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Research Article

A Two-Year Review of Medical Admissions at the Emergency Unit of a Nigerian Tertiary Health Facility

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ABSTRACT: The main objective of this study is to describe the spectrum of medical conditions presenting at the emergency department of the Federal Medical Centre, Abeokuta, Nigeria over a two year period. This is a retrospective analysis of a prospectively collected data. Data was collected from the emergency room admission records, patients' case records, as well as Department of Medicine's weekly morbidity report. Information collected included patients' age, gender, date of admission, and clinical diagnoses. All the diagnoses were classified into the medical specialty they belong to as well as into a broad category of infectious and non-communicable diseases. A total of 2377 patients were admitted in the hospital during the period under review. The highest proportion of admissions was in the 30-39 years age group (17.6%), followed by 40-49 years (17.0%) and 20-29 (16.7%) age groups. Infectious diseases accounted for the highest incidence of admissions (1132; 47.6%). This was followed by diseases of the cardiovascular system (414; 17.4%), central nervous (227; 9.5%) and endocrine (193; 8.1%) systems, respectively. The least proportion of admissions was accounted for by dermatological conditions (4; 0.2%). Overall, non-communicable diseases accounted for 1245 (52.4%) of the cases and communicable diseases for 1132 (47.4%). Our study shows that non-communicable diseases (NCDs) are more likely reasons for adult Nigerians living in this Nigerian city to present for acute care. It also shows that age of presentation is at the prime of life. It is suggested that efforts should be geared towards control of emerging NCDs as well as control of prevailing common communicable diseases.

Keywords: Emergency, Medical Admissions, Communicable, Non-communicable, Abeokuta, Nigeria

INTRODUCTION

The emergency department is most often the gateway to many hospitals and healthcare facilities. The patterns of heart diseases in this department often reflect the magnitude of health problems in the society. The awareness and knowledge of the spectrum of medical conditions at the emergency room will also help in healthcare planning and provision of essential health services in the department such as equipment, hospital space and other needs both by the patients and

healthcare providers. Information on causes and patterns of medical admissions in the emergency department is limited in our environment.

The objective of this study is therefore to describe the spectrum of medical conditions presenting at the emergency department of the Federal Medical Centre, Abeokuta, Nigeria over a two year period (January 2006- December 2007)

MATERIALS AND METHODS

This is a retrospective analysis of a prospectively collected data between January 2006 and December 2007. Data was collected from the emergency room admission records, patients' case records, as well as Department of Medicine's weekly morbidity report. All the diagnoses were based on the diagnosis made by the supervising consultants. We obtained the following information: patients' age, gender, date of admission, and clinical diagnoses. All the diagnoses were

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classified into the medical specialty they belong to as well as into a broad category of infectious and non-communicable diseases. Diseases were classified based on ICD-10.

Data analysis

All the information obtained was entered into a uniform case report form. Data were analysed with SPSS 17.0 (SPSS Inc., Chicago, IL, USA). Descriptive statistics was used for the summary of the data. Where applicable, a p-value of <0.05 was assumed to be statistically significant.

RESULTS

A total of 2377 patients were admitted in the hospital during the period under review. There were 1237(52%) males and 1140(48%) females, with a male preponderance in the ratio of 1.1:1. Table 1 shows the age distribution of the patients. The highest proportion of admissions was in the 30-39 years age group (17.6%), followed by 40-49 years (17.0%) and 20-29 (16.7%) age groups.

Table 1

Clinical characteristics of the. Subjects

Parameter	All	Men	Women
Number	2377	1237	1140
Percent (%)	100	52	48
Age	45.6 (18.5)	45.4(18.4)	45.8(18.6)
Age group			
<20	156(6.6)	88(3.7)	68(2.9)
20-29	397(16.7)	191(8.0)	206(8.7)
30-39	419(17.6)	224(9.4)	195(8.2)
40-49	404(17.0)	230(9.7)	174(7.3)
50-59	356(15.0)	182(7.7)	174(7.3)
60-69	337(14.2)	169(7.1)	168(7.1)
>=70	308(13.0)	153(6.4)	155(6.5)
Communicable diseases	1132(47.6)	591(47.8)	541(47.5)
Non-communicable diseases	1245(52.4)	646(52.2)	599(52.5)

There was a progressive increase in the number of admissions with each increasing age group, up to the 30-39 years age group, and a progressive decline

thereafter. The least proportion of admission was in those aged below 20 years with 156 (6.6%) cases. Figure 1 is a histogram showing the age distribution of the subjects.

