

## A COMPARATIVE SURVEY OF MEDICAL DISORDERS IN THE GERIATRIC POPULATION OF RURAL AND URBAN AREA

Dr. Kishore Moolrajani<sup>1\*</sup>, Dr. Rashmi Modwal<sup>2</sup>

1, Assistant Professor, 2, Associate Professor,  
Department of Medicine, JNU Medical college and hospital, Jaipur

\*Email id of corresponding author- [modwals@hotmail.com](mailto:modwals@hotmail.com)

Received: 10/01/2016

Revised: 20/01/2016

Accepted: 25/01/2016

### ABSTRACT:

**Objective:** To compare and survey medical disorders in geriatric population who attended the medical outpatients department (OPD) in a tertiary care hospital from rural and urban area. **Material and Methods:** This study was conducted in a total of 300 consecutive patients who were aged 60-years and above attended the Out-Patients Department (OPD) of Department of Medicine in JNU Medical College Hospital and Research Centre for a period of 2 months from November 2015 to January 2016. Detailed history of these patients was taken along with physical examination as per the pre-designed proforma and relevant investigations were done, wherever needed. **Result:** Among the 300 patients, male patients 164 (54.67%) predominated the female patients 136 (45.33%). Most of the patients belong to age of 60-70 years (82.33%). The no. of male patients (n=96) from the rural areas was higher than the number of females (n=63) and number of female patients (n=73) from the urban areas was slight higher than the number of males (n=68). The study showed the prevalence of medical disorders as follows: chronic obstructive pulmonary disease (COPD) – 20%, hypertension – 17%, diabetes mellitus – 12.67%, coronary artery disease – 12.33%, pulmonary tuberculosis – 11%, , respiratory infection (non-tubercular) – 9.33%, visual impairment / cataract – 5%, arthritis – 3.67%, cirrhosis of the liver – 3.33%, various types of cancers – 2%, urinary complaints / BPH – 2%, and stroke – 1.67%. **Conclusion:** The study showed a high prevalence of COPD, hypertension, diabetes mellitus, coronary artery disease and pulmonary tuberculosis in the geriatric population indicating the chances of non-communicable disease are more but communicable disease can also occur as the immunity is waning.

**Key Words:** Geriatric population, chronic disease, metabolic syndrome,

psychological and hormonal changes, as dependence on other become increasing because

### INTRODUCTION

Old age or aging has been found as a problematic period of one's life, having physical, social,

of his reduced activities, income and consequent decline in the position of the family and society which makes his life more vulnerable. **(1, 2)**

Old age is generally a universal phenomenon, inevitable developmental change, the chronological age, and a challenge to everyone's life, irrespective of occupation, skill or learning.

**(3)**

The population of geriatric population account for 7.4% of total population in 2001 in India, which was higher for females 7.8% compared to 7.1% for males. States like Nagaland, Arunachal Pradesh, Meghalaya and Dadra & Nagar Haveli, it vary from 4% to more than 10.5% in Kerala. With the betterment in medical technologies the share as well as size of geriatric population is increasing over time. From the population size of 5.6% in 1961, it is assumed to be projected to rise to 12.4% by the year 2026. There is a rise in age specific death rate from lower to higher age as follows: twenty deaths per thousand for 60-64 years of age, 80 deaths per thousand for 75- 79 years of age and 200 deaths per thousand for population more than 85 years of age. **(4)**

Sixty four per thousand elderly persons in rural areas and 55 per thousand in urban areas suffer from one or more medical disorders by the involvement of organ system. Most common disability was loco motor disability among the aged persons as 3% of them suffer from it. Prevalence of heart diseases in urban areas

compared to rural areas was much higher among elderly population. **(4)**

Ill health or disability can not be associated with old age as such, although with the advancing age increased trends of health problems are associated such as gradual decline in visual impairments, physical strength, hearing loss, and lowered immunities leads to illness, cataract, hardening of blood vessels, respiratory and digestive disorders, heart ailments, arthritis etc. Psychological problems include low self esteem, cognitive impairment, depression, dementia, anxiety, death anxiety etc. The problem areas discussed are very much inter-dependent. Problems in one area may contribute to problems in other areas. **(1, 2)**

Because of impaired physiological reserves, defense mechanisms and physical inactivity the elderly are more vulnerable to diseases. National Sample Survey Organization, conducted a nationwide survey, reported that 45% of the elderly suffered from chronic illnesses. **(5)**

## **MATERIAL AND METHODS**

### **Research Design**

- Non Experimental design and comparative survey approach.

