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DURATION OF HOSPITAL STAY AND MORTALITY IN THE MEDICAL WARDS OF AHMADU BELLO UNIVERSITY TEACHING HOSPITAL, KADUNA

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Abstract
Background: Many factors affect mortality among hospitalized patients. These include: - age, sex, diagnosis, types and complexity of co-morbidities, social and economic conditions of the patient and duration of hospital stay. Duration of hospital stay as it affects mortality is studied on our medical wards.
Methods: A two year review of admissions into our medical wards between June 1999 and June 2001 was carried out. Medical records of patients as well as the discharge/death register were used. The SPSS version 10 was used to analyse the data
Results: A total of 179 patients with age range of 12-85 years, mean age of 44.46 years were studied. Twenty (11.2%) of them died. Sixty-five percent of all deaths had occurred by the fifth day of admission, only 15% of all deaths occurred after the 10^{th} day of admission. The mean duration of hospital stay for those who died was significantly shorter ($P<0.01$) than that for those who were discharged (4.95 days vs. 12.5days).
Conclusion: The results suggest that duration of hospital stay is strongly linked with the likelihood of death among other factors. Death occurring mostly within the first few days of admission. Improved public health and education, raising the socio-economic status of people and improving the standards of our healthcare facilities and personnel would prevent a large proportion of deaths on our medical wards.

Key words: Hospital stay, mortality, medical ward

Introduction

A large proportion of Nigeria's health problems are general and preventable. Specialized tertiary care is needed for about 10% of our health problems. [1] In Nigeria, health-seeking behaviour is still generally poor[2] with patients presenting in advanced stages of disease conditions. A lot of Nigerians live in poor social conditions with little economic means; they are thus more likely to have poor health and are less likely to seek health care services. Ahmadu Bello University Teaching Hospital (ABUTH) Kaduna is one of the three-unit hospitals that constitute the Ahmadu Bello University Teaching Hospital Complex. It is a major referral centre in Kaduna town and its environs. It was noted that most patients who die in the hospital's medical wards present late, do not have adequate financial support or are often referred late from other health facilities. We thus sought to assess the effect of duration of hospital stay on mortality in our hospital.

Materials and Methods

A two-year review of admissions into the medical wards of ABUTH, Kaduna between June 1999 and June 2001 was carried out. The admission and discharge/death register as well as patients' records were used. All the patients were referred either from private clinics or from Government hospitals or primary health care centres after receiving treatment for sometime without improvement. Information obtained from the records included, the age, sex, diagnosis, duration of hospitals stay and endpoint of each patient (whether the patient was discharged or died). The data was analysed using the statistical package for social sciences (SPSS 10) version 10.

The medical department of ABUTH Kaduna has 44 beds (12 beds in female ward and 32 beds in the male ward). The study period was punctuated by a total of ten (10) months of strike by different unions both locally and nationwide and the Kaduna crises which took place between February and May 2000. This affected hospital attendance.

Results

A total of 179 patients were admitted within the study period. The age range of the patients was 12 – 85 years, mean age was 44.46 years. There were 118 (65.9%) males and 61 (34.1%) females. One hundred and fifty nine patients (88.8%) were discharged and 20 (11.2%) died. Table 1 shows the age – sex distribution of the patients. The mean duration of hospital stay for those discharged was 12.5 days. Those that died stayed an average of 4.95 days.

First- day deaths accounted for 30% of all deaths, by the second day 55% of all deaths had occurred. Before the 5th day 65% of all the deaths had occurred. Only 15% of all the deaths occurred after the 10th day of admission. Table 2 shows the grouped duration of stay and endpoint (discharged or died).

Table 1: Age-Sex distribution of the study population

Age (years)	M	F	Total
11 – 20	6	14	20
21 – 30	15	8	23
31 – 40	19	5	24
41 – 50	16	8	24
51 – 60	15	7	22
61 – 70	16	3	19
71 – 80	17	8	25
81 – 90	14	8	22
Total	118	61	179

There is a fairly even distribution of admissions through the age groups. Elderly males constituted most of the admissions. Males aged 61 – 90 years accounted for 26% of all admissions. The highest incidence of admission for males was in the 31 – 40 year age group and in the 11 – 20 year age group for females. Persons aged above 70 years constituted 26.3% of all the admissions.

