Original Article

PROFILE OF GERIATRIC PATIENTS PRESENTING TO THE EMERGENCE DEPARTMENT

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Abstract

Introduction: The increase in geriatric population as a result of healthcare advancement and improved living condition has resulted in a demographic shift in the recent years. The rising geriatric population is a concern for the emergency departments, they should be well equipped and adequately staffed with trained personnel.

Materials and methods: Cross - sectional study conducted in a tertiary care hospital in Maharashtra, India from November 2021 to October 2023.

Results: Among the 100 patients, males were 51 %. Most of the patients belonged to the age group 65 – 69 years (32%). 42% patients were triaged as red, 33 % as yellow. The most common co-morbidity seen in the geriatric cohort was hypertension (54%), diabetes mellitus (26%), ischemic heart disease (22%). Among the supplemental oxygen delivery devices, oxygen mask was used most commonly followed by invasive mechanical ventilation, non-invasive mechanical ventilation and high flow nasal cannula. Around 16% of the patients required inotropic drugs. Most common presenting complaint was breathlessness followed by fever, cough, trauma and swelling. The most frequent diagnosis was lower respiratory tract infections. Heart failure and strokes are also common. Most of them were diagnosed with multiple diseases.

Conclusions: The demographics of geriatric patients provide insight into the prevalent conditions and assist us in preparing our emergency rooms to address them.

INTRODUCTION:

The ageing of the global population and the rise of chronic illness are both significant factors in demographic transition. A person with existing chronic illness, surviving an acute illness will be prone to develop additional chronic illnesses.(1)

The global geriatric population is rapidly increasing. According to the World Health Organization (WHO), the number of people aged 60 and over is projected to reach 2 billion by 2050. This aging population is a result of advances in medicine and healthcare, as well as improvements in living conditions.(2)

According to the first longitudinal ageing study in India, two out of every three senior citizens have chronic illness. Multi-morbid conditions affect about 23% of the senior population; they are especially common in women. Cardiovascular disorders and hypertension are the most common chronic medical illnesses followed by diabetes, neuro-psychiatric issues, chronic lung diseases and bone-joint disorders. [3]

The readiness of emergency departments to manage the particular demands of elderly patients is one of the major difficulties that India's healthcare system will face as the country's geriatric population rises. Geriatric individuals may have multiple and complicated medical conditions that may need specialized care, such as rehabilitation and palliation. There is still little literature on this subject. Hence, we decided to do this study in a tertiary care facility in Maharashtra.

MATERIALS AND METHODS:

1) Study Design

Cross- sectional study

2) Study Setting

Subjects matching the inclusion criteria who presented to the emergency

department of a tertiary level hospital in Maharashtra. Patients fulfilling the inclusion criteria was identified, an informed consent was simultaneously taken to enroll the patient in the study.

3) Sample size

Considering the proportion of breathing difficulty as the most common clinical presentation among the geriatric population as 28% from the study "profile of geriatric patients presenting to the emergency department by Abhilash et al, with a confidence interval of 95% and acceptable difference of 10%, total sample size calculated was 78. Software used: WinPepi, version 11.38

4) Duration of study

The study will be conducted from November 2021 to October 2023

5) Method of recruitment

Inclusion criteria:

- All patients above the age of 65 years

Exclusion criteria:

- Patients who get discharged and leave against medical advice within 4 hours of presentation to emergency department.

6) Statistical Analysis

The data will be entered in Microsoft excel as well as in Epi 7 forms and will be analyzed using Epi Info 7. Continuous variables will be expressed as mean values and standard deviation, for normally distributed data. Median and interquartile range will be used for non-normally distributed data, while categorical variables will be expressed as frequencies and percentages. Relationships between two variables will be analyzed by using Epi Info 7. Tests of statistical significance such as paired and unpaired t tests and chi square test will be used.

7) Equipment

All the routine equipment available in the emergency department along with CT, MRI, 2D ECHO, Ultrasonography findings, laboratory investigations.

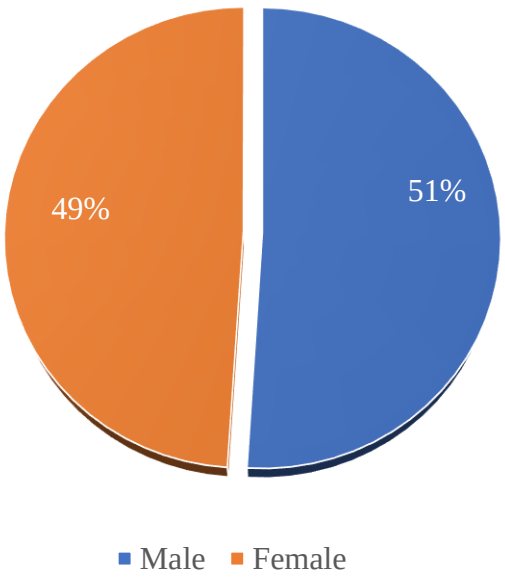
8) Study Protocol

All the adult patients matching the inclusion criteria will be enrolled in the study after obtaining consent and will be followed up till disposition from the emergency department. The study is observational and will not influence the normal treatment of the patient. The data required will be collected and entered in excel sheets and Epi 7 and analyzed. Institutional Ethical Committee (IEC) approval was obtained before the start of the study.

RESULTS:

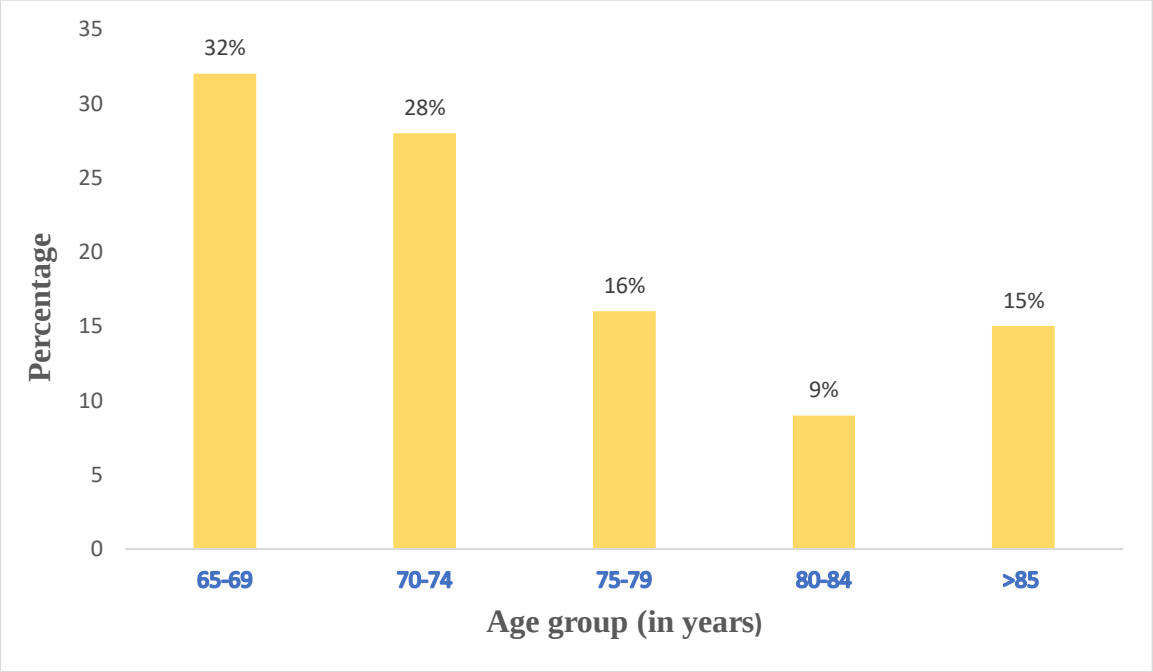
During the study period 129 geriatric patients presented to the emergency department. 29 patients had incomplete or improper documentations and hence had to be excluded from the study. The final cohort had 100 patients.