**Demographic variables:** Demographic variable which contains age, education, income, marital status, type of family, number of children, pre employment status, any physical illness etc were included in the study.

**Inclusion criteria:**

- Elderly persons who belong to age group of 60 years and above.
- Elderly persons who are staying in urban and rural area

**Exclusion criteria:**

- Elderly persons who are not willing to participate in the study

**Data collection**

Data were collected from the patients attending Out-Patients Department (OPD) of Department of Medicine in JNU Medical College Hospital and Research Centre for a period of 2 months from November 2015 to January 2016. Populations over 60 years of age were interviewed after informed consent. In case of any difficulty in communication with the elder, help of other family members was taken for proper information. Presence of morbidity was elicited by proper interviewing, which is finally supplemented by detailed history, clinical examination and scrutiny of relevant medical documents, if present. Respondents newly detected with any medical condition were taken for free medical care. For those requiring specialized treatment, arrangements for their follow up were made.

**Ethical issues**

Ethical clearance from the institutional ethics committee was obtained before conducting the study. Besides, informed consent was taken from each study participant also.

**RESULT:**

Around 300 patients were enrolled in this 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 64.2 years. Out of the 300 elderly patients, 164 (54.67%) were males and 136 (45.33%) were females.

**Table 1: Age and sex wise distribution of patients**

Patient Age (years)	Male	Female	Total
60-70	134	113	247 (82.33%)
71-80	25	21	46 (15.33%)
81-90	5	2	7 (2.33%)
<b>Grand Total</b>	164 (54.67%)	136 (45.33%)	300 (100%)

The prevalence of various medical disorders in this population was: chronic obstructive pulmonary disease – 20%, hypertension – 17%, diabetes mellitus – 12.67%, coronary artery disease – 12.33%, pulmonary tuberculosis – 11%, , respiratory infection (non-tubercular) – 9.33%, visual impairment / cataract – 5%, arthritis – 3.67%, cirrhosis of the liver – 3.33%, various types of cancers – 2%, urinary complaints / BPH – 2%, and stroke – 1.67%. The overall incidence of COPD, pulmonary tuberculosis, Visual impairment / cataract,

cirrhosis of liver, cancers and urinary complaints was more in rural population compared to urban, while hypertension, diabetes mellitus, coronary artery disease, non-tubercular respiratory infections, arthritis and stroke was more prevalent in urban population compared to rural.

**Table 2: Sex and area wise distribution of diseases**

Chronic Disease	Rural		Urban		%
	M	F	M	F	
COPD	22	19	10	9	20
Hypertension	15	10	10	16	17
Diabetes Mellitus	11	4	10	13	12.67
Coronary artery disease	8	3	12	14	12.33
Pulmonary Tuberculosis	15	10	4	4	11
Respiratory infections (non-TB)	8	5	7	8	9.33
Visual impairment / Cataract	6	3	4	2	5
Arthritis	2	2	4	3	3.67
Cirrhosis of Liver	2	4	3	1	3.33
Cancer	3	1	1	1	2
Urinary complaints / BPH	3	1	1	1	2
Stroke	1	1	2	1	1.67
<b>Grand Total</b>	<b>96</b>	<b>63</b>	<b>68</b>	<b>73</b>	<b>100</b>

In male population from rural area, incidence of COPD, hypertension, diabetes mellitus, non tubercular respiratory infections, pulmonary tuberculosis, Visual impairment / cataract, cancers and urinary complaints compared to

male urban population, while in female rural population incidence of COPD, pulmonary tuberculosis, visual impairment / cataract, cirrhosis of liver was higher compared to female urban population.

