

## The Prevalence and Major Risk Factors and Presentation Among Patients with Stroke in Atbara Teaching Hospital During the Period from February 2021 to April 2022

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**Abstract:** **Background:** CVA is the loss of brain function due to a disturbance in the blood supply of the brain. This disturbance is due to either ischemia or hemorrhage. **Aim:** To study the major risk factors & presentation among patients with stroke in Atbara teaching hospital. **Methodology:** Cross-sectional descriptive hospital based study was conducted in Atbara teaching Hospital from February 2021 to April 2022. The data was collected by interviewing the patients through a closed-ended questionnaire and analyzed by using the statistical computerized program SPSS. **Results:** In our study, we found that 86.2% of study group their age group was more than 51 years and most of them are males, 73.1% of them had a hemiplegic weakness, 60.8% of them had a transient ischemic stroke, 90% had an ischemic stroke, 66.9% with one attack of stroke, 77.7% of them have a chronic illness, 53.1% have diabetes, 63.8% have hypertension, 28.5% of them have ischemic heart disease, 23.8% have atrial fibrillation, 11.5% have the valvular disease, 35.4% of them are smokers and 6.9% are drinking alcohol. **Conclusion:** The study concluded that stroke increased with age above 51 years old and most commonly in males. The most common risk factor is HTN, DM, and heart disease. The common risk bad habit in strokes patients is smoking.

**Keywords:** Stroke, Heart disease, Risk Factors, Prevalence, Atbara, Sudan.

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### INTRODUCTION

More than 2,400 years ago the father of medicine HIPPOCRATES recognized and described stroke as the sudden onset of paralysis. The first person who investigated the pathological sign of stroke was JOHANN JACOB WEPFER by identifying the postmortem signs of bleeding in the brain of the patient who died of stroke from autopsy studies. Cause other than a blood clot, the obstruction of the main arterial supply of the brain. Stroke is the second commonest cause of death (9%) and a major cause of disability World-wide. Although data are difficult to obtain, approximately two-thirds of the global burden of stroke surveillance are in middle- and low-income countries. WHO has introduced a stroke surveillance study in developing countries (STEPS surveillance). The age-adjusted annual death rate from strokes is about 200 per 100,000 in the UK (12% of all deaths). Rates are higher

in Asian and black African populations than in Caucasians. Stroke is uncommon below the age of 40 and commoner in males. The death rate following stroke is 20-25%. Hypertension is the most treatable stroke risk factor; the stroke is decreasing in the 40-60 age group because hypertension is treated. In the elderly, it remains a major cause of morbidity and mortality. Thromboembolic infarction (80%), cerebral and cerebellar hemorrhage (10%), and SAH (about 5%) are the main causes; of arterial dissection and arteriovenous malformations [1].

A stroke, also known as (CVA), is a rapid loss of brain function(s) due to a disturbance in the blood supply to the brain. Stroke means weakness usually permanent on the side, often with loss of speech. Stroke is defined as a symptom of rapid onset of cerebral deficit (usually focal) lasting less than 24 hours or

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leading to death, with no cause apparent other than a vascular one [1]. Stroke is frequently devastating and, particularly during working life, alters radically the patient's remaining years. May become unemployable, lose independence, and is financially embarrassed. Loss of self-esteem makes depression common. At home, aids and alterations may be needed: stair and bath rails, portable lavatories, hoists, sliding boards, wheel chairs, tripods, stair lifts, electric blinds and modified sleeping arrangements, kitchen, steps, flooring, and doorways. Liaison between hospital-based community care teams and primary care physicians is essential [2]. About 75% of patients survive the acute stage of focal stroke due to cerebral infarction or primary intracerebral hemorrhage. The immediate mortality of aneurismal subarachnoid hemorrhage is 50% with a recurrence rate of 50% in the first 6 months and 3% annually thereafter. Secondary prevention requires appropriate neurosurgical management. Half two-quarters of those surviving and acute achieve functional independence, mostly within the first 3 months after a completed focal stroke there is an annual recurrence rate of 8% - 11%. Secondary prevention of stroke involves attention to the risk factor which is reversible and, in the case of ischemic stroke is minimal, that patient should be managed in the same way as for transient stroke [2].