Figure 1: Pie chart showing sex distribution of patients.



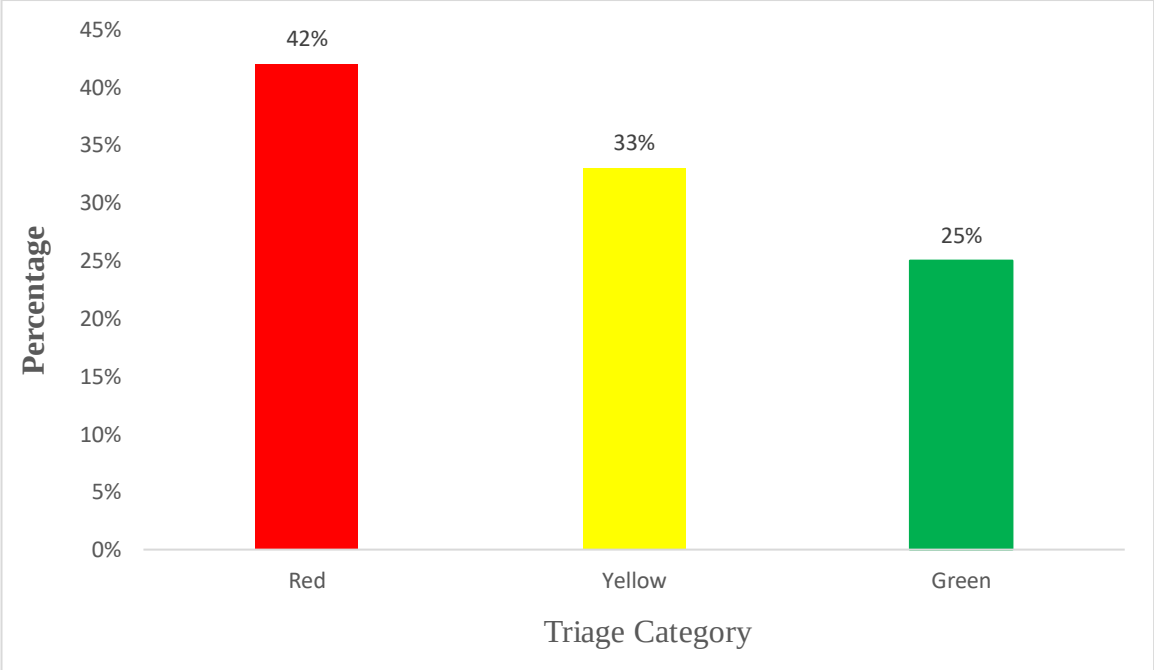
There was nearly equal distribution of males (51%) and females (49%).

