

# Epidemiological Profile of Vascular Encephalic Accident (VEA) Victims Hospitalized In A Regional Hospital of Paraíba, Brazil

ORIGINAL

Jordeyanne Ferreira de Oliveira<sup>1</sup>, Elicarlos Marques Nunes<sup>2</sup>, Renata Santos Carvalho<sup>1</sup>, Cristina Costa Melquíades Barreto<sup>3</sup>, Robéria da Silva Carvalho<sup>1</sