

# Common geriatric emergencies in a rural hospital in South-Eastern Nigeria

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## Abstract

**Background:** Geriatric population in rural Nigeria is often challenged by emergency health conditions that predispose them to higher risk of disability and mortality.

**Objective:** This study was aimed at describing the common geriatric emergencies in a rural hospital in South-Eastern Nigeria.

**Materials and Methods:** This was a descriptive hospital-based study of 216 geriatric patients who presented between June 2008 and June 2011 with emergency health conditions at St Vincent De Paul hospital, Amurie–Omanze, a rural Mission General Hospital in Imo state, South-Eastern Nigeria. The geriatric patients seen within the study period who met the selection criteria were studied. Data extracted for analysis included biodata and diagnosis made.

**Results:** A total of 216 geriatric emergencies were seen during the study period. The ages of the patients ranged from 65 years to 98 years with mean age of  $72 \pm 1.14$  years. There were 94 males and 122 females with a male to female ratio of 1: 1.3. The three most common causes of geriatric emergencies were acute malaria (33.8%), hypertensive crises syndrome (19.0%), and acute hypertensive heart failure (18.1%).

**Conclusion:** This study has shown that the three most common geriatric emergencies were medical emergencies (acute malaria, hypertensive crises syndrome, and acute hypertensive heart failure). Improving the quality of geriatric medical care will help in reduction of these emergency medical conditions. Similarly, health education of the geriatric population to embrace early health-seeking behavior, health maintenance, and promotional practices that are needed to promote longevity is invariably advocated.

**Key words:** Common emergencies, geriatric, hospital, Nigeria, rural

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## Introduction

With the ever-rising human population in developing countries such as Nigeria, there is expectedly an increase in the number of elderly citizens.<sup>[1]</sup> Similarly as the proportion of elderly age group rises, the epidemiological profiles of Nigerians will invariably reflect the diseases and health problems of this group of senior citizens.

The geriatric health, wellness, illness, and disease states are influenced by the process of ageing.<sup>[2,3]</sup> Age is

epidemiologically recognized as constitutional risk factor for some medical conditions especially noncommunicable diseases.<sup>[4]</sup> This might be due to biophysiological changes characterized by progressive decline and constriction (homeostenosis) of each organ system homeostatic reserves and ability to adapt to physical, physiological, and psychosocial challenges.<sup>[3]</sup> The geriatric patients are therefore high risk patients under emergency health

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conditions and this can pose a management challenge to the attending medical practitioner.<sup>[5]</sup>

It has been generalized that about 70% of the senior citizens in Nigerian live in the rural areas especially after retiring from active service. More so, there is concentration of emergency medical facilities and personnel in the urban areas of the country. This urban bias in the location of emergency medical services is usually strengthened by the class structure largely skewed toward meeting the emergency medical demands of the better-off sections of the population in the urban Nigeria than the needs of the poor rural Nigerians.

Studies have also shown that communicable<sup>[6]</sup> and noncommunicable diseases<sup>[7,8]</sup> have continued to plague adult Nigerians. Surprisingly, most of these diseases can be either prevented or treated with minimum input of health resources. In fact, most of the developed nations of the world have overcome many of these problems by such measures as practice of preventive and promotional medicine alongside the improvement in the standard of living resulting in increase in their life expectancy and aliveness.

The burden of geriatric emergencies in Nigeria can be influenced by the health-seeking behavior and practices of the geriatric population. Adequate health-seeking behavior and practices have been reported to improve the health status of patients attending health facilities in Nigeria.<sup>[9]</sup> However, regular health maintenance and promotion activities are limited in medical practice in Nigeria when compared with what is obtained in developed countries.<sup>[9,10]</sup> In order to provide necessary geriatric emergency health services in any community, health care providers should identify prevailing geriatric emergencies, determine their priority rather than continue to provide prototype health services.

It is against this background that the researchers were motivated to study the pattern of common geriatric emergencies in a rural secondary hospital in South-Eastern Nigeria for preliminary assessment of the emergency health needs of the geriatric patients in the study area.

## Materials and Methods

This was a descriptive hospital-based study of 216 geriatric patients who presented between June 2008 to June 2011 with emergency health conditions at St. Vincent De Paul hospital, Amurie-Omanze, a rural Mission General Hospital in Imo State, South-Eastern Nigeria. The hospital renders 24-hour service daily including public holidays to the community and its environs.