## DISCUSSION

In the geriatric population, medical disorders are increasing day by day with increase in age and the demographic trends also increasing for diseased condition in the population. (6) Old population have faced many problems now a days which leads to increase in various risk factors, co morbid conditions, ultimately leads to various medical disorders. Also health care facilities are increasing which leads to prevention of mortality as well as morbidity due to some chronic conditions. (6)

About 85% of elderly persons require frequent visits to doctors along with hospital stay due to morbidity and mortality produced by various medical disorders, but still about 80% are capable to do most of their work by the own. (7) The common medical disorders which incapacitate the life of geriatric population include chronic obstructive pulmonary disease, hypertension, respiratory infections, arthritis, cataract, degenerative diseases of the heart, diabetes mellitus, cancers, nutritional problems and various other medical conditions.

In our study, chronic obstructive pulmonary disease, hypertension, coronary artery disease,

pulmonary tuberculosis, and diabetes mellitus were the most common disease for the elderly population in Jaipur attended the medicine OPD at JNU Medical College Hospital and Research Centre, Jaipur.

The cumulative effects of smoking, decreased mucociliary clearance by the escalator system and environmental exposure in susceptible individuals can lead to COPD and this is finally associated with increasing age, which affects 20% of patients mainly from rural area compared to urban area. That's why greater proportion of the elderly patients with COPD is likely to have more severe disease compared to younger age groups. COPD is the only major disease with an increasing mortality, that's why it will become the third most important etiology of mortality by the year 2020. **(8)** We also found that the patients from the rural areas were chronic smokers and take the crude form of tobacco; this might be the reason behind the higher number of patients of COPD from the rural areas.

The prevalence of COPD in subjects who were aged above 60 years was found to be higher among males compared to females in various studies. **(9)** This was in accordance with the findings of our study, which showed that males (53.33%) suffered more from COPD than the females both in rural as well as urban area. The prevalence of COPD in female is more mainly because of the smoking habits of females in the rural areas.

Pulmonary tuberculosis was found more in patients from the rural areas (75.76%) than in those from the urban areas (24.24%) as more risk factors are associated such as crude form of tobacco used by them, also they have to migrate to city to earn associated with increased exposure, poor sanitation, and residence in slum area.

Various studies from India on the prevalence of hypertension showed a linear increase in the blood pressure with advancing age in 17% of patients attending medicine OPD in our study. **(10)** Hypertension is a powerful, independent, and modifiable risk factor for the development of atherosclerotic cardiovascular diseases, which ultimately leads to coronary artery disease, stroke, peripheral artery disease, heart failure, renal failure, and dementia in elderly population. **(11)** In our study, males (66.67%) from the rural areas were found to be more hypertensive than the females (33.33%), whereas the females (61.54%) from the urban areas were more hypertensive than the males (38.46%). In study done by Gopinath and Chadha et al, the prevalence of hypertension was found to be 11% among males and 12% among females in the urban areas whereas it was 4% and 3% respectively in the rural areas in Delhi was concordant to our study. **(12, 13)**

Coronary artery disease was found in 12.36% of the individuals, in urban area female preponderance (53.84%) was found compared to

males while male preponderance (72.73%) was found in male in rural area compared to females, may reflect the changing lifestyle pattern among women, mainly in the urban areas such as physical activity is reduced as all have had maids in their houses, role of television and mobile use. So, their physical activity was minimal and this might have been the reason behind the higher numbers of female patients who had Diabetes mellitus (56.52%), hypertension (61.54%), and coronary artery diseases (53.84%). In the rural areas, the situation gets reversed where the females were more active and had more physical activity as compared to the females from urban areas.

