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Pattern of Mortality in Medical Emergency Room: Experience at Abakaliki Nigeria

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Abstract

Background: An Emergency Department (ED) is a medical treatment facility dedicated to emergency medicine with an expectedly higher mortality rate. There is no available data on the pattern of mortality in the medical emergency room of the Federal Teaching Hospital Abakaliki (FETHA), a tertiary health facility in Abakaliki South-eastern Nigeria. Hence, this study was undertaken to determine the pattern of mortality of cases seen at the Medical Emergency unit of FETHA and compare it with that elsewhere in the country with the view of using the data generated as a baseline for planning purposes and for future studies.

Method: This is a retrospective, descriptive and hospital-based study of the demographics and mortality pattern of patients seen at the medical emergency unit of the Federal Teaching Hospital Abakaliki (FETHA) over an 18 months period from January 2014 to June 2015. The analysis was done using the Statistical Package for Social Sciences (SPSS) version 19 software.

Result: A total number of 4,270 patients were seen over the study period with 184 deaths giving a mortality rate of 4.31%. The mortality included 104 men and 80 women. The age range and mean age of the mortality were 20-108 years and 50.54 ± 12.42years respectively. Stroke accounted for 23% (43) of the mortality. Others were Heart failure, chronic liver disease, chronic kidney disease, diarrhoeal diseases, diabetes mellitus and others in descending order of frequencies. When the causes of mortality were grouped according to the systems affected, neurological disorders accounted for about 30% of the mortality while gastrointestinal, cardiovascular, respiratory and renal disorders accounted for 17%, 14%, 10%, and 7% respectively. Non-communicable diseases accounted for 70% while communicable diseases accounted for 30% of the mortality.

Conclusion: The most common cause of death is a non-communicable disease at the prime productive age with male preponderance. There is a need for elaborate health education at grass root and also for the creation of separate emergency rooms for different medical specialties in tertiary health facilities to facilitate a prompt Specialist review.

Keywords: Mortality; Pattern; Emergency; Health facility; Nigeria

Introduction

An Emergency Department (ED) is a medical treatment facility dedicated to emergency medicine. Here, acutely ill and injured people are given treatment and care promptly and at any time of the day [1]. It represents an important portal of entry into health facilities for the acute care of patients who have very severe medical conditions or accidents. The patients usually present without a prior appointment; either by their own means or by that of an ambulance. Due to the unplanned nature of patient attendance, the department must provide initial urgent treatment for a broad spectrum of illnesses and injuries, some of which may be life-threatening and require immediate attention. It is also known as an Accident and Emergency department (A and E), Emergency Room (ER), Emergency Ward (EW) or casualty department. The emergency departments of most hospital operate 24 hours a day, although staffing levels may be varied in an attempt to reflect patient volume. The hallmark of ED procedures is prompt diagnosis and institution of appropriate treatment within the 'golden hour' of the illness in order to prevent mortality and reduce morbidity [2].

The mortality rate in ED is expectedly higher than that of the patients admitted to the wards due to the severe and sudden nature of the cases that usually present there. There is no available data on the pattern of mortality in the medical emergency room of the Federal Teaching Hospital Abakaliki (FETHA), a tertiary health facility in Abakaliki South-eastern Nigeria.

This study was conducted at the Medical Emergency room of Federal Teaching Hospital Abakaliki (FETHA). Abakaliki is the capital of Ebonyi state which has only one tertiary health facility. This hospital takes a referral from the state which has a population of about 4,339,136 and its environs. FETHA has separate Medical, Surgical, Pediatrics, and Gynecology emergency units which manage acute severe cases in the respective medical Specialties. When patients present at Hospital triage unit, a medical officer sorts them and refers to an appropriate emergency unit for onward management. This study was undertaken to determine the pattern of mortality of cases seen at the Medical Emergency unit of FETHA and compare it with that elsewhere in the country with the view of using the data generated as a baseline for planning purposes and for future studies.

