

# Clinical Profile of Atypical Manifestations of Diseases in Elderly Patients Admitted to Critical Care Areas

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## Abstract

**Background:** As the life expectancy goes up, it brings new challenges and dimensions, especially in a developing country like ours. In India, the geriatric age group above 60 years is expected to double from 7.7% in 2001 to 12.30% in 2025. Diseases may present in an atypical manner in elderly.

**Materials and Methods:** This is a prospective, longitudinal, observational, descriptive study. "Geriatric patients" defined as aged 60 years and older, from both sexes were enrolled for this study over a period of 2-years.

**Results:** Of the 10,560 patients admitted under general internal medicine during the study period, 32.76% of cases, i.e., 3450 patients qualified to be called as "geriatric patients," of whom 710 patients, i.e., 20.58% of the geriatric admissions were in critical care areas. Nearly 55%, of the patients, stayed in the intensive care unit (ICU) setting inclusive of ICU, respiratory ICU and intensive coronary care unit (ICCU) during the study period of whom 61.8% of the subjects presented with typical symptoms and the rest presented with atypical symptoms. A higher death rate among elderly presenting with atypical manifestations was observed. 30.42% of the patients were admitted to ICCU with nearly two-thirds presenting typically and one-third atypically and stayed for a mean duration of 3.17 and 3.54 days, respectively.

**Conclusion:** Clinical presentations and outcome of diseases may be different in geriatric age group as a result of which the diagnosis and management process of critical illnesses in the elderly population may become difficult and complicated. An awareness of atypical manifestations and hence high index of suspicion is a must while managing elderly patients.

**Key words:** Atypical presentations, Elderly, Geriatric

## INTRODUCTION

Aging is a nature ordained, inevitable phenomenon. As the life expectancy goes up, it brings in new challenges and dimensions, especially in a developing country like ours. In India, the geriatric age group above 60 years is expected to double from 7.7% in 2001 to 12.30% in 2025.<sup>1</sup> Definitions of the old, elderly, aged and aging are confusing. They

could mean different in different nations and cultures. The definitions may be different for both sexes as aging may be affected by different situations during the lifetime.<sup>2</sup> A chronological definition has been attempted but has become fodder for debates. UN figures for both 60 and 65 years of age and above are available.<sup>3</sup> In view of the socio-economic milieu in India, age 60, as the threshold appears to be a more reasonable and realistic one when compared to age 65 elsewhere.<sup>4</sup> As elderly patients are a group at risk of various ailments, they are also the most common group to utilize hospital services, including critical care.

Diseases may present in atypical manner in both extremes of age. The presentations of acute myocardial infarction (AMI) could be atypical in the elderly.<sup>5</sup> The typical crushing

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retrosternal pain could be a common presentation even in the elderly; yet we come across atypical presentations (such as acute confusion, syncope, atypical chest pain, congestive heart failure, vomiting, or weakness) in clinical practice as well as just fatigue or shortness of breath alone which could be the only manifestation. Atypical presentations of infections such as lower respiratory tract infection-pneumonia and urinary tract infections (UTI), such as confusion and altered sensorium, are also encountered in clinical practice. Misdiagnosis and missed diagnosis in this age group because of atypical manifestations is a cause of concern.<sup>5</sup>

Data on critical care medical geriatrics is scanty. The current study could serve as a guide for effective planning of geriatric health care services. Over a period of 2-years, we conducted a study of patients admitted to “critical care areas (CCAs)” (consisting of the medical intensive care unit, respiratory ICU [RICU], intensive coronary care unit [ICCU], and emergency wards [EW]) under the Department of General Medicine of a teaching tertiary care referral hospital at Mysore, Karnataka state, South India. We set out with an objective of compiling a clinical profile of geriatric in-patients hospitalized in CCAs of Medicine with special reference to atypical manifestations of various critical illnesses in the elderly.