Diabetes mellitus was found in 12.63% of the elderly population attended medicine OPD. In India, the prevalence of diabetes in elderly population was reported from 12.1% in a study conducted in south India by Mohan V et al to 27.1%, a conducted in Chandigarh in north India by Puria S et al. (14, 15)

Because of the availability of modern diagnostic, treatment and curative techniques, the average life expectancy has increased in India upto a decade or more of life. Therefore clinicians must carefully watch the potential risks factors and benefits, of the available modern diagnostic, treatment and curative techniques for reducing the morbidity and mortality of various medical disorders associated in geriatric population.

## CONCLUSION

Medical problems like COPD, hypertension, arthritis, pulmonary infection, cataract, coronary artery disease and diabetes mellitus were common among geriatric population, and with progressive increase in the number of elderly population, this burden will be on increase especially in rural areas which were previously considered to be responsible for communicable disease because of hygienic conditions etc. So there is an urgent need to develop geriatric health care services by providing training to health care providers in villages, towns etc., to manage the commonly existing health problems among the elderly. The present study also highlighted on risk factors such as obesity, high cholesterol, abnormal waist-hip ratio and blood glucose level among rural and urban geriatric study group, to reduce the morbidity and mortality in rural as well as urban area.

## REFERENCE

1. Neuhaus RH, Neuhaus RH. Successful Aging. John Willey and Sons, New York (1982)
2. WHO.Geneva.Psychosocial problems of aged. Indian J Gerontology. 2007;16: 329-343.
3. Tungdim MG, Kapoor S, Kapoor AK. Morphophysiological changes amongst high attitude aged. Indian J Gerontolo 2002; 16: 329-343.

4. Situation Analysis of the Elderly in India, Central Statistics Office Ministry of Statistics & Programme Implementation, Government of India, June 2011.
5. The effect of the intensive treatment of diabetes on the development and the progression of long-term complications in insulin-dependent diabetes mellitus. The Diabetes Control and Complications Trial Research Group. *N Engl J Med* 1993; 329:977-86.
6. Gijsen R, Hoeymans N, Schellevis F, Ruwaard D, Satariano W, Van Den Bos G. The causes and the consequences of comorbidities: A review. *J Clin Epidemiol* 2001; 54:661-74.
7. Prakash C, Kalra OP. Health check ups and health care covers for the elderly. In: care of the elderly. Edited and published by PC Bhatla, New Delhi. 1986; C-29-34.
8. Murray CJ, Lopez AD. Alternative projections of mortality and disability by cause 1990 - 2020: Global Burden of Disease Study. *Lancet* 1997; 349: 1498-504.
9. Rossi A, Ganassini A, Tantucci C, et al. Aging and the respiratory system. *Aging Clin Exp Res* 1996; 8: 143-61.
10. Dalal PM. Hypertension – A report on the community survey for casual hypertension in old Bombay. Ed H Jhala, Bombay, Sir HN Hospital 1980.
11. Reaven GM. Insulin resistance, hyperinsulinaemia and hypertriglyceridaemia in the aetiology and the clinical course of hypertension. *Am J Med* 1991; 90: 7S-12S.
12. Chadha SL, Gopinath N, Shekhawat S. Urban-rural differences in the prevalence of coronary heart disease and its risk factors in Delhi. *Bull World Health Organ.* 1997; 75(1):31-38.
13. Gopinath N, Chadha SL, Jain P, Shekhawat S, Tandon R. An epidemiological study of obesity in adults in the urban population of Delhi. *J Assoc Physicians India.* 1994 Mar; 42(3):212-15.
14. Puria S, Kalia M, Mangat C, Goel N, Abhimanyu, Swami H. The profile of diabetes mellitus in the elderly. *The Internet Journal of Geriatrics and Gerontology* 2008; 4: 1937-41.
15. Mohan V, Shanthirani CS, Deepa R. Glucose intolerance in a selected south Indian population with a special reference to the family history, obesity and the lifestyle factors – the Chennai Urban Population Study. *J Assoc Physicians India* 2003; 51: 771-77.