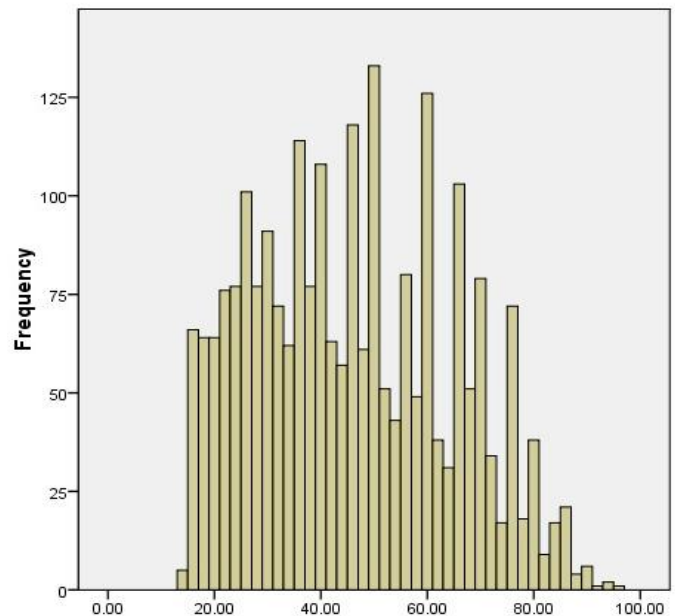


Fig. 1

Histogram showing the age distribution of the subjects

Table 2

Pattern of admission based on specialty

Specialty	Number	Percent
Infectious Diseases	1132	47.6
Cardiology	414	17.4
Neurology	227	9.5
Endocrinology	193	8.1
Gastroenterology	159	6.7
Respiratory Medicine	90	3.8
Haematology	87	3.7
Nephrology	61	2.6
Toxicology	10	0.4
Dermatology	4	0.2

Based on specialty, the distribution of all admitted patients is shown in Table 2. Infectious diseases accounted for the highest incidence of admissions (1132; 47.6%). This was followed by diseases of the cardiovascular system (414; 17.4%), central nervous (227; 9.5%) and endocrine (193; 8.1%) systems, respectively. The least proportion of admissions was accounted for by dermatological conditions (4; 0.2%).

Overall, non- communicable diseases accounted for 1245 (52.4%) of the cases and communicable diseases for 1132(47.4%).

Figure 2 depicts the trend in admission in relation to time/month of the year. It reveals the temporal pattern of admission with the highest admission noted in January and least in March. Peak periods of admission were also noted in the months of May and November

Table 3 shows the distribution of diseases according to the specialty as well as gender. Severe hypertension and acute heart failure are the common cardiac admissions. Complications associated with poor glycaemic control are the commonest endocrine emergencies in Abeokuta. Acute exacerbation of acute peptic disease and complications related to chronic liver disease are the commonest gastrointestinal and hepatobiliary emergencies encountered.

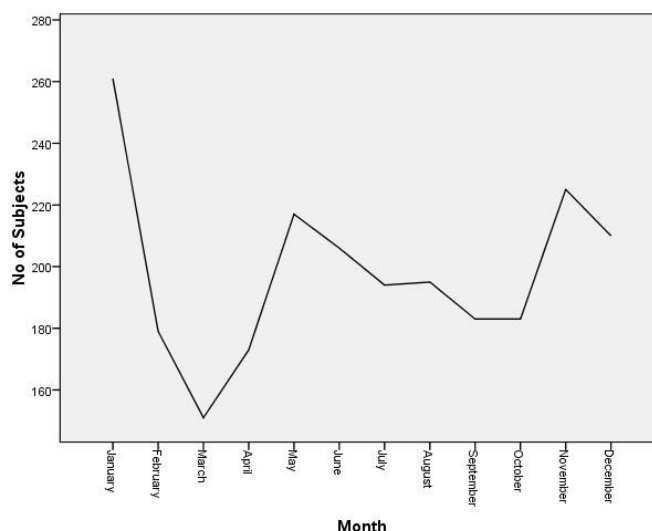


Fig.2
Temporal pattern of admissions at the Federal Medical center.

