

*Full Length Research Paper*

# Some emerging issues in medical admission pattern in the tropics

O.O. Okunola, \*A.A Akintunde, P. O. Akinwusi

Department of Medicine, Ladoke Akintola University of Technology Teaching Hospital, Osogbo, Osun State, Nigeria

Accepted 05 July, 2019

Infectious diseases are an important cause of morbidity and mortality in Sub-Saharan Africa. However, there is a changing pattern in terms of medical admissions worldwide with an alarming increase in the prevalence of non-communicable diseases (NCDs) especially in the tropics over the last decade. A regular review and audit of medical admissions is necessary for health policy formulation and resource allocation. The aim of this study was to describe the pattern of medical admission in a Nigerian University Teaching Hospital and highlight the emerging trend. A retrospective review of medical admission at the LAUTECH Teaching Hospital, Osogbo, South Western Nigeria over a 3 year period (January 2005 to December 2007). 1786 patients were admitted into the medical wards during the period of study. This consisted of 1089 males (61.0%) and 697 females (39.0%) with age range 14-96 years, mean of 51 years ( $\pm 16.89$ ) and a male to female ratio of 1.5:1. Elderly subjects ( $\geq 60$  years of age) were the largest age group accounting for 27.3% and 29.8% of male and female admissions respectively. The indications for admission in order of frequency were cerebrovascular disease 239 (27.5%), Diabetes mellitus 194 (22.2%), Chronic Kidney Disease 116 (12.4%) and Tuberculosis 151 (16.6%). NCDs accounted for a significant number of admissions in this study. The elderly constituted the major age group. Non communicable diseases are the commonest indication for medical admission. There is therefore an urgent need for intensification of existing preventive strategies to combat the insurgence of NCDs.

**Keywords:** Tropics, Medical, Tuberculosis, Infectious diseases

## INTRODUCTION

The pattern of medical diseases varies from different regions of the world. A changing pattern towards non-communicable disease has been documented in various studies based on epidemiological predictions and observational data<sup>1,2,3</sup>. The preponderance of chronic non-communicable diseases in various hospitals across developing countries especially Nigeria have also been documented<sup>4,5,6,7,8</sup>.

In the past, infectious diseases accounted for most of the morbidities and mortalities among medical admission facilities across Africa<sup>9</sup>. However, as a result of the epidemiologic transition, chronic diseases especially cardiovascular diseases including stroke,

hypertension and diabetes mellitus, are attaining prevalence of heightened proportion<sup>1,10,11</sup>. It has been suggested that Africa will account for the major proportion of the increase in cardiovascular disease prevalence worldwide. The aim of this study therefore is to provide information on the pattern and burden of medical admissions in a tertiary health care facility in a capital city in South Western Nigeria.

It also highlights emerging issues in medical admissions in the tropics such as the changing demographics, the alarming increase in cardiovascular diseases and the need to strengthen the faltering secondary health care facilities.

The LAUTECH Teaching Hospital, Osogbo is a 200 bed hospital which provides tertiary and specialized care to close to 10 million people in South Western and parts

\*Corresponding author's email: [iakintunde2@yahoo.com](mailto:iakintunde2@yahoo.com)

**Table 1:** Age distribution of medical admission into LTH 2005-2007.

Age range(years)	Male (%)	Female (%)
14-20	84(7.7)	52(7.5)
21-30	187(17.2)	111(15.9)
31-40	143(13.1)	100(14.3)
41-50	188(17.3)	97(13.9)
51-60	176(16.2)	124(17.8)
>60	297(27.3)	208(29.8)
Unknown	14(1.3)	5(0.7)
<b>Total</b>	<b>1089</b>	<b>697</b>

**Table 2:** Pattern of medical disorders among medical admission in LTH between 2005-2007.

Diagnosis	Male (%)	Female(%)
Cerebrovascular Accidents	132 (12.1)	107 (15.4)
Diabetes Mellitus	109(10.0)	85(12.2)
Tuberculosis	98(9.0)	53(7.6)
Chronic Kidney Disease	81(7.4)	35(5.0)
Hypertensive disorders	75(6.9)	45(6.5)
Congestive cardiac failure	64(5.9)	60(8.6)
Chronic Liver Disease	52(4.8)	14(2.0)
Tetanus	35(3.2)	9(1.3)
Peptic ulcer Disease/Upper GI bleeding	25(2.3)	31(4.4)
Acute renal failure	42(3.9)	27(3.9)
Septicaemia	50(4.6)	57(8.2)
Meningitis	25(2.3)	6(0.9)
Malignancies	51(4.7)	13(1.9)
Pneumonia	30(2.8)	19(2.7)
Immunosuppression	27(2.5)	20(2.9)
Severe anaemia	21(1.9)	5(0.7)
Chronic Obstructive Pulmonary Disease	28(2.6)	8(1.1)
Seizure Disorder	13(1.1)	9(1.3)
Others	131(18.8)	94 (13.5)
<b>TOTAL</b>	<b>1089</b>	<b>697</b>

of the North Central region of Nigeria. There are five other tertiary hospitals within a 150 kilometer radius while there are eight other general hospitals (secondary health care facilities) within a 1 to 25 kilometer radius.