## MATERIALS AND METHODS

**Study Design:** A cross-sectional descriptive hospital based study was done in Atbara Teaching hospital during the period from February 2021 to April 2022.

**Study Area:** Atbara teaching hospital. Atbara teaching hospital is situated in the western North of Atbara town, it's about 14292 meters, and it was built in 1904 during the period of the English government. It consists of wards and refers to clinics for surgery, medicine, pediatrics and obstetric specialtie ,the center of dialysis, and another for diabetes, casualty, CCU, and ICU. There are about two laboratories and three pharmacies, and other services such as x-rays and ultrasound. The study was done among patients who attended the Medicine unit which is one department in the hospital. it is well equipped and it includes Ten consultants, many medical officers, and four wards.

**Study sample:** 130 patients from Atbara teaching hospital.

**Data collection:** The information was collected from the patients by direct interviewing with the questionnaire.

**Data processing:** The data were analyzed by using the statistical computerized program SPSS (statistical package of social sciences) version 21.

## Ethical consideration & clearance

A formal letter from Nile valley university faculty of medicine department of community medicine to the director of Atbara teaching hospital from whom we received written consent to conduct the research. Written consent to the patients for purpose of the study and response.

## RESULTS

**Table 1: The distribution of study group according to age**

Age	Frequency	Percent
20-30	2	1.5%
31-40	5	3.8%
41-50	11	8.5%
More than 51	112	86.2%
<b>Total</b>	<b>130</b>	<b>100%</b>

**Table 2: The distribution of study group according to Residence**

Residence	Frequency	Percent
Atbara	66	50.8%
Aldmmer	25	19.2%
Abu Hamad	10	7.7%
Barbra	23	17.7%
Others	6	4.6%
<b>Total</b>	<b>130</b>	<b>100%</b>

**Table 3: The distribution of study group according to Occupation**

Occupation	Frequency	Percent
Free business	77	59.2%
Retired	5	3.8%
Employee	19	14.6%
House wife	29	22.3%
<b>Total</b>	<b>130</b>	<b>100%</b>

**Table 4: The distribution of study group according to Type of weakness**

Type of weakness	Frequency	Percent
Monoplegia	17	13.1%
hemiplegia	95	73.1%
Quadriplegia	18	13.8%
<b>Total</b>	<b>130</b>	<b>100%</b>

**Table 5: The distribution of study group according to Type of stroke**

Type of stroke	Frequency	Percent
Ischemic stroke	117	90%
Hemorrhagic stroke	13	10%
<b>Total</b>	<b>130</b>	<b>100%</b>

**Table 6: The distribution of study group according to have chronic diseases**

Chronic diseases	Frequency	Percent
Have	101	77.7%
Have not	29	22.3%
<b>Total</b>	<b>130</b>	<b>100%</b>

**Table 7: The distribution of study group according to duration of diabetes mellitus of strokes patients**

Duration of diabetes mellitus	Frequency	Percent
1-5 years	6	8.8%
6-10 years	16	23.1%
More Than 11 years	47	68.1%
<b>Total</b>	<b>130</b>	<b>100%</b>

**Table 8: The distribution of study group according to the continuity of diabetes treatment**

Continuity of diabetes treatment	Frequency	Percent
Continue	44	63.8%
Not Continue	25	36.2%
<b>Total</b>	<b>130</b>	<b>100%</b>

**Table 9: The distribution of study group according to patients have hypertension**

Hypertension	Frequency	Percent
Have	83	63.8%
Have not	47	36.2%
<b>Total</b>	<b>130</b>	<b>100%</b>

**Table 10: The distribution of study group according to Follow up on hypertension**

Follow up on hypertension	Frequency	Percent
Weekly	1	1.2%
Irregular	59	71%
Monthly	23	27.8%
<b>Total</b>	<b>83</b>	<b>100%</b>