TABLE 3a:

Pattern of diseases according to specialty and gender: Cardiology, Dermatology, Endocrinology, Hematology and Nephrology

Specialty	Disease	All (n=2377)	Men (n=1237)	Woman (n=1140)
Cardiology	Severe Hypertension	205(49.5)	88(21.3)	117(28.3)
	Congestive Cardiac Failure	186(44.9)	108(26.1)	78(18.8)
	Acute chest pain syndrome	14(3.4)	8(1.9)	6(1.4)
	Arrhythmia	4(1.0)	1(0.2)	3(0.7)
	Cardiac tumour	1(0.2)	1(0.2)	0(0)
	Constrictive Pericarditis	1(0.2)	0(0)	1(0.2)
	Deep Vein Thrombosis	1(0.2)	0(0)	1(0.2)
	Complete heart block	1(0.2)	1(0.2)	0(0)
	Infective endocarditis	1(0.2)	1(0.2)	0(0)
	Total	414(100.0)	208(50.2)	206(49.8)
Dermatology	Steven Johnson Syndrome	4(100.0)	1(25.0)	3(75.0)
Endocrinology	Uncontrolled DM	131(67.9)	72(37.3)	59(30.6)
	Diabetic foot	39(20.2)	21(10.9)	18(9.3)
	Hyperglycemic coma	19(9.8)	10(5.2)	9(4.7)
	Thyrotoxicosis	4(2.1)	1(0.5)	3(1.6)
	Total	193(100.0)	104(53.9)	89(46.1)
Haematology	Haemolytic Anaemia	1(1.1)	1(1.1)	0(0)
	Total	87(100.0)	42(48.3)	45(51.7)
Nephrology	Acute Renal Failure	25(41.0)	14(23.0)	11(18.0)
	Nephrotic syndrome	5(8.2)	2(3.3)	3(4.9)
	Polycystic Kidney Disease	2(3.2)	2(3.2)	0(0)
	Total	61(100.0)	42(68.9)	19(31.1)
Gastroenterology	Acid peptic disease	123(77.4)	50(31.4)	73(45.9)
	Chronic liver disease (Cirrhosis)	21(13.2)	17(10.7)	4(2.5)
	PLCC	11(6.9)	9(5.7)	2(1.3)
	Gastric Carcinoma	1(0.6)	1(0.6)	
	Amoebic liver abscess	1(0.6)		1(0.6)
	Pancreatitis	1(0.6)		1(0.6)
	Malabsorption Syndrome	1(0.6)	(0.6)	
	Total	159(100.0)	78(49.1)	81(50.9)
	HbSS Crisis	69(79.3)	34(39.1)	35(40.2)
	Lymphoma/Lymphoproliferative disease	17(19.5)	7(8.0)	10(11.5)

TABLE 3b:

Pattern of diseases according to specialty and gender: Infectious, Toxicology, Neurology and Respiratory diseases

