Stroke Risk Factor Profile In Nigerian African Women

B Ezeala-Adikaibe, I Onwuekwe, O Ekenze, K Madubuko, E Ofoegbu

Citation

B Ezeala-Adikaibe, I Onwuekwe, O Ekenze, K Madubuko, E Ofoegbu. *Stroke Risk Factor Profile In Nigerian African Women*. The Internet Journal of Neurology. 2009 Volume 13 Number 1.

Abstract

Background: Stroke is a growing noncommunicable disease in Africa. Though stroke accounts for a substantial number of medical and neurological admissions in Nigerian hospitals, the specific impact of stroke on women has not been well documented. Aim: This study examined the profile of risk factors in women diagnosed with stroke in South East Nigeria. Methodology: A retrospective study was done of all adult Nigerian women admitted with a diagnosis of stroke into the medical wards and casualty department of the University of Nigeria Teaching Hospital, Enugu, Nigeria. The period covered was from January 2006 to December 2008. The case notes were retrieved and appropriate data including biometrics and identified risk factors for stroke in the patients. Results: Hypertension was the commonest risk factor (49.6%), followed by age ≥ 65years (39.4%), diabetes mellitus (16.8%) and heart disease (9.2%). Morbid obesity, dyslipidaemia and HIV infection were also present in 13.2% of the patients.Conclusion: Stroke principally affects the middle aged Nigerian women, with increasing cases of stroke in the young. Despite the predominance of recognized risk factors for stroke, there is the need for clinicians to still consider under-recognized risk factors such as HIV infection.

INTRODUCTION

Stroke is the third leading cause of death in the West[1] and a growing non communicable disorder in Nigeria and the rest of Africas.[2] There are sex differences which may be related to the onset of stroke at older ages in women.[3,4] In Nigeria, though strokes accounts for 0.9 - 4% of medical admissions and 0.5 - 45% of neurological admissions.[5-6] more studies are needed on the specific impact of stroke on women. This study reviewed the profile of risk factors as seen in South East Nigerian women with stroke. It also assessed the possible impact of lifestyle changes in these cases.

METHODOLOGY

The case notes of female patients aged ≥ 18 years, who were admitted with a diagnosis of stroke into the medical wards and casualty department of University of Nigeria Teaching Hospital, Enugu (UNTH) were reviewed. The study period was three years, from January 2006 – December 2008. UNTH is the biggest teaching hospital located in the outskirts of Enugu, the regional centre in South East Nigeria.

The clinical criteria for the diagnosis of stroke were reviewed from the case notes; a history of hypertension (or use of antihypertensive medications), migraine, previous stroke, heart disease (including atrial fibrillation and angina), and intermittent claudication was noted. A history of alcohol consumption (type, duration and quantity) and substance abuse (cocaine, heroin, marijuana e.t.c), use of oral contraceptive pills as well as tobacco usage were also documented. Patients' admission plasma glucose levels and lipid profile were recorded. The Siriraj Stroke Score[7] was used to classify patients into the various stroke-types. Patients with incomplete records were excluded.

Data obtained was manually sorted out, coded and entered into a personal computer for analysis using the Statistical Package for Social Sciences (SPSS) version 16.

RESULTS

One hundred and nineteen stroke cases met the required criteria and were analyzed. This number represented 0.7% of all hospital admissions within the period under review. The mean age was 61.08 years ± 13.21 years and the age range was from 25 to 90 years. More than 60% of the patients were ≤ 65 years of age. The age distribution is shown in table 1.

The mean hospital stay was 19.3 days and ranged from 0-180 days. Most of the patients were discharged alive 73(61.3%) while 46(38.7%) died. The odds ratio of death in patients with hemorrhagic stroke was 3.577 (95% CI = 1.524 - 8.394).

Thirty one (26.1%) patients had no risk factors recorded in their case notes. A single risk factor was recorded in 54 (45.4%) patients while 34 (28.6%) patients had two or more risk factors. The commonest risk factors were hypertension 59(49.6%), age ≥ 65 years 38(39.5%) and diabetes 20(16.8%). The risk factors are shown in table 2.

Based on the Siriraj Stroke Score 70 cases (58.8%) were ischaemic, 31 cases (26.1%) hemorrhagic while 18 cases (15.1%) were indeterminate. Forty two (35.3%) patients had abnormal random plasma glucose ≥ 200mg/dl. The identified risk factors are shown in table 3.

Figure 1

Table 1. Age distribution of stroke patients.

Age	<46	46-65	≥65	total
Number	18	54	47	119
%	15.2	45.4	39.5	100

Figure 2

Table 2. Clinical Characteristics of patients with stroke.

	Number	%
Discharged	73	61.3
Died	46	38.7
Ischemic stroke	70	58.8
Hemorrhagic stroke	31	26.1
Indeterminate stroke	18	15.1
Age <65 years	72	60.5
Age ≥65 years	47	39.5
No risk factor	31	26.1
One risk factor	54	45.4
>2 Risk factors	34	28.6
RBS <200mg/dl	77	64.7
RBS≥200mg/dl	42	35.3

Figure 3

Table 3. Identified risk factors for stroke.