The clinical records of the geriatric patients who presented each day to the hospital with emergency health conditions

were collected and entered into a data collection schedule sheet. The geriatric patients who needed highly specialized diagnostic investigations and critical care were referred out and excluded from the study. Sample size estimation was determined using the formula<sup>[11]</sup> for estimating minimum sample size for descriptive studies when studying proportions with entire population size <10,000 using estimated population size of 500 geriatric patients based on the previous annual geriatric patients hospital attendance records. The estimated minimum sample size assuming 50% expected variance in estimating the proportion of the geriatric patients attending the hospital gave final minimum sample size estimate of 217 geriatric patients. However, the selected sample size of 216 geriatric patients was used based on the duration of the study. Relevant laboratory and radio-diagnostic investigative studies not available in the study center were done at Federal Medical Centre, Owerri, Imo State University Teaching Hospital, Orlu, and Hi-tech Laboratory, Owerri. Data extracted for analysis included bio-data and diagnosis made.

The authors defined geriatric patients as those aged 65 years and above.<sup>[12]</sup> An emergency medical condition refers to medical or surgical condition that requires immediate care on an unscheduled basis. These patients are admitted to the in-patients services of the hospital for management.

## Statistics

The results generated were analyzed using software Statistical Package for Social Sciences (SPSS) version 13.0, Inc., Chicago, IL, USA, for the calculation of mean, frequencies, and percentages.

## Results

A total of 216 geriatric emergencies were seen during the study period. The ages of the patients ranged from 65 years to 98 years with mean age of  $72 \pm 1.14$  years. The age ranged from 65 years to 95 years for the males with mean age of  $70 \pm 2.14$  years while for the females the age ranged from 65 years to 98 years with mean age of  $74 \pm 3.60$  years. There were 94 males and 122 females with a male to female ratio of 1: 1.3 [Table 1]. The three most common causes of geriatric emergencies were acute malaria (33.8%), hypertensive crises syndrome (19.0%), and acute hypertensive heart failure (18.1%) [Table 2].

## Discussion

This study has shown the relevance of medical conditions such as communicable disease (acute malaria) and noncommunicable diseases (hypertensive crises syndrome and hypertensive heart failure) as important contributors to geriatric emergencies in the study area. This pattern of geriatric emergency is related to the general trend of

**Table 1: Age and sex distribution of the study population**

Age (years)	Male (%)	Female (%)
65-74	51 (54.3)	70 (57.4)
75-84	33 (35.1)	38 (31.1)
≥85	10 (10.6)	14 (11.5)
Total	94 (100.0)	122 (100.0)

**Table 2: Top 10 geriatric emergencies\***

Diagnosis	Frequency	Percentage
Acute malaria	73	33.6
Hypertensive crises syndrome	41	19.0
Acute hypertensive heart failure	39	18.1
Acute hyperactive airway diseases	35	16.2
Acute hypertensive cardiovascular accident	34	15.7
Accident, trauma and injuries	29	13.4
Acute gastroenteritis	18	8.3
Diabetic emergencies	16	7.4
Hernia(obstructed/strangulated)	11	5.1
Acute bladder outlet obstruction	8	3.7

\*Multiple diagnoses were recorded for some patients. \*Percentages represent proportion of the study population.

morbidity from communicable and noncommunicable diseases in Nigeria with acute malaria being the commonest communicable disease and cardiovascular diseases (hypertension and hypertension-related heart failure) the most common noncommunicable disease.<sup>[7,8]</sup> This finding has buttressed the fact that although noncommunicable diseases such as cardiovascular diseases are increasing in importance in recent years in Nigeria because of socio-economic and demographic factors, nevertheless communicable diseases such as acute malaria still remain the predominant geriatric emergency medical problem. At present, noncommunicable diseases are not a high priority in Nigeria but the probability of death from noncommunicable diseases is higher in Nigeria than in developed countries.<sup>[7]</sup> The prospect of curtailing these common geriatric medical emergencies depend on clear understanding of these emergencies by the elderly citizens in rural Nigeria since the geriatric population is a special group of people whose diseases and illnesses are influenced by the process of ageing.<sup>[2,3]</sup> When these important contributors to geriatric medical emergencies especially hypertension crises syndrome and heart failure are not adequately treated; they may constitute an obstacle to the elongation of life expectancy among geriatric Nigerians particularly those who are living in health-resource poor rural Nigerian communities.

This study has shown that the most common cause of geriatric emergency was acute malaria infection. This is in consonant with reports from other studies in Nigeria<sup>[13,14]</sup> but different from what was reported among geriatric patients from developed countries where noncommunicable diseases especially cardiovascular diseases take the front burner in