Thirteen (65%) of all deaths occurred before the 5th day in hospital. Only 15% of all deaths occurred after the tenth day of admission. Six (30%) of the deaths were in the first day of hospital stay.

Table 2 –Grouped duration of hospital stay and endpoint

Endpoint/Duration of hospital stay	<5days	5 - 10 days	>10 days	Total
Discharged	48	43	68	159
Died	13	4	3	20
Total	61	47	71	179

Table 3 shows gender and diagnosis among the males and the females studied

Diagnosis	M	F	Total	%
Infections	38	23	61	34
Renal disease	7	1	8	4.5
Hypertensive heart disease	28	15	43	24
Diabetes and it's complications	9	6	15	8.4
Malignancies	5	-	5	2.8
HIV	2	1	3	1.7
Gastrointestinal disorders	14	5	19	10.6
Sickle cell disease	4	7	11	6.1
cerebrovascular accident	11	3	14	7.8
Total	118	61	179	100

Infections accounted for 34.1% of all admissions followed by Hypertensive Heart Disease (HHD), which accounted for 24% of the admissions. HIV, surprisingly, constituted only 2.8% of admissions despite the high prevalence of HIV/AIDS cases in Kaduna State. This portrays the attitude of people to HIV and the stigma the society attaches to the disease. For fear of discrimination infected people and their relatives prefer to attend private clinics where their ailments are treated with "Privacy".

Mean duration of hospital stay for those discharged and those that died were 12.5 days and 4.95 days ($P < 0.01$) respectively.

Discussion

Factors affecting hospital mortality are many, over which hospitals and physicians have no control. In theory, however, mortality rates can be standardized to remove some of the effects of these factors in order to assess the actual quality of care in a given hospital[3]. The poor economy in developing countries coupled with the absence of state – funded health care aid may rather predispose relatives to limit spending of available scarce resources in procuring medicare for the elderly[4] and the very sick patients whose "soon expected" burial expenses may equally be demanding[4]. Some of the factors affecting mortality include: - age, sex, severity of principal diagnosis, types and complexity of co-morbidities, social and economic conditions of the patient and duration of hospital stay. [3]

Thirty percent of all deaths occurred on the first day of admission, 55% of all deaths by the second day and by the fifth day 65% of all deaths had occurred. First-day deaths constitute a significant portion of a hospital's mortality rate even though hospitals can do little to prevent them. In our centre most of the patients are poor, and oftentimes present very late; this makes it very difficult to act swiftly as soon as they present since whatever action is taken is dependent on their ability to provide the funds. Those who stay long in hospital do well as shown in this study with only 15% of all deaths occurring after the 10^{th} day of admission.

Proper and timely referral is the ideal approach where a hospital cannot handle any case, either because it has no facilities to cater for the medical care needs of the patient or in case of a more chronic Ill-health where skilled nursing facilities are required. The greatest challenge faced by our tertiary institutions is that most patients are referred late probably contributing to the high mortality seen in the first few days of admission.

Persons aged 70 years and above constituted 26.3% of all admissions. This is in contrast with studies in Enugu with 7.2%[4], and Canada with 15% [5]. In Enugu, the authors suggested the low incidence may be due the "soon expected" burial which is equally demanding among other reasons. In the North, where majority of people bury their dead almost immediately and spend less on burial, it may well be the reason for the higher incidence of elderly admissions on our medical wards. In a study in Ibadan, most of the deaths resulted from cardiovascular diseases especially hypertension, 43.5% of them died in heart failure[6]. In our study 24% of the deaths were from hypertensive heart disease. Junaid TA in an analysis of a 5-year autopsy data on Nigerians aged 31-60years showed infective, cardiac and neoplastic diseases as major causes of mortality in this age groups[7]. Infections were leading causes of death in our study. Neoplastic diseases, however, caused only 2.8% of deaths seen in our study.

Developed countries have good medical audit mechanisms in place that check the clinical competence of practitioners and health care facilities to protect the interest of the patients. In Nigeria, the issue of continuing medical education (CME) is seen as the exclusive preserve of health care professionals in tertiary centres. There is an urgent need to institutionalize continuing medical education (CME) by the authorities concerned. Public enlightenment aimed at positively changing the health-seeking behaviour of Nigerians should be encouraged. Strict disciplinary measures should be taken against any erring practitioner or health facility and strict adherence to statutory medical ethics should reduce the mortality rates seen in our tertiary healthcare centres.

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