Figure 2: Distribution of patients as per age group



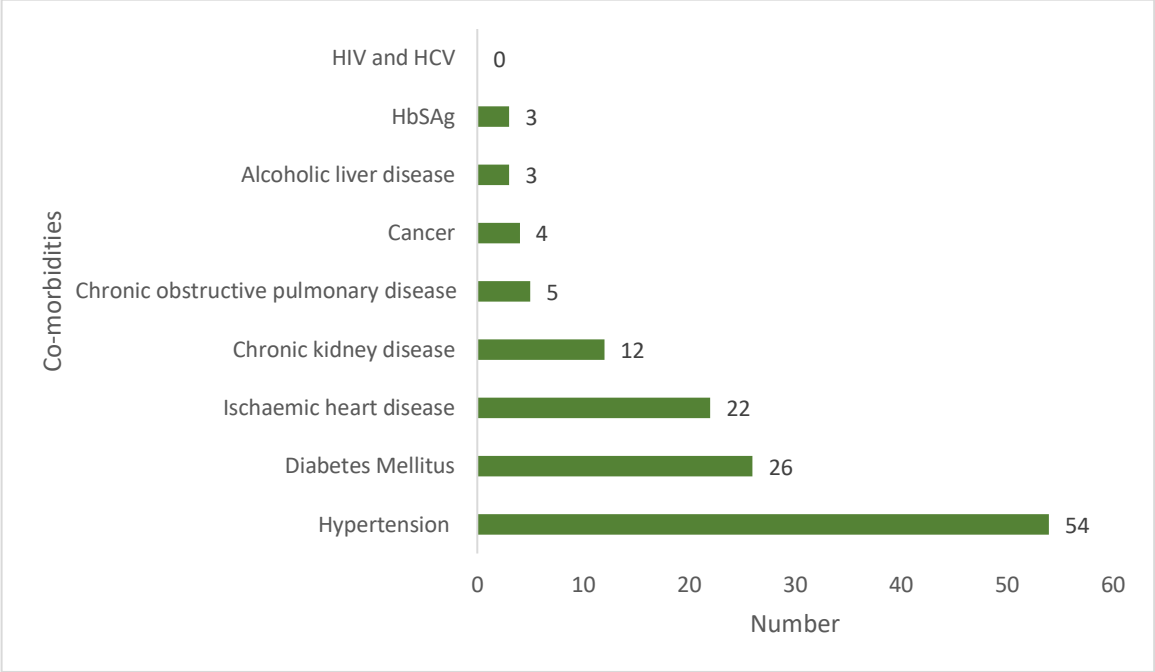
Most of our patient population belonged to 65-69 years age group

Figure 3: Distribution of patients according to triage category



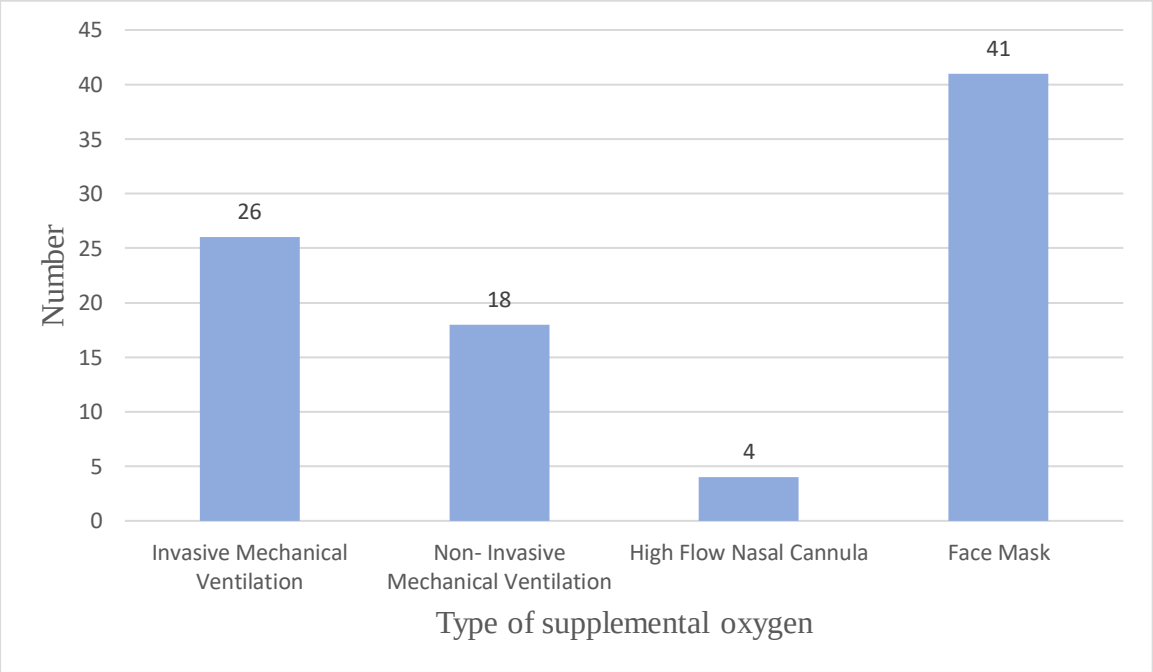
42% patients were triaged as red followed by 33% yellow and 25% green.