geriatric emergency health problem.<sup>[15]</sup> According to these reports from Nigeria, malaria is the most common cause of morbidity from communicable disease in all age groups in the country, although age is a surrogate marker of acquired immunity for malaria.<sup>[16]</sup> However, the geriatric population in rural endemic malaria areas are not regarded as a high risk group for malaria infection but they are prone to acute episodes of malaria. This is attributed to age-related decline of the immune system (immunescence) that compromised their body defense against external insults and internal immunologic surveillance.<sup>[17]</sup> In addition, the rural environment which is holoendemic might have predisposed them to repeated malaria infection. Malaria therefore causes variations in geriatric health which may result in the impairment of their functional capacities or otherwise pose a threat to their aliveness. This therefore underscores the need for the involvement of elderly patients in malaria control programs especially through health education and promotion in order to reduce the burden of malaria infection among this group of elderly citizens in rural Nigeria especially those experiencing some forms of inequity in accessibility, availability, and affordability of basic health care services. The Roll Back Malaria Initiative is aimed at building human and institutional resources and support to fight the scourge of malaria infection; elderly persons who are living in rural Nigeria are important recipients of health information and sources of motivation for the family and community members concerning health matters such as early and prompt treatment and prevention of malaria infection. The geriatric health education on malaria disease should therefore be an important part of geriatric malaria management consultation especially in holoendemic malaria communities.

Hypertensive crises syndrome is the second most common geriatric emergency in this study. This finding has corroborated the reports that hypertension is the most common noncommunicable disease in Nigeria.<sup>[7,18]</sup> According to these reports, hypertension has become a clinical and public health problem in Nigeria and a major cause of noncommunicable disease morbidity and mortality. This finding is in tandem with the increasing evidence of the synergistic relationship between blood pressure and aging and could be a reflection of the magnitude of hypertension among the geriatric population in the study area. This is in agreement with the generalization that in most communities, only about 50% of those who are hypertensive are aware of their hypertensive conditions and less than 50% of those who are aware are receiving adequate treatment. Although, blood pressure is easily measured with sphygmomanometer, majority of geriatric population in rural Nigeria have not realized that arterial hypertension is a serious life-threatening medical condition. Hypertensive crises syndrome may not have an abrupt onset<sup>[19]</sup> and clinicians in rural medical practice are likely to encounter patients with hypertensive urgencies

and emergencies. Physicians should therefore screen for hypertension in every geriatric consultation so as to counsel geriatric patients on medication adherence as well as initiate primary and secondary prevention in order to reduce its emergency presentation with its attendant risk of death.

The third most common cause of geriatric emergency in this study was acute hypertensive heart failure. This finding is in consonance with previous reports in Uyo,<sup>[20]</sup> Sokoto,<sup>[21]</sup> and in other African countries such as Nairobi.<sup>[22]</sup> According to these reports, hypertension is the major cause of heart failure and is fast increasing in developing countries at an alarming rate.<sup>[23]</sup> Although, it is generally believed that adequate blood pressure control does not completely obviate the risk of developing complications among hypertensive patients. However, the study has shown that up to two-thirds of known hypertensives who are on treatment are inadequately controlled.<sup>[24]</sup> Among the factors responsible for inadequate control was poor adherence to treatment. In addition, inadequate use of antihypertensive might be contributory as studies have demonstrated that black hypertensives have a low response to one drug alone unlike most Caucasians who can be adequately controlled on one drug as monotherapy. The vulnerability of the geriatric hypertensives to cardiovascular diseases emergencies such as heart failure could be due to cardiovascular system changes in the elderly which is prone to degeneration and are therefore susceptible to decompensation.<sup>[25]</sup> In addition, there is a direct relationship between blood pressure and cardiovascular disease-related complications. The higher the blood pressure, the greater the risk of cardiovascular events such as heart failure. Furthermore, the finding of this study could be a mirror of the burden of hypertension in the study area and a proxy indicator of poor awareness of early symptoms of hypertension-related complication like heart failure and probably poor state of hypertension control among the patients. It may also be attributed to late presentation for treatment and lack of access and affordability of proper cardiovascular care. Thus, adequate control of blood pressure in geriatric hypertension including its primary and secondary prevention can reduce significantly the end organ effects of hypertension.

### Study implications

Geriatric health is as important as maternal and child health in Nigeria and should never be overlooked in terms of healthcare programs and facilities for them. All over the world, people respect the aged because age-related gray hair is synonymous with wisdom and is a major milestone in one's life. If the geriatric wellness and health are affected and afflicted by emergency medical conditions, they will probably have shorter expectations of life. Knowledge of common medical and surgical emergencies can be a useful tool to the clinicians attending to geriatric emergencies in rural Nigeria especially in secondary health care facilities.

This study therefore envisaged the challenges of emergency healthcare delivery to the geriatric patients in a rural Nigeria secondary health institution with implications for fiscal and health policy development and diverse requirements.<sup>[26]</sup>

### Conclusion

This study has shown that the three most common geriatric emergencies were medical emergencies and include acute malaria, hypertensive crises syndrome, and acute hypertensive heart failure. Improving the quality of geriatric health care will help in reduction of these emergency medical conditions. There is therefore the need for action against the challenges of hypertensive cardiovascular diseases while reinforcing the largely underfunded war on malaria disease. In addition, health education of the geriatric population and their families to embrace early health-seeking behavior, health maintenance, and promotional practices that are needed to promote longevity is invariably advocated.

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