressure as the age advanced, with the casual blood pressure being high in 15% of all the patients who were surveyed; in 34.5% among those who were above 55-years, in 38.5% among those who were above 65-years, and in 44% among those who were above 70-years [13]. Hypertension is a powerful, independent, and modifiable risk factor behind the development of all the major clinical manifestations of atherosclerotic cardiovascular diseases that commonly afflict the elderly, which include coronary artery disease, stroke, peripheral artery disease, heart failure, renal failure, and dementia [14]. In our study, females (55%) from the urban areas were found to be more hypertensive than the males (45%), whereas the males (56.41%) from the rural areas were more hypertensive than the females [Table/Fig-2]. Gopinath and Chadha et al., also reported the prevalence of hypertension in Delhi (criteria: >=160/90) to be 11% among males and 12% among females in the urban areas and to be 4% and 3% respectively in the rural areas [15,16].

Coronary artery disease was the primary diagnosis in 12.36% of the individuals and similar to hypertension females (56.25%) from urban areas were dominant over males in coronary artery disease. This may reflect the changing lifestyle pattern among women, mainly in the urban areas. Most of the female patients suffered from hypertension and coronary artery disease and when they were asked about the physical work that they did, most of them said that they were housewives who had maids in their houses. So, their physical activity was minimal and this might have been the reason behind the higher numbers of female patients who had Diabetes mellitus (58.62%), hypertension (55%), and coronary artery diseases (56.25%) [Table/Fig-2 & 3]. But this picture was reversed in the rural areas, where the females were more active and they had more physical activity as compared to the females from the urban areas.

Diabetes mellitus was the reason for consulting a physician among 12.63% of the elderly who attended the medicine OPD. In India, the prevalence of diabetes in the elderly has been variably reported to be from 27.1% as per a study which was conducted in Chandigarh in north India to 12.1% as per a study which was conducted in south India [17,18]. As the average life expectancy has increased in India, many of the older diabetic patients can be expected to live a decade or more after their diagnosis and so clinicians must carefully weigh the potential risks and benefits of the available interventions for reducing the excess morbidity and mortality which are associated with diabetes.

CONCLUSION

This study showed a high prevalence of chronic obstructive pulmonary disease, hypertension, coronary artery disease, pulmonary tuberculosis, diabetes mellitus and coronary artery disease in the elderly persons who attended the Medical Out-Patients Department in a tertiary care hospital in north India. The major finding in the study was that females from the urban areas suffered more from cardiovascular diseases, mainly hypertension, coronary diseases and diabetes mellitus. However, larger studies are required to elucidate the exact magnitude of this problem. Further, management protocols for these diseases in the elderly would be required, taking into consideration the physiological changes that occur with ageing per se and other co-morbidities in the elderly population.

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