## MATERIALS AND METHODS

Institutional Ethics Committee Approval was obtained. This is a prospective, longitudinal, observational, descriptive study. “Geriatric patients” defined as aged 60 years and older,<sup>4</sup> from both sexes were enrolled for this study over a period of 2-years. All persons of >60 completed years of age, of both sexes admitted in CCAs of JSS Hospital under Internal Medicine during the study period were included. Written Informed consent was obtained in all cases. Elderly patients presenting with surgical emergencies and trauma, and patients admitted directly to non-CCAs/ low dependency units, i.e., general and special wards were excluded from the study. The hospitalization details were collected from the in-hospital records. Data were entered in Microsoft Excel, and statistical calculations were done through SPSS 16.0 (2007) for windows. The statistical method used was descriptive statistics. A total of 10,560 patients were admitted under the department of general internal medicine during the study period out of whom 32.76% of cases, i.e., 3450 patients were above 60 years of age, of whom 710 patients, i.e., 20.58% of the geriatric admissions were admitted in CCAs of the department consisting of the ICU, RICU, ICCU, and EW, under all the medical units.

## RESULTS

Of the 10,560 patients admitted under general internal medicine during the study period, 32.76% of cases, i.e., 3450 patients qualified to be called as “geriatric patients,” of whom 710 patients, i.e., 20.58% of the geriatric admissions were in CCAs (Figure 1). The majority (61.26%) of the study subjects were rural patients. Males predominated over the females as study subjects in a ratio of 1.6:1, i.e., 437 males:273 females. Maximum admissions were in 60-65 age groups with a gradual decline thereafter. Discharge rate was 57.74%, discharge against medical advice was 23.8% (Figure 2). In-hospital death was seen in 15.5%.

270 patients were current smokers, 176 consumed alcohol, 30 were tobacco quid chewers. The more the number of disease entities (diagnoses) per patient, the more was the likelihood of being in CCA. Mean duration of hospitalization of the study population was 8.3 days for

