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MORBIDITY PATTERN AMONG ELDERLY PEOPLE ADMITTED IN A TERTIARY CARE HOSPITAL OF UTTARAKHAND

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ABSTRACT

Background: The prevalence of chronic medical illnesses increase with increasing age. Elderly population is increasing at an alarming rate globally, with the greatest increase occurring in developing countries. Limited resources, diseases and increasing life expectancy are implicitly assumed to be associated deteriorating health status in old age. **Objectives:** To study the pattern of elderly patients presenting at the Tertiary care Hospital in Uttarakhand, India. **Method:** This was a cross-sectional descriptive study of 800 elderly patients who admitted to the tertiary care hospital for different ailments. Data was collected relate to their main reason of admission on a predesigned performa. Main outcome measurements were the prevalence of various morbidities and socio-demographic characteristics. **Results:** 513 (64.1%) were males and 287 (35.9%) were females with the mean ages of males and females were 67.77 ± 6.90 and 67.23±7.23 respectively. (p value <0.05). 487 (60.8%) elderly patients had more than one underlying chronic illness at the time of admission. 49.5% patients had non specific bodily complaints followed by gastrointestinal complaints. Diabetes was the most prevalent underlying chronic disease followed by hypertension. Most of the patients were admitted to the hospital because of the complications of these two underlying conditions. **Conclusion:** Epidemiological shift of diseases from communicable to non - communicable illnesses was evident. Health awareness and early screening of diseases among elderly people especially among rural folk is the need of the hour.

KEYWORDS: Old age, co-morbidity, diabetes, hypertension.

INTRODUCTION

Aging affects many facets of life, including social, economic and health matters. All these facets ultimately affect the quality of life of an individual. Ageing is an irreversible process. In the words of Seneca, "old age is an incurable disease". More recently Sir James Sterling Ross commented, "you do not heal old age, you protect it, you promote it and you extend it". Expectation of life at birth has increased in recent years. According to Population Census 2011 there are nearly 104 million elderly persons (aged 60 years or above) in India; 53 million females and 51 million males. The proportion of elderly population has increased to 8.6% in 2011. The expected life span at birth in India as on 2011 is 67.14 years. By 2020 it will be 177million. United Nation has indicated that 21% of the Indian population will be above 60 years by 2050. India has attained the label of an "Ageing nation." According to an estimate they will constitute one third of total population of the world by 2050 AD.[1,2]

Geriatric population includes the persons who are 60 years and above. They are categorized into young old (60-75yrs), old-old (76-85yrs) and very old (>85yrs).[1] Geriatric health problem is a growing concern due to increase in absolute number of geriatric people and socio-demographic changes in community. In India, the elderly people suffer from dual medical problems, i.e., both communicable as well as non-communicable diseases. This is further compounded by impairment of special sensory functions like vision and hearing. Non communicable diseases are emerging as a major cause of morbidity as well as mortality throughout the world, and India is not untouched in that. As elderly population is accumulating due to increased life expectancy so is the burden of these non communicable diseases. At the same time old age dependency ratio has increased from 10.9% in 1961 to 14.2% in 2011. The problem of elderly is compounded in a state like Uttarakhand due difficult terrains and lack of medical aids in this region. The hospital caters to people of Uttarakhand as well as to

some parts of Western Utter Pradesh. There are many community based studies on the geriatric health in India, but very few data is available on the morbidity pattern in hospitalized patients. We made an attempt at Himalayan Institute to study the morbidity profile of elderly population admitted to our institute.

Ethical clearance

Approval of the study was obtained from the Institutional Ethical committee. Informed consent was taken from each subject involved in the study. In cases where the subject was not in a condition to give consent, consent was taken from the guardian.

METHODS

Materials

Study population comprised of randomly selected 800 elderly persons (≥ 60 years of age) who were admitted in the Institute for different health complaints during January to December, 2012 in the Department of Medicine. The age of the respondents was determined by the prof presented by them at the time of admission or association with the age of the eldest child. Patients were randomly selected through computer generated numbers.

Setting

The study was conducted in the inpatient department of a tertiary care hospital in the foot hills of Himalayas. This hospital caters to the population of Uttarakhand and western Uttar Pradesh.