## MATERIALS AND METHODS

A retrospective study of the demographics and admission pattern of patients in the medical wards of the Ladoko Akintola University of Technology Hospital (LAUTECH) over a three year period from January 2005 to December 2007 was conducted. The patients case notes were retrieved, bio-data, final diagnosis (as made by the

**Table 3:** Pattern of outcome of medical admission in LTH 2005-2007

Outcome	Male (%)	Female (%)
Discharged	586(53.8)	347(49.8)
Leave against medical advice(LAMA)	75(6.9)	55(7.9)
Death	233(21.4)	139(19.9)
Referred	22(2.0)	24(3.7)
Unknown	173(15.9)	132(18.9)
<b>Total</b>	<b>1089</b>	<b>697</b>

managing specialist) and the final outcome were entered into a pre-coded spreadsheet and data was analysed with the aid of the Statistical Package for Social Sciences (SPSS Inc, Chicago, Ill Version 11.5). Data were expressed as frequency and percentages.

## RESULTS

A total of one thousand seven hundred and eighty six patients were admitted into the male and female medical wards of the Ladoko Akintola University of Technology Teaching Hospital , Osogbo , Nigeria from 1<sup>st</sup> January 2005 to 31<sup>st</sup> December 2007. They consisted of 1089 males (61.0%) and 697 females (39.0%). The elderly (>60 years) accounted for the largest percentage of admission among both the males and females, accounting for 29.8% of total female admission and 27.3% of total male admission(Table 1).

The pattern of medical disorders responsible for admission among males in the descending order included cerebrovascular disease 132 (12.1%), diabetes mellitus 109(10.0%), tuberculosis 98(9.0%), chronic kidney disease 81(7.4%) and hypertensive disorders 75(6.9%). Among females, cerebrovascular disease accounted for 107 (15.4%), diabetes mellitus 85 (12.2%), congestive cardiac failure 60(8.6%), tuberculosis 53(7.6%) and hypertensive disorders 45 (6.5%) (table 2). Other medical disorders responsible for medical admission included tetanus, peptic ulcer disease, acute renal failure, septicaemia, meningitis, chronic obstructive pulmonary disease and seizure disorders. During the period under review, there were 372 deaths recorded accounting for 21.4% of total male admissions and 19.9% of total female admissions. 75 males (6.9%) and 55 (7.9%) of females left against medical advice. (table 3).

## DISCUSSION

This study documented the pattern of medical admissions at our hospital over a three year period. It showed that chronic non-communicable diseases such as cerebrovascular accidents, hypertensive disorders, diabetes mellitus and chronic kidney diseases accounted for a significant portion of the medical admission profile.

This study agrees with similar studies in Nigeria and elsewhere which have also documented the emergence of non-communicable diseases over the last decade<sup>4,5,6,7,8</sup>. Tuberculosis also was the most common form of communicable disease during the study period.

The continuous but consistent transition towards endemicity of chronic non-communicable disease appears inevitable considering the fact that there are anecdotal evidences to support that infective and communicable diseases were major causes of morbidities and mortalities in the 70s<sup>3</sup>. However, as a result of several factors including increasing prevalence of hypertension, obesity, westernized diet and continuous changing lifestyle, non-communicable diseases especially cardiovascular diseases are already becoming highly prevalent.

Cardiovascular disease is responsible for one-third of global death and it is a leading contributor to the global disease burden. It presently has higher mortalities in developing countries than developed ones<sup>3</sup>. Reports from other developing countries have also revealed a changing pattern of medical disorders with respect to non-communicable diseases. World Health Organization (WHO) has suggested that up to 80% of the expected rise in cardiovascular disease burden worldwide by the year 2020 may actually come from developing countries<sup>11,15</sup>. This calls for urgent action including initiation of preventive strategies and appropriate treatment of secondary prevention of chronic debilitating complications usually associated with the presence of cardiovascular disease.

It should be noted that the cardiovascular disease burden rest essentially on the increased prevalence of cardiovascular risk factors and the increased tendency for these factors to cluster together. These cardiovascular risk factors include hypertension, obesity, diabetes mellitus, (impaired glucose tolerance), dyslipidaemia, reduced activity and lack of exercise. Concerted effort at combating these risk factors has been shown to lead to reduction in cardiovascular disease burden.

Most of our patients had hypertension as the primary aetiology especially in cases of cerebrovascular diseases, congestive cardiac failure and chronic kidney disease and it is a known fact that hypertension is the commonest cause of these diseases in Africa especially in Nigeria<sup>16,17,18</sup>. Diseases such as Chronic Kidney Disease were also common during this period. This is not unexpected in view of the fact that the hospital is one of the major referral centres for kidney diseases in the South Western part of the country as it provides specialist care by way of renal replacement therapy to close to 6 million people. The high number of other cases seen during this period suggests that with better funding and motivation of the workforce, other eight general hospitals around a 1-25 km radius could equally have managed these cases successfully.