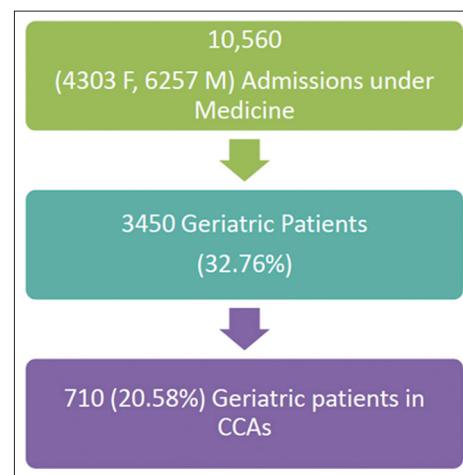


Figure 1: Method of collection of cases

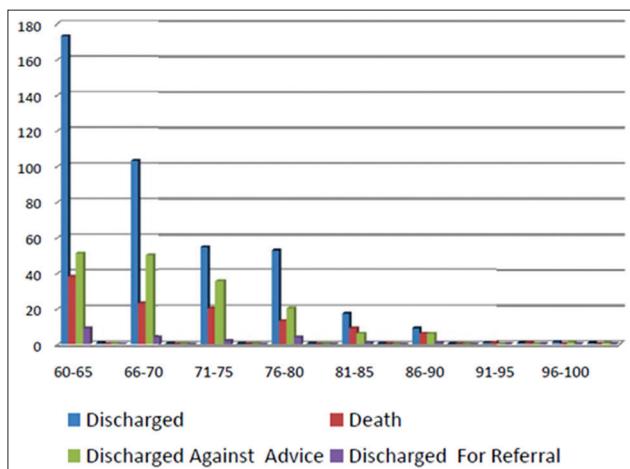


Figure 2: Age group and outcome

cases presenting with both typical and atypical symptoms. Mean duration of critical care stay inclusive of EW, ICU, ICCU, and RICU was 4.56 days for typical presentation and 4.94 days for those with atypical presentation. Nearly, 55% of the patients, stayed in the ICU setting inclusive of ICU, RICU, and ICCU during the study period of whom 61.8% of the subjects presented with typical symptoms and the rest presented with atypical symptoms. 30.42% of the patients were admitted to ICCU with nearly two-thirds presenting typically and one-third atypically and stayed for a mean duration of 3.17 and 3.54 days, respectively. The majority of the patients in the CCAs stayed in the EW, i.e., 64.5% with nearly two-thirds presenting typically and one-thirds presenting atypically and duration of stay in the EW for 3.75 days for typical and 4.12 days for atypical cases. 65.5% of the patients admitted to ICUs were put on mechanical ventilator for a time duration of 1-13 days with a mean of 3.7, standard deviation 2.3 days, 50% were hypertensives, 38.8% were diabetics, 23.23% had both hypertension (HTN) and diabetes mellitus (DM), and 16.05% had ischemic heart disease (IHD). 4.64% of the total study population had HTN, DM, and IHD. 14.5% had chronic obstructive pulmonary disease. HIV infection (newly detected on present admission) was seen in 3 individuals, a prevalence of 0.4%, which was a significant finding. Metabolic encephalopathy was seen in 12.4% of all the geriatric individuals admitted in the critical care setting. The most common cause of metabolic encephalopathy was hypoglycemic encephalopathy, followed by hyponatremic encephalopathy, sepsis-related encephalopathy, and hepatic encephalopathy in that order. The cause of encephalopathy could not be established in 15 individuals.

34.5% presented with atypical manifestations. Atypical manifestations were significant in those with acute coronary syndromes (ACS), UTI and pneumonia and not so in CVA and heart failure. Manifestations of disease can be significantly atypical in elderly, most commonly in ACS and Infections. Overall, among the elderly geriatric population, 34.5% presented with atypical manifestations not typical of the primary reason for critical care admission and this observation was statistically significant. Another observation made was a higher death rate among elderly presenting with atypical manifestations (Figure 3). A total of 98 patients out of 710, i.e., 13.8% of the study population had acute coronary syndromes. Most common among the ACS was ST-elevation myocardial infarction (STEMI), followed by non-STEMI (NSTEMI). A higher proportion of patients presented with atypical symptoms as compared to those who presented with typical symptoms of ACS in both the STEMI and

NSTEMI groups and this observation was statistically highly significant (Figure 4). In the diagnosis of ACS, of the atypical complaints with which the patients presented, breathlessness was the most common complaint followed by atypical chest pain including right sided chest pain and a burning sensation in the chest. Generalized weakness and fatigue was the third most common atypical presenting complaint. Vague chest discomfort different from chest pain was seen as the fourth common atypical symptom. Upper abdominal/epigastric pain was also complained by a few patients.

Respiratory infections in the elderly in CCAs were seen in 173 out of the 710, i.e., 37% of whom 51.5% presented with typical presentation and the rest 48.5% presented atypically. 23.1% of the patients had bronchopneumonia of which 52.5% presented typically and 47.5% presented atypically. 25.4% of the patients had aspiration pneumonia of whom 56.8% presented typically and 43.2% presented atypically. Of the atypical presenting complaints, breathlessness, and