Design

The study was a cross sectional descriptive study which assessed the complaints with which patients were admitted and pattern of diseases in elderly people who were recruited using universal sampling. All participants were recruited within 24 hours of admission to the hospital. Trained personal was involved in collecting the data on a preformed performa. Data included their health complaints, and findings of systematic clinical examination and results of appropriate screening tests. Other departments were also consulted whenever necessary for further clinical evaluation.

Procedure

The subjects were interviewed on the preformed performa and data related to their chief complaints with which patient had come to the hospital were recorded. Information related to socio-demographic profile was also collected on the performa. Financial dependence of the elderly was decided upon their dependence on payment of medical bills. If the subject was able to pay his/her medical bill he/she was considered to be independent. Those elderly who had to depend upon their caretakers for their medical bills were considered to be partially dependent and those who were dependent on their care-takers even for their livelihood were considered as fully dependent. The physical activity was calculated by using Kartz activity of daily life scale(ADL) and Lawton Instrumental activity of daily life.[3] Diabetes was diagnosed as per ADA criteria.[4] Cardiovascular diseases or Congestive cardiac failure (CCF) was diagnosed as per Framingham criteria.[5] JNC VII criteria was used for diagnosis of hypertension.[6] Respiratory system involvement was diagnosed based on history of chronic cough - H/o cough for >1 month & TB. Any complaint related to respiratory system and not classified as chronic cough or TB was also considered. Musculoskeletal involvement was based on history and examination. Final diagnosis of the patient was made by the treating physician and the data was entered on the predesigned performa.

RESULTS

In the year 2012, out of the total patients who were admitted, elderly population i.e patients above 60 years constituted 31% of the total admission. We studied the morbidity pattern of 800 patients. Out of this 513 (64.1%) were males and 287 (35.9%) were females. Mean ages of males and females were 67.77 ± 6.90 and 67.23±7.23 respectively and the difference was statistically not significant (p value <0.05).

Table 1 shows the demographic pattern of 800 patients. Majority of population belonged to the age group of 60-69 years. The youngest elderly was 60 years old and the oldest was 90 years old. Half the patients from urban areas (138/277; 49.8%) and 81.8% from rural background (428/523) were accompanied by their caretakers. The corresponding male to female ratios were 2:1 and 1.7:1 in urban and rural populations respectively (p = 0.3628).

Tobacco and alcohol was used by 73.6% (589/800) of the study subjects; 54.8% (152/277) of the elderly from the urban areas had quit smoking. Tobacco was consumed by 70.0% males and 54.5% females; 23.0% males and 16.3% females consumed alcohol (n=103;20.6%). While 14.7% of the study group was fully independent, 36.6% were fully dependent for their activity of daily life. The ratio of non-communicable disease to communicable diseases as the cause of seeking medical attention was 6.6:1 in males and 7.1:1 in females.

There were 277 patients of urban background (34.6%) and people from rural background population comprised 65.4% (523). Male to female ratio in urban and rural population was 2:1 and 1.7:1 respectively.

Table 2 shows the health related complaints with which patients had come to the hospital. Majority of elderly patients with general body symptom. This complaint is most difficult to diagnose as well as to treat. Non-specific complaints were reported by around 50% of the patients, followed by complaints related to gastrointestinal symptoms.

Fig 1 shows the co-morbidity pattern, i.e; those underlying chronic illnesses which patient was suffering

at the time of admission. It was seen that 487 (60.8%) elderly patients had more than one underlying chronic illness at the time of admission. Table 3 Shows the system wise distribution of diseases.

Average length of stay of stay in the hospital was calculated depending on the severity of illness which was assessed based on the number of organ system failure on presentation. Patients who had no organ failure on presentation average stay was 7± 1.5 days. Average stay of patients with one organ failure was 10 ± 2.5 days. Patients with 2 or more organ failure on presentation had to stay more and their average stay was 14 ± 2.5 days.