Figure 4: Distribution of patients based on their comorbidities



The most common co-morbidity seen in the geriatric population was hypertension seconded by diabetes mellitus. Ischemic heart disease, chronic kidney disease and chronic obstructive pulmonary disease were also seen.

Figure 5: Distribution of patients based on the type of ventilation



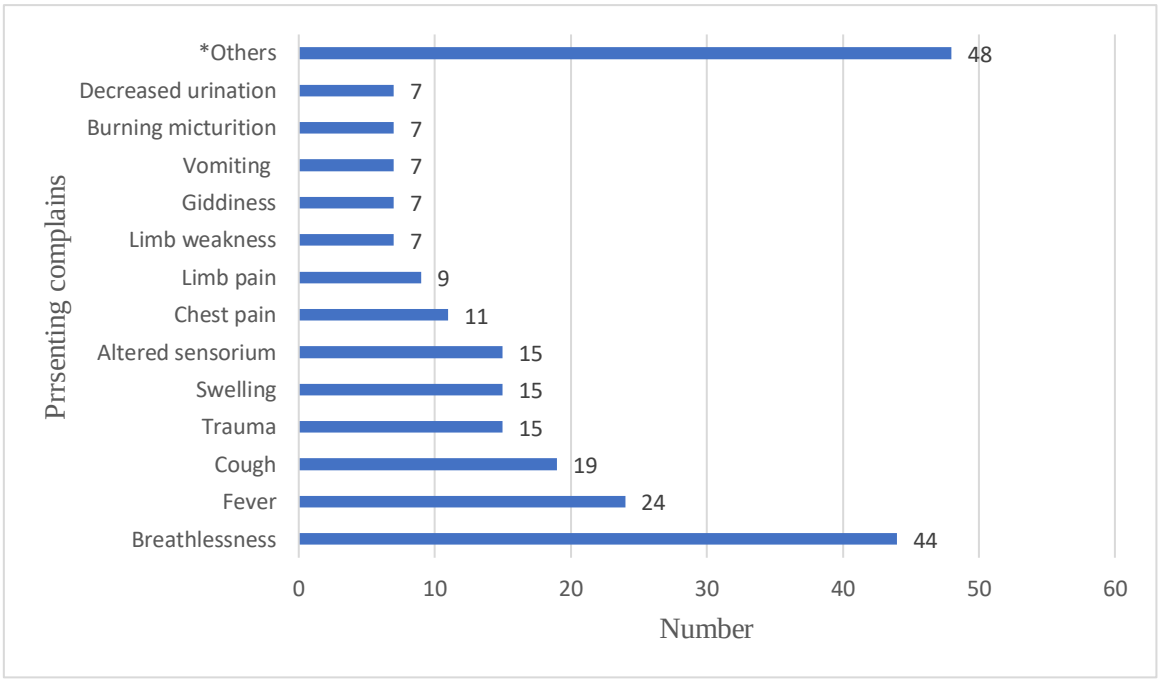
We found that among the patients who required supplemental oxygen, face mask was common, invasive and non-invasive mechanical ventilation were also used. Usage of devices depended on the patient's condition; multiple devices have been used in the same patient.

Table 1: Distribution of patients requiring inotropic support

Inotropic Support	**N (%)**	**95% Confidence Interval**
Yes	16 (16)	9.43 - 24.68
No	84 (84)	75.32 - 90.57
Total	**100 (100)**	**0 - 0**