**Table 11: The distribution of study group according to Number of hypertensive drugs used**

Number of hypertensive drugs	Frequency	Percent
One drug	33	39.8%
Two drugs	36	43.4%
More than Two drugs	14	16.8%
<b>Total</b>	<b>83</b>	<b>100%</b>

**Table 12: Distribution of study group according to Types of drugs**

Types of drugs	Frequency	Percent
Anti-platelet	24	18.5%
Lipid Lowering agents	11	8.5%
Anti-coagulant	43	33%
Anti-platelet+ Lipid Lowering agents	52	40%
<b>Total</b>	<b>130</b>	<b>100%</b>

**Table 13: Distribution of study group according to patients have atrial fibrillation**

Hypertension	Frequency	Percent
Have	31	23.8%
Have not	99	76.2%
<b>Total</b>	<b>130</b>	<b>100%</b>

**Table 14: Distribution of study group according to smoker patients**

Smoke	Frequency	Percent
Smoker	46	35.4%
Not Smoker	84	64.6%
<b>Total</b>	<b>130</b>	<b>100%</b>

## DISCUSSION

A cross-sectional descriptive hospital-based study was done at Atbara teaching hospitals among 130 patients during the study period. The study revealed that: The results of the research indicate that 86.2% of patients are more than 51 years because the arteries naturally become narrow and harder with elderly age and are more likely to become clogged with atherosclerosis, while 13.8% less than 51 years which corresponding to studying done by: Tag-Eldin O Sokrab and *et al.*, which revealed that the peak age group was 61 to 80 years. 66.2% of the study group is males and 33.8% are females because females have estrogen which protects females from atherosclerosis which corresponds to a study done by: Tag-Eldin O Sokrab *et al.*, which revealed that Ninety-six patients, 56 males, and 40 females, were studied. And contradict a study done in Khartoum, the capital city of Sudan which revealed that 46% of the study group is male and 54% female. According to the type of weakness, hemiplegia is the most common type (73.1%), due to the damage to the corticospinal tract in one hemisphere of the brain usually. Concerning the pattern of stroke, 60.8% have a transient ischemic stroke, as a result of a clot of blood that leads to a block or narrowing of the arteries leading to the brain, while 39.2% have a complete stroke. The type of stroke, 90% ischemic stroke (infarction) and 10% hemorrhagic stroke corresponds to a study done by: Tag-Eldin O Sokrab *et al.*, which revealed that stroke caused by infarction was found in 58.3% while stroke caused by hemorrhage was found in 41.6%. 63.8% of patients with stroke have hypertension, because high blood pressure leads to damage to the blood vessel wall and makes them weaker, which corresponds to studying done by: Tag-Eldin O Sokrab *et al.*, which revealed that hypertension was the most common associated risk factor. Regarding patients with stroke, 53.1% of them have diabetes, because diabetes makes arteries more likely to get clogged up, which contradicts a study done by: Sridhar Amalkakanti *et al.*, which revealed that the prevalence of diabetes is 17% in stroke patients. 28.5% of patients with stroke suffer from ischemic heart disease, due to hypokinesia of heart muscles causing stasis of the blood, 23.8% suffer from atrial fibrillation due to a clot forming in the heart causing stroke and 11.5% have the valvular disease. In this study group, 53.4% are smokers, and 6.9% are drinking alcohol; there has a direct effect on the blood vessels (affecting collagen).

## CONCLUSION

The stroke increased with age above 51 years old and most commonly in males. The most common risk factor is HTN, DM, and heart disease. Most patients have uncontrolled HTN and DM. Most patients have a long duration of HTN and DM. The common risk bad habit in strokes patients is smoking.

## RECOMMENDATION

- 1) The state ministry of health and primary health care unit should increase awareness of the population about risk factors and the importance of early management through mass media.
- 2) State ministry of health should introduce CT scans in hospitals for early diagnosis of stroke and differentiate between hemorrhage and infarction.
- 3) Introduce the ministry of health's specialized stroke rehabilitation unit and physiotherapy.
- 4) Screening for non-communicable disease for early primary health care, so great efforts must be done to decrease the prevalence of stroke in our locality

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