Table 1: Shows demographic pattern of the study population.

characteristic	Male(513)		Female(287)		Total(800)	
	n	%	n	%	N	%
Age						
60-69	332	64.7	190	66.2	522	65.2
70-79	133	25.9	72	25.0	205	25.6
>80	48	9.3	25	8.7	73	9.1
Address						
Rural	329	64.1	195	67.9	523	65.3
Urban	184	35.8	93	32.4	277	34.6
Addictions						
Smoking	252	49.1	140	48.7	392	49.0
Alcohol	151	29.4	42	14.6	193	24.1
Marital status						
Married	437	85.1	231	80.4	668	83.5
Widowed	49	9.5	48	16.7	97	12.1
Single	27	5.2	8	2.7	35	4.3
Financial dependence						
Independent	107	20.8	9	3.1	116	14.5
Dependent	406	77.7	278	96.8	684	85.5
Living arrangement						
Alone	35	6.8	6	2.0	41	5.1
With spouse	247	48.1	97	33.7	344	43.0
With family	211	41.1	167	58.1	378	47.2
Others	20	3.8	17	5.9	37	4.6
Physical independence						
Fully dependent	134	26.1	157	54.7	291	36.3
Partially independent	297	57.8	96	24.0	393	49.1
Independent	82	15.9	34	11.8	116	14.5
Diseases						
Communicable	63	12.2	32	11.1	95	11.8
Non communicable	410	79.9	229	79.7	639	79.8
Both	40	7.7	26	9.0	66	8.2

Table 2: System related Health problems of patients.

Complaints	Number of patients N %
General body symptoms	396 49.5%
Gastrointestinal symptoms	285 35.6%
Respiratory problems	171 21.4%
Musculoskeletal	134 16.7%
Cardiac symptoms	87 10.9%
Hepatobiliary related	214 26.7%
Altered sensorium	122 15.3%
Urogenital	110 13.7%
fever	154 19.3%

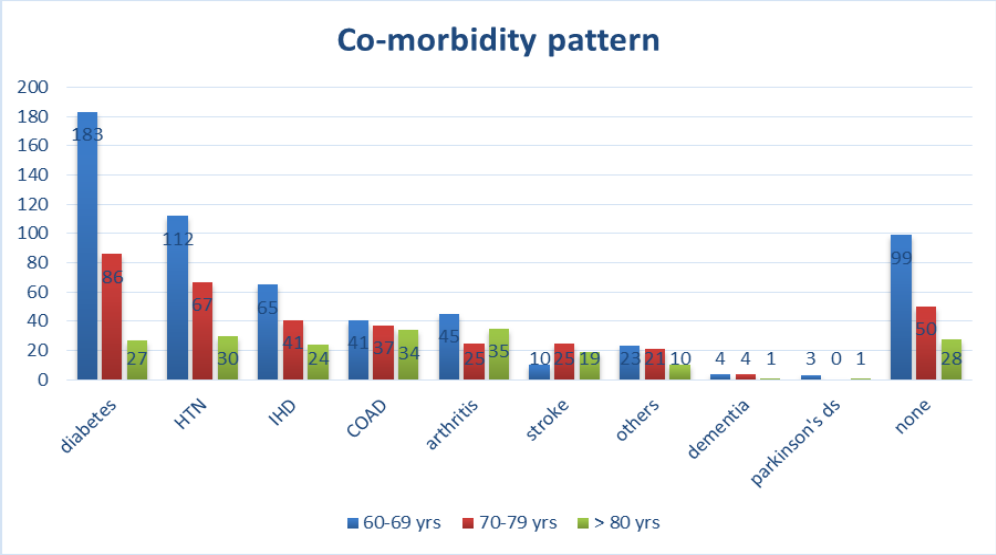

Fig. 1.

Table 3: System wise diagnosis in elderly.

Diagnosis	60-69 years (522)	70-79 years (205)	>80 years (73)	Total (800)
Cardiac	158	76	43	277
CAD	34	16	13	
HTN	124	60	30	
Respiratory	134	54	25	213
Coad	66	34	16	
Pneumonia	29	5	7	
TB	39	15	2	
GI tract	57	7	0	64
ALD	6	0	0	
CLD	48	4	0	
Pancreas	3	3	0	
Renal	67	25	8	100
ARF	14	3	2	
CRF	53	22	6	
Endocrine	217	87	27	331
DM	213	86	27	
Thyroid	4	1	0	
Nervous system	10	25	19	54
Locomotor	83	53	42	178
Malignancy	40	16	4	60