Methodology

This is a retrospective, descriptive and hospital-based study of the demographics and mortality pattern of patients seen at the medical emergency unit of the Federal Teaching Hospital Abakaliki (FETHA) over an 18 months period from January 2014 to June 2015. The case files of all the patients seen at the medical emergency unit over the period in view were retrieved from the hospital medical records department and

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the number of death recorded was noted. Relevant data were extracted from the case files of the patients that died at medical emergency which include the age, sex, and clinical diagnosis. The diagnoses were made by the medical officer on duty or the attending Physician. The causes of death were categorized according to the system affected and also according to the pathology. The above data were analyzed using Statistical Package for Social Sciences (SPSS) version 19 software. The qualitative data were expressed as frequencies and percentages, while the quantitative data were summarized as means and standard deviations.

Results

Out of the total number of 4,270 patients seen over the eighteen (18) months period, 184 died giving a crude mortality rate of 4.31%. The rest of the patients were either discharged home or admitted to the medical ward. About ten (10.22) deaths occurred within each month. The mortality included 104 men and 80 women which gives a sex ratio of about 5:4. The age range and mean age of the mortality were 20-108 years and 50.54 ± 12.42 years respectively. The details of sex and age distribution are in Table 1. Stroke accounted for 23% (43) of the mortality. Others were a congestive cardiac failure, chronic liver disease, chronic kidney disease, diarrhoeal diseases, diabetes mellitus and others in descending order of frequencies. The details are shown in Table 2. When the causes of mortality were grouped according to the systems affected, neurological disorders accounted for about 30% of the mortality while gastrointestinal, cardiovascular, respiratory and renal disorders accounted for 17%, 14%, 10%, and 7% respectively. The details are shown in Table 3. Non-communicable diseases accounted for 70% while communicable diseases accounted for 30% of the mortality. The details are shown in Figure 1.

Age Range (years)	Male-n (%)	Female-n (%)	Total-N (%)
20-29	9 (4.9)	15 (8.1)	24 (13)
30-39	14 (7.6)	3 (1.6)	17 (9.2)
40-49	17 (9.2)	10 (5.4)	27 (14.6)
50-59	37 (20)	30 (16.3)	67 (36.4)
60-69	10 (5.4)	12 (6.5)	22 (11.9)
70-79	14 (7.6)	6 (3.2)	20 (10.8)
80-89	2 (1)	4 (2.1)	6 (3.2)
≥90	1 (0.5)	0 (0)	1 (0.5)
Total	**104 (56.5)**	**80 (43.5)**	**184 (100)**

Table 1: Sex and age distribution.

Etiology	Male-n (%)	Female-n (%)	Total-N (%)
Stroke	26 (14.1)	19 (10.3)	45 (24.4)
Cardiac failure	15 (8.2)	12 (6.5)	27 (14.7)
Liver failure	10 (5.4)	4 (2.2)	14 (7.6)
Renal failure	8 (4.3)	5 (2.7)	13 (7.1)
Diabetes mellitus	6 (3.3)	6 (3.3)	12 (6.5)
Diarrhea/cholera	8 (4.3)	4 (2.2)	12 (6.5)
CNS Infections	6 (3.3)	5 (2.7)	11 (6.0)
Malaria	4 (2.2)	7 (3.8)	11 (6.0)
Pneumonia	5 (2.7)	3 (1.6)	8 (4.3)
HIV/Tuberculosis	4 (2.2)	4 (2.2)	8 (4.4)
Bleeding PUD	3 (1.6)	2 (1.1)	5 (2.8)
Brought in dead	2 (1.1)	0 (0)	2 (1.1)
Others	7 (3.8)	9 (4.9)	16 (8.7)
Total	**104 (56.5)**	**80 (43.5)**	**184 (100)**

Table 2: Causes of mortality.

Subspecialty	Male	Female	Total
Neurology	32 (17.4)	24 (13.0)	56 (30.4)
Gastroenterology	21 (11.4)	11 (6.0)	32 (17.4)
Cardiology	15 (8.2)	12 (6.5)	27 (14.7)
Pulmonology	11 (6.0)	8 (4.4)	19 (10.4)
Malaria/TB/HIV	8 (4.3)	11 (6.0)	19 (10.4)
Nephrology	8 (4.3)	5 (2.7)	13 (7.0)
Endocrinology	6 (3.3)	6 (3.3)	12 (6.6)
Others	3 (1.6)	3 (1.6)	6 (3.2)
Total	**104 (56.5)**	**80 (43.5)**	**184 (100)**

Table 3: Mortality according to subspecialty.