Risk factor	Number	%
Hypertension	59	49.6
Age ≥ 65 years	38	39.4
Diabetes mellitus	20	16.8
Heart disease	11	9.2
↑TC (> 6.18 mmol/L)	12	10.1
Previous stroke	9	7.6
↑LDL (> 4.11 mmol/L)	6	5
↓HDL (1.03mmol/L)	6	5
Family history of stroke	5	4.2
HIV infection	4	3.4
Chronic kidney disease	1	0.8
Morbid obesity	1	0.8

DISCUSSION

This study has revealed the possibility of a changing risk factor profile in Nigerian women and the possible impact of our changing lifestyle on stroke risk.

Previous studies have shown the prevalence rate of hypertension to be 48 - 83% among stroke patient in African Blacks.[5,8-10] These earlier studies were from a mixed population of men and women. In Nigeria, hypertensive women may have poor blood pressure control and are be less likely to be treated because of socio-economic reasons. Reports from the developed countries[11] also show women have poorer blood pressure control though the reasons maybe different. A recent study has shown that the effects of blood pressure reduction on cardiovascular events may be different for the sexes, particularly at a younger age.[12] The diagnosis and treatment of hypertension will alter the burden of stroke among women in our society and impact positively on the morbidity and mortality rates of stroke.

The prevalence of stroke among women with diabetes mellitus has been put at 0.9%.[13] Data suggest the prevalence of obesity and in Nigerian women to be 6%[14] compared to 0.4%[14] in men. The issues of diet and lifestyle in stroke have been well documented and reflect the growing prevalence of obesity and dyslipidaemia in the society.[13] Because the protection from cardiovascular disease found in non-diabetic women is lost in the presence of diabetes mellitus, the changing lifestyle among Nigerians will not only impact on stroke directly but also through the growing incidence and prevalence of type II diabetes mellitus. The high rate of hypertension, diabetes mellitus and rising prevalence of dyslipidemia[15,16] among Nigerian women of child bearing age raises the issue of stroke in women during pregnancy.

The absence of smokers in our study population reflects the very low prevalence among women in Africa where there is still a strong negative attitude to smoking among women.[17,18]

This study supports the higher prevalence of stroke among young African women than in the West. This may be explained by the higher prevalence of hemorrhagic stroke and a higher overall mortality among Africans.[19-22] Studies have shown that 10 - 27.6% of strokes among Africans occur in the young of both sexes,[18-21] a finding also reflected in our study. The high rate of young patients with stroke in this instance may be due to teaching hospital admission bias.[23] Furthermore, hemorrhagic strokes occur at an earlier age in populations undergoing epidemiological transition such as ours[24] and are usually severe. Hence such are more likely to be admitted and investigated. The wide disparity in stroke prevalence in the young is difficult to explain, but with changes in life style, urbanization and increasing prevalence of cardiovascular risk factors, this trend is likely to worsen.

In this study 60.5% of the patients were <65 years showing the high frequency of stroke in the economically active women. It is possible that cultural differences and ethnic/ genetic differences affect both diet, health seeking behaviors and the prevalence of stroke risk factors both within and between different regions of Nigeria. With a mean age of 61.08 ±13.21 years, and 39.4% of the patients being 65 years and above, our findings are comparable with other studies elsewhere in Nigeria.[5-6,8-10]

The contribution of HIV infection to stroke in Nigerian subjects is yet to be fully documented. The burden of HIV infection has modified the risk factors of several disorders including stroke. A minor percentage of our patients were positive for HIV infection. The possible explanation for this could be the relative lower prevalence in Nigeria,[25] furthermore retroviral screening is yet to become a routine investigation in stroke patient especially in those with perceived low risk.

This study had to contend with some limitations. Poor record keeping accounted for the loss of some case notes. Some patients were attended to by non- neurologists/ non-specialists, so the risk factor profiles may not be completely reliable. Poor clinical reviews could include stroke mimics especially with the high cost of CT-scanning in the institution. Hospital-based stroke studies are also unlikely to reflect the stroke incidence in the community.

CONCLUSION

There is high proportion of the young and middle aged subjects among female stroke patients in South East Nigeria as well as a growing impact of dyslipidaemia and HIV infection on stroke in women. There should be an increased emphasis by clinicians on thoroughly investigating patients with a view to ascertaining various risk factors for stroke in order to make for comprehensive management including secondary prevention.

ACKNOWLEDGEMENTS

The assistance rendered by the Medical Records Department of the University of Nigeria Teaching Hospital Enugu in the collection of data is deeply appreciated.

CONFLICTS OF INTEREST

None declared.

ETHICAL APPROVAL

Hospital Ethical approval was received.

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Author Information

B A Ezeala-Adikaibe
Department of Medicine, Neurology Unit, University of Nigeria Teaching Hospital

I O Onwuekwe
Department of Medicine, Neurology Unit, University of Nigeria Teaching Hospital

O I Ekenze
Department of Medicine, Neurology Unit, University of Nigeria Teaching Hospital

K Madubuko
Department of Medicine, Neurology Unit, University of Nigeria Teaching Hospital

E N Ofoegbu
Department of Medicine, Endocrinology Unit, University of Nigeria Teaching Hospital