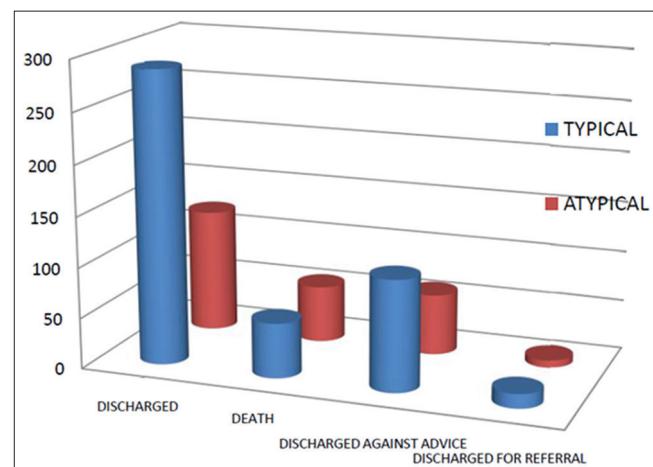


Figure 3: Outcome in typical and atypical presentation

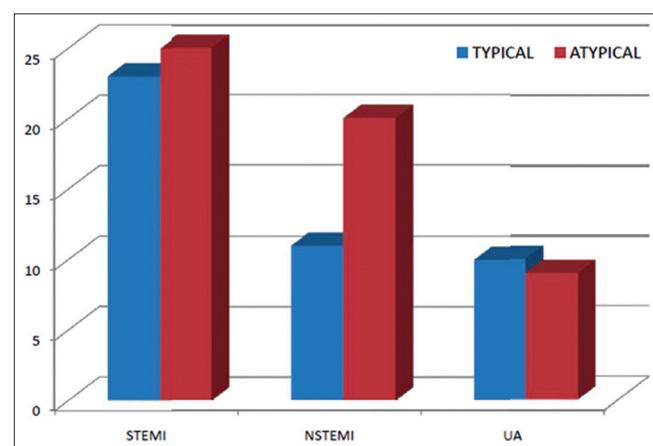


Figure 4: Presentations of acute coronary syndromes

disorientation were the more common atypical symptoms of respiratory infection.

Urinary tract infection was observed in 6.3% of the study population of whom 10.2% presented with atypical symptoms as opposed to 4.3%, i.e., those presenting with typical symptoms and this difference was statistically significant. In UTI inclusive of cystitis, urethritis, pyelonephritis and perinephric abscess, prostatitis, altered sensorium was the most common atypical symptom followed by generalized weakness and fatigue.

## DISCUSSION

In this study, overall, among the elderly geriatric patients admitted to CCAs, 34.5% presented with atypical manifestations not typical of the primary reason for critical care admission and this observation was statistically significant. Another observation made was a higher death rate among elderly presenting with atypical manifestations.

Clinical implications *vis a vis*, physiological perturbations in the elderly are worth exploring. Elderly patients may have an atypical presentation of different entity, for example, altered mental status due to underlying fluid and electrolyte disorder or infections. It is likely that the final diagnosis reported on paper for an admitted elderly patient may not reflect or explain the basic cause which brought the patient to the hospital in the first place and may not reflect the course in the hospital and eventual outcome or recovery.<sup>6</sup> Bayer *et al.* reported the varied manifestations of AMI in elderly patients.<sup>7</sup> In extreme old age (>85 years), atypical presentations may be dubbed as a rule rather than an exception and the physician must be alert in most acutely ill patients. Furthermore, community-acquired pneumonia in the geriatric age group may present in a different way. The atypical presentation and hence mis/missed diagnosis may result in a dangerous delay of antimicrobial therapy adding to the higher mortality of community-acquired pneumonia in the geriatric age group *vis a vis* younger patients.<sup>8</sup>

Thus, diseases could be deceptive with atypical presentations in the elderly and the physicians in their day-to-day practice should be on high alert and factor this in.<sup>9</sup> Silent MI in elderly, detected incidentally on electrocardiogram (ECG) is high, ranging between 38% and 60%.<sup>10,11</sup> Moreover, NSTEMI is common in the elderly population, and ECG diagnosis may be difficult to come by. Recognition of the fact that elderly patients with AMI differ in clinical presentation compared to others may guide us in decreasing

both mortality and morbidity in this vulnerable age group. Many authors have elucidated the atypical clinical presentations of AMI in the elderly.<sup>12-14</sup> Dyspnea and other nonspecific symptoms such as giddiness; syncope, and abdominal pain are common in elderly compared to others. Occurrence of nonspecific symptoms in elderly could be because of preoccupation with other non-cardiac problems, or elderly could find it difficult to remember and/or narrate the history correctly and objectively or probably due to a different pain threshold.<sup>15</sup>

### Limitations of the Study are

- The study population included only those presenting to the critical care setting who are not representative of the population at large
- Outcome of those patients who were discharged against medical advice is not known.

Further large-scale multicentric studies of a similar kind will help to throw more light on problems of critical care geriatrics.

## CONCLUSION

Clinical presentations and outcome of diseases may be different in geriatric age group as a result of which the diagnosis and management process of critical illnesses in the elderly population may become difficult and complicated. An awareness of atypical manifestations and hence high index of suspicion is a must while managing elderly patients.

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