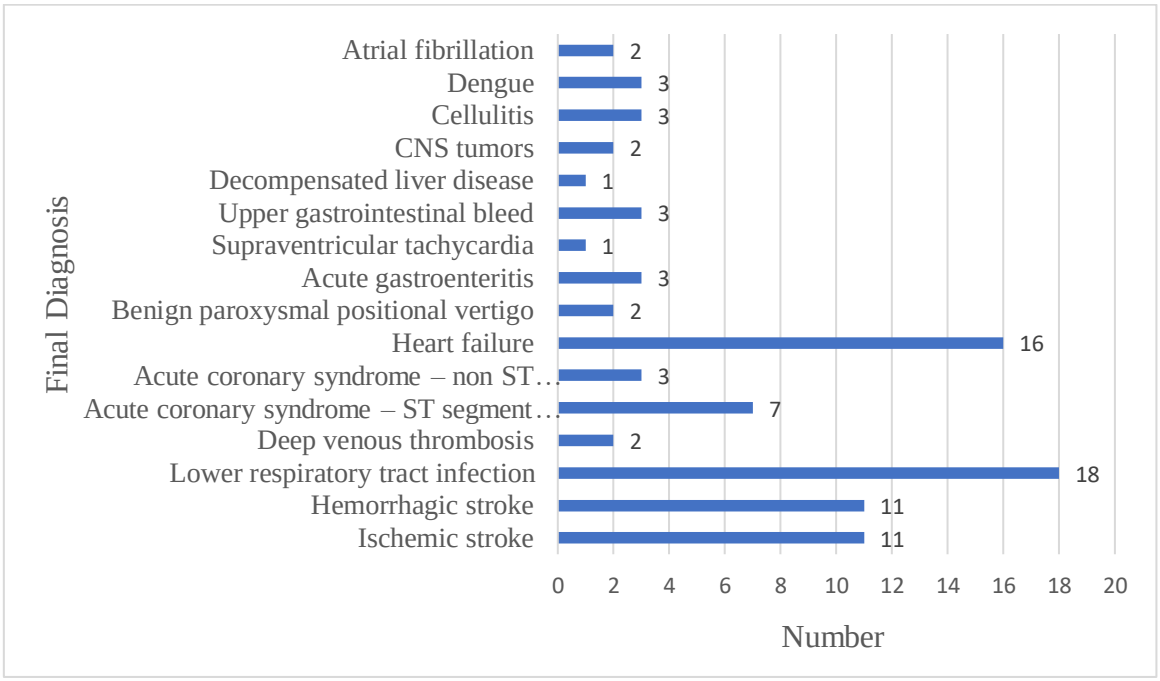
16% of our cohort required ionotropic drugs to maintain adequate blood pressure.

Figure 6: Presenting complaints of patients presenting to emergency medicine department



Breathlessness was the predominant complaint in the emergency department.

Figure 7: Final Diagnosis of patients presenting to emergency medicine department



Most of the geriatric patients had lower respiratory tract infections. Heart failure and strokes are also common among the elderly.

DISCUSSION:

Compared to younger adults, older persons frequently have more complex medical needs, which can result in longer and more expensive ED visits. Additionally, because they are more likely to have numerous chronic disorders including diabetes, heart disease, and hypertension, their care can be more complicated, making it more challenging to identify and manage their emergency condition. Older persons are also more likely to be taking numerous medications, which can interact with one another and with any new drugs provided in the ED, raising the risk of adverse drug events.

Additionally, older persons are more likely to have functional impairments, such as difficulties walking or with daily tasks, which might raise their risk of accidents and falls. Increased ED visits for fractures, head traumas, and other injuries may result from this. Additionally, they are more prone to experience acute sickness consequences, such as pneumonia or influenza, which may necessitate hospitalization and an increase in ED visits.

A similar study conducted in 2012 in a large tertiary care center in India concluded that there was a male predominance in the geriatric population visiting the emergency department. The most common complaints were breathing difficulty, fever, vomiting and chest pain. [(4)]

By providing more specialized geriatric care, such as geriatric emergency departments or geriatric emergency medicine specialists, the ED can provide better care for elderly patients.

This study provides insight into the most prevalent presenting symptoms, diagnoses, and comorbidities observed in Maharashtra's elderly population. It raises awareness of how well-equipped an emergency room should be, to manage this population strata, including intensive care units, mechanical ventilators, inotropic medications, and pumps as they present in a critical state and demand higher level of care.

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