DISCUSSION

The present study highlights the poor state of health in elderly population in this region of India. According to the latest census elderly population comprise of 8.6% of the population, but their contribution to hospital admissions in our study was 31%, which reflects the poor health status of elderly population in this region. As per population census data of 2011 the sex ratio for elderly population 1033 per 1000 males (M: F:: 0.9:1). In present study poor female attendance (M:F::1.8:1) to the hospital may be due to lack of awareness regarding health issues and other gender issues ignoring health problems of women and affecting voluntary/involuntary attendance at health care facilities. In our study financial and physical dependence was more among females than males. Most of the elderly were accompanied by their caretakers, especially in rural setting suggesting a still good social support in rural India. This support is dwindling because of lack of avenues of younger population in their native places. Also the womenfolk who was initially considered as the care-taker of the house has started working outdoors for their livelihood or to increase their standard of living. Percentage of widowhood was more common in females. This may be because in India females marry men usually much older than them. Poor females attendance again emphasis on the poor health awareness among female population and biased health preferences. Elderly of our survey area 47.1% were living in joined family. Srivastava & Mishra's revealed that the majority of elderly were found living with their spouse & other member.[7] Non-communicable diseases (NCDs) like Hypertension

(HTN), Diabetes Mellitus (DM), Musculoskeletal (MSK) disorders etc and their related complications become more prevalent in the elderly. As per WHO report NCDs account for at least 32% of all deaths in India. The actual figure could be greater than this because of the fact that there is inadequate estimation because of inadequate reporting. The impact is expected to be higher in the geriatric population. In our study Health services need to be strengthened accordingly with increased emphasis on key service utilization determinants like service availability and accessibility. As such, even in hierarchical health care delivery systems, referral centres take a stake in not just the management of difficult referred cases but also the first-time diagnosed and even the nondiagnosed.[8] As the people age, the burden of underlying chronic illnesses increases. In our study 630 (78.5%) elderly patients had one or the other chronic illness. Co-morbidities (with 2 or more diseases) were common among 487 (60.8%) patients which is coherent with finding of the National Sample Survey carried out by Govt. of India in 1986-87.[9] In a community based study carried out in South India by ICMR in 1984, major causes of morbidity enumerated were Visual Impairment (88%), Locomotor Disabilities(40%), Neurological disorder(18.7%), Cardiovascular disorder(16.1%) and Skin diseases(13.3%).[10] In our hospital based study on elderly, major health problems were diabetes (37%), hypertension (26.1%), coronary artery disease (16.2%), respiratory problems (14%), problems related to locomotor system(13.1%) and stroke (6.7%).

The prevalence of Diabetes mellitus among study population was found to be 37% which was more than the finding of SRS Bhatia et al (11.9%). It was more among females than males in the age group of 60 to 69 years. However the prevalence of diabetes in later age groups among males and females was comparable. The difference in the prevalence can be explained by the fact that ours is hospital based study. The study also revealed that females had a poorer blood sugar control than males and were having more macro and microvascular compilations of diabetes at presentation.

Hypertension was found in 42% in a study carried out by SPS Bhatia et al in city area of Chandigarh.[11] R Shankara et all detected hypertension in 11.25% of elderly rural population.[12] This shows higher prevalence of hypertension in elderly persons living in urban area in comparison to rural area. In our study the prevalence of hypertension among urban (27%) patients was higher than among rural (20.1%) patients. Uncontrolled hypertension was found more among rural patients. The main reason for uncontrolled hypertension was non compliance with drug therapy and development of complications like renal involvement.

Cancers in old age are worrisome because it is not the only problem which old people have at that time. Sometimes other comorbid conditions in old man are more debilitating than cancer per se. So the management of cancer at this age becomes a big issue, because sometimes the treatment of cancer compromises the quality of life in elderly. In our study we found that cancer was detected in 5.7% of hospitalized patients and most of them were in the advanced stage of the disease.

CONCLUSION

The present clinic based study reflects the extent & pattern of geriatric morbidities in a newly formed state of north India and some part of West Uttarpradesh. The study revealed poor female attendance to the hospital. Epidemiological shift of diseases from communicable to non - communicable illnesses was evident. Even though social support in our study population was not the major issue, but financial constraints were a big problem. Lifestyle related diseases were topping the list and lack of awareness among elderly especially those from rural background was quite evident.

Early identification of lifestyle related diseases should be ensured through periodic screening and regular health check-ups. Regular health education programes & repeated counseling for monitoring of physical parameters is essential for timely interventions and treatment complince. At the same time treating physicians has to take care of polypharmacy which is quite common in this age group of patients. Behavioral changes for weight reduction through dietary modification & regular exercise and avoidance of substance abuse will add quality to geriatric health.

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