



Common causes of geriatric medical emergencies in China

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J Geriatr Cardiol 2015; 12: 91–92. doi:10.11909/j.issn.1671-5411.2015.01.012

Keywords: China; Comorbidity; Emergency medicine; The elderly

To the Editor

One of the most significant demographic changes in our country is the increase in the elderly population. In China Mainland, the population aged 60 and older was 194 million in 2012, accounting for 14.3% of the total population. However, by 2053, it is estimated that the number of elderly will reach 487 million, representing 34.8% of the total population. Elderly patients represent an ever-increasing populace in emergency medicine who often present with atypical signs and symptoms as well as comorbidities that can complicate diagnoses and treatment.^[1] The geographic factors and the developmental status of the country can influence the spectrum of common geriatric emergencies. Thus, this study presents a retrospective analysis of common causes of geriatric emergencies involving 9,628 elderly patients from Jan. 2008 to Dec. 2013 in an emergency department in Beijing, China.

The ages of patients ranged from 60 to 103, with a mean age of 82 years old. These patients included 7,815 males and 1,813 females. The most common causes for geriatric emergency medical treatment are listed in Table 1.

In this study, the three most common causes of geriatric emergencies were respiratory disease (26.2%), cardiovascular disease (20.8%) assumed as the uppermost one, and neurological disease (10.9%), which almost consisted with a previous study.^[2] A study conducted in France reported the main reasons for emergency admissions of elderly patients in a university hospital were cardiopulmonary disease in 31.6% of cases, followed by neuropsychiatric disorders, which accounted for 28.2%. However, in a rural hospital in south-eastern Nigeria, the three most common causes of geriatric emergencies included acute malaria (33.8%), hypertensive crises syndrome (19.0%), and acute hypertensive heart failure (18.1%).^[3] These differing statistics support the belief that common causes of geriatric emergencies are generally related to geographic factors and developmental status of the country.

Table 1. Common causes of geriatric emergencies in 9,628 elderly Chinese.

Causes of emergency	n (%)
Respiratory disease	2,426 (25.2%)
Respiratory tract infection	1,087
Pneumonia	635
Respiratory failure	436
Others	268
Cardiovascular disease	2,089 (21.7%)
Acute coronary syndrome	961
Arrhythmia	605
Hypertension	334
Heart failure	125
Others	64
Neurology disease	1,126 (11.7%)
Transient ischemic attack	626
Cerebral infarction	259
Cerebral hemorrhage	145
Others	96
Digestive disease	876 (9.1%)
Acute gastroenteritis	537
Digestive tract hemorrhage	128
Constipation	92
Others	119
Trauma	818 (8.5%)
Falls	574
Others	224
Urinary disease	587 (6.1%)
Urinary tract infection	258
Urinary retention	211
Others	118
General surgery disease	512 (5.3%)
Intestinal obstruction	230
Inguinal Hernia	179
Others	103
Others	1,194 (12.4%)

At nearly 26% infection was the main reason for seeking medical treatment for the patients in this study, with the most frequent conditions being respiratory tract infection (43.7%), pneumonia (25.5%), acute gastroenteritis (21.6%), and urinary tract infection (9.2%). Elderly patients are at higher risk of infection for several reasons. Immune system function naturally declines with the passing of time. Comorbid conditions decrease a body's resistance to infection. The comorbid conditions most often seen involve diabetes, end-stage renal disease, and vascular disease. Poor nutritional status, reduced cough reflex, nursing home living, and decreased mobility are just a few of the other factors that can increase an elderly person's risk of infection.

Ischemic cardio-cerebrovascular diseases, such as acute coronary syndrome (ACS) and transient ischemic attack (TIA) were another main cause for emergency room visits in the group studied. Age is a well-known independent risk factor for cardiovascular disease (CVD), with 30% of acute myocardial infarction occurring in patients older than 75 years old. More than 60% of patients hospitalized for unstable angina are above 65 years old. Around the world, approximately 17 million people die from CVD each year, primarily from ACS and stroke (TIA is associated with a high early risk of stroke). Around 75% of these deaths occur in low- or middle-income countries, including China. In most Western countries, the mortality rates of CVD have declined in recent decades, partially due to widespread and long-term use of proven medication for the prevention of recurring CVD events, and partially due to favorable changes in underlying risk factors, such as smoking and dietary patterns. Although the acute hospital management of patients with ACS in China is generally similar to that in most Western countries, a large community-based survey of 1,737 rural and urban communities in China found that only one in three individuals with a history of CVD receive any established secondary preventive treatments.^[4]

Trauma was also a common cause (8.5%) for elderly patients to seek emergency treatment, of which 70.2% were associated with falls. A previous study reported the trauma rate in patients who were 65 years old and older was 12%, and falls accounted for the most common cause of injury at 59%.^[5] In a study of pre-hospital data of trauma patients over the age of 70 presenting to the emergency department, the majority of injuries were due to falls (60.7%), followed by motor vehicle accidents (21.5%).^[6] In addition to high mortality rates, trauma in elderly patients can result in significant morbidity, including functional decline and loss of independence. As such, multidisciplinary and aggressive approaches should be adopted for elderly patients suffering trauma which may have originated from a lack of biological

and physiological reserves, the presence of comorbidities, or multi-drug administration.

In China, the number of elderly with psychological problems (irritability, apathy, and delirium) is relatively small and the symptoms are generally combined with organic diseases, such as cerebrovascular disease, respiratory failure, renal failure, and endocrine and metabolic diseases, meaning they rarely seek emergency treatment.

In conclusion, the most common causes of emergencies in geriatric patients were respiratory disease (26.2%), cardiovascular disease (20.8%), and neurological disease (10.9%). The most frequent conditions were infection (respiratory tract infection, pneumonia, acute gastroenteritis, and urinary tract infection), ischemic cardio-cerebrovascular disease (ACS and TIA), and trauma. These results can provide some basis for the prevention of common geriatric disease. Understanding the common causes for emergency medical treatment of the elderly can help doctors in emergency departments offer better care.

Acknowledgments

The authors have no financial or any other kind of personal conflicts with this letter. This letter was supported by Chinese PLA General Hospital Clinical Research Support Fund (2012FC-TSYS-2024).

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