Infectious Disease	Acute Malaria	427(37.7%)	206(18.2)	221(19.5)
	Septicaemia	223(19.7)	128(11.3)	95(8.4)
	Gastroenteritis	166(14.7)	72(6.4)	94(8.3)
	HIV/AIDS	115(10.2)	57(5.0)	58(5.1)
	Lobar pneumonia	67(5.9)	47(4.2)	20(1.8)
	Pyelonephritis	44(3.9)	21(1.9)	23(2.0)
	Tuberculosis	34(3.0)	27(2.4)	7(0.6)
	Tetanus	25(2.2)	21(1.9)	4(0.4)
	Meningitis	21(1.90)	10(0.9)	11(1.0)
	Acute pyelonephritis	6(0.5)	1(0.1)	5(0.4)
	Liver Abscess	2(0.2)	1(0.1)	1(0.1)
	Bronchiectasis	1(0.1)		1(0.1)
	Amoebic dysentery	1(0.1)		1(0.1)
	Total	1132(100.0)	591(52.2)	541(47.8)
Toxicology	Carbon monoxide poisoning	8(80.0)	7(70.0)	1(1.0)
	Snake bite	2(20.0)	1(1.0)	1(1.0)
	Total	10(100.0)	8(80.0)	2(20.0)
Neurology	Stroke	169(74.4)	80(35.2)	89(39.2)
	Seizure	36(15.9)	22(9.7)	14(6.2)
	Hypertensive Encephalopathy	18(7.9)	11(4.8)	7(3.1)
	Brain Tumour (SOL)	2(0.9)	1(0.4)	1(0.4)
	Migraine	1(0.4)		1(0.4)
	Myasthenia Gravis	1(0.4)		1(0.4)
	Total	227(100.0)	114(50.2)	113(49.8)
Respiratory	Asthma	74(82.2)	37(41.1)	37(31.1)
	COPD	8(8.9)	7(7.8)	1(1.1)
	Cor pulmonale	8(8.9)	5(5.6)	3(3.3)
	Total	90(100.0)	49(54.4)	41(45.6)

Other causes of emergency admission in this city include sickle cell crises, complications associated with adverse drug reactions (Steven Johnson Syndrome), renal failure, stroke, seizure disorders and hypertensive encephalopathy.

Acute malaria, sepsis, gastroenteritis, complications associated with HIV/AIDS and lobar pneumonia are common infection related reasons for emergency admissions.

DISCUSSION

Generally, disease patterns in the emergency room may reflect the pattern of diseases in the immediate environment which the health facility subserves.

The higher male to female ratio observed in the study is similar to previous studies in patterns of medical ward admissions in other parts of the country. Except for hematological and gastroenterological disorders, generally the different disease conditions are more frequently diagnosed in men than in women. This is similar to studies by Odenigbo (Odenigbo and

Oguejiofor, 2009), Ogun (Ogun *et al.*, 2000), and Ike (Ike, 2008).

Apart from the fact that chronic diseases present earlier in men (due to the protective effect of female hormones), it is also likely that the men who are usually the breadwinners in the home are more likely to be taken to the hospital for acute care than their female counterparts.

The study also shows that non-communicable diseases are frequently diagnosed compared to traditional infectious diseases. This is a reflection of the NCD epidemic emerging in developing countries as Nigeria. Similar observations have been made by other workers in the country (Odenigbo and Oguejiofor, 2009, Ike, 2008, Unachukwu *et al.*, 2008). This is in contrast to studies carried out in the country in the 60s and 70s where communicable diseases were far dominant (Adetuyibi *et al.*, 1976, Haddock, 1979, Ogunmekan, 1973). The reasons for this include lifestyle changes, as well as rural to urban migration. This may also be reflective of the impact of control measures on communicable diseases, such as health education, better sanitation and immunization.

We also noted seasonal differences in the number of admissions during this period. Admission was highest during the hot and dry period of the year compared to the wet season. Least number of admissions was noted during the transition from hot to wet season. Similar patterns have been reported by previous workers in the country (Ansa *et al.*, 2008, Isezuo, 2003, Parry *et al.*, 1977, Kadiri and Arije, 1999). For the purpose of health planning, therefore, high admission rates can be anticipated during these periods and resources mobilized to meet the increased demands.

One of the limitations of this study is the fact that we did not collect outcome information.

In conclusion, this study shows that non-communicable diseases (NCDs) are more likely reasons for adult Nigerians living in this Nigerian city to present for acute care. It also shows that age of presentation is at the prime of life.

It is suggested that efforts should be geared towards control of emerging NCDs as well as control of prevailing common communicable diseases. It is also paramount to put in place secondary preventive measure to avoid chronic complications associated with these conditions. Efforts should be placed on NCD risk factors screening in the general community.

Although only 14% of our patients are in the elderly category, there is need for the establishment of geriatric care service in the community because of the growing elderly populace.

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