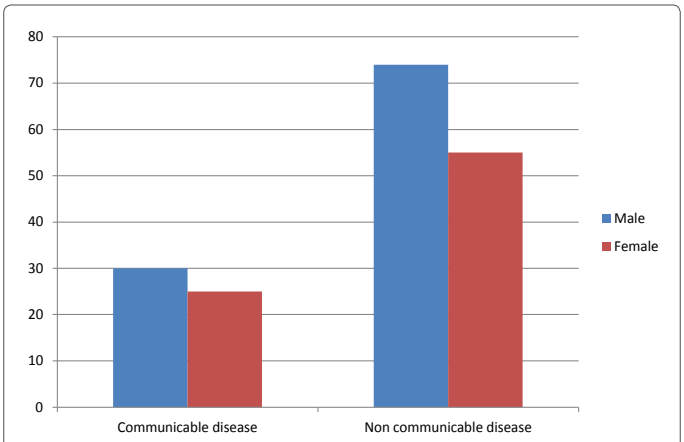

Figure 1: Disease classification.

Discussion

The study described the pattern of mortality in the medical emergency room of a tertiary health facility in Abakaliki, Southeastern Nigeria. The reported crude mortality rate of 4.31% in this study is similar to 3.9% reported by Ogunmola et al. in Southwest Nigeria [3]. Onwuchekwa et al. [4] reported a higher mortality rate of 6.6% in South-South Nigeria and Jamoh reported 9% in Northern Nigeria [5]. The lower mortality rate in this study could be explained by the fact that the study center has a separate and dedicated Medical emergency room well manned by medical officers and Physicians that attend to only medical cases. The time from the presentation of the patient at the emergency room to the time of review by the physician is very short due to prompt patients sorting protocol. The subspecialist Physician usually reviews the patient within 24 hours of presentation on most occasions. Also, trauma cases with an attendant higher mortality rate as reported by Rukewe et al. [6] in Southwest Nigeria were excluded from the study as they were seen at the surgical emergency room. There was a male preponderance of 57% which is in keeping with other similar studies. The male preponderance is multi-factorial. Most men decline to go to the hospital until the illness becomes very severe. This is both cultural and also in the nature of men to deny illness as a mark of strength. This makes them to usually present to the health facility in an advanced stage of their illness with attendant higher mortality. Also, the risk factors for mortality in this study were predominantly cardiovascularly related which are more prevalent amongst men [7]. The mean age of mortality was 51 years and 80% of the mortality occurred in a young and middle age group. This is similar to the report by Ogunmola et al. [3] who reported a mean age of mortality of 52 years and about 70% within young and middle age groups. The people in this age group constitute the bulk of the workforce in every society. This constitutes great economic and human resource loss to the families,

society and the government. Stroke and heart failure were the most common cause of death in this study. This is in keeping with the report of Ogunmola et al. [3] in Southwest Nigeria and Ekere et al. [8] in South-South Nigeria Eze et al. [9] reported that heart failure and stroke constituted the most common reason for admission to medical wards in the same center in 2013. The above conditions are highly preventable conditions by reduction of cardiovascular risk factors [10-12]. Also, there early presentation to health facilities will improve the prognosis. Non-communicable diseases constituted 70% cause of mortality. This is similar to 80% reported of Ogunmola et al. [3]. This suggests the epidemiologic transition from traditional scourge and burden of communicable diseases to that of Non-communicable diseases in Africa as reported by Omran [13]. Also, there is emergent double disease burden as communicable diseases like HIV/AIDS, Viral hemorrhagic fever and tuberculosis are still quite prevalent in Africa [9-14]. This puts much strain on the fragile health system of Nigeria and other developing countries [15,16].

Conclusion and Recommendations

The mortality rate in the medical emergency room of a tertiary health facility at Abakaliki Southeastern Nigeria was relatively low with higher male involvement. Most of the cases were in the productive year of life. Stroke and heart failure were the most common cause of mortality. Non-communicable diseases accounted for the majority of the mortality. There is a need for an elaborate and consistent health campaign as most of the causes of mortality are preventable. There is also a need to strengthen the health sector in order to cope with the emergent double disease burden of both communicable and Non-communicable diseases. It is also recommended that tertiary health facilities should create separate emergency rooms for different medical specialties. This will improve patient sorting and encourage prompt review by the core specialist doctor.

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