It was also observed that a large percentage of the admissions were elderly (> 60 years of age). This is an agreement with other studies that have shown that elderly people account for a significant proportion of medical admission disease burden even in developed countries<sup>19</sup>. Average life expectancy has increased remarkably in the last decades. There is therefore a need for appropriate geriatric care for the population. This is due to a variety of factors, it is known that many risk factors for cardiovascular disease are more prevalent in the elderly<sup>20</sup>, the elderly patients also constitute a significant proportion of in-patient medical admission and lastly the rising number of the elderly in our population.

In conclusion, non-communicable diseases account for a significant proportion of medical admission over a three year period with the elderly accounting for a significant proportion. There is thus a need for intensification of primary preventive strategies for cardiovascular and other non-communicable diseases. The capacity of secondary health facilities should also be strengthened to accommodate less severe medical cases thereby easing pressures off tertiary institutions with limited number of specialized personnel. Lastly, a holistic care for the elderly in the population is advocated.

## REFERENCES

- Omran AR (1971). The Epidemiological Transition: A theory of the Epidemiology of Population change. Millbank Memorial Fund Quarterly. 1971; 49:509-538
- The Epidemiologic Transition Theory. A Preliminary Update. J of Trop Paed. 1983; 29:6305-6316
- Reddy KA, Yusuf S (1998). Emerging Epidemic of Cardiovascular Disease in Developing Countries. Circulation 1998; 97: 596 – 601
- Sanya EO, Akande TM, Opadijo G, Olarinoye JK, Bojuwoye BJ (2008). Pattern and outcome of medical admission of elderly patients seen at the university of Ilorin Teaching Hospital, Ilorin. Afr J Med Med Sci. 2008; 37(4): 375-381
- Ogun SA, Adelowo OO, Familoni OB, Jaiyesimi AE, Fakoya EA (2000). Pattern and outcome of medical admission at the Ogun State University Teaching Hospital, Sagamu- a three year review. West Afr J Med. 2000;19(4)-304-308.
- Odenigbo CU, Ogujiofor OC (2009). Pattern of medical admission at the Federal Medical Centre, Asaba – A Two Year Review. Nig J Clin Pract. 2009; 12 (4): 395-397.
- Ike SO (2008). The Pattern of admission into the Medical Wards of the University of Nigeria Teaching Hospital, Enugu. Nig J Clin Pract. 2008; 11(3):185 -192.
- Ansa VO, Ekott JU, Bassey EO (2008). Profile and outcome of cardiovascular admissions at the University of Uyo Teaching Hospital, Uyo – A five year review. Niger J Clin Pract. 2008; 11(1):22-24.
- Pearson TA, Jamison DT, Tergo-Gauderies J (1993). Cardiovascular Disease. In: Jamison DT, Mosley WH eds Disease Control Priorities in Developing Countries. New York, NY: Oxford University Press; 1993.
- World Health Organization (1997). The World Health Report 1997. Conquering, Suffering, Enriching Humanity. Geneva: WHO; 1997.
- World Health Organization (2002). The World Health Report 2002. Reducing risks promoting healthy life. Geneva: WHO 2002.
- Whetton PK, Brancati FL, Appel LJ, Klag MJ (1995). The challenge of hypertension and atherosclerotic cardiovascular disease in economically developing countries. High Blood Press 1995; 4:36-45.
- Thom TJ, Epstein FH, Feldman JJ, Leaverton PE (1992). Total

Adelekan TA, Akinsola A (1998). Hypertension, induced Chronic Renal mortality from Heart Disease, Cancer and Stroke from 1950 to 1987 in 20 countries: Highlights of trends and their inter-relationships among causes of Death. Washington DC: US DHHS PHS, National Institute of Health; NIH Publication No. 92-3088, 1992

Kadiri SO (2005). Tackling cardiovascular disease in Africa. *BMJ* 2005; 331:711-712.

Murray CJL, Lopez AO (1994). Global comparative assessment in the Health Sector. Geneva, Switzerland: World Health Organization; 1994.

Amoah AGB, Kallen C (2000). Aetiology of heart failure as seen from a National Cardiac referral centre in Africa. *Cardiology*. 2000; 93:11-18.

Failure: Clinical features, management and prognosis. *West Afr J Med*. 1998; 17(2):104-108.

Akinwusi PO, Okunola OO, Opadijo OG, Akintunde AA, Ayodele OE, Adeniji AO (2009). Hypertensive heart failure in Osogbo, South Western Nigeria: Clinical presentation and outcome. *Nig Med Pract*. 2009;56: 5-6:53-56

McLigeyo SO (1993). The pattern of geriatric admission in the medical wards at the Kenyatta National Hospital. *East Afr Med J*. 1993 Jan. 70(1):37-39.

Onwuchekwa AC, Asekomeh EG (2009). Geriatric admission in a developing country: Experience from a tertiary centre in Nigeia. *Ethn Dis*. 2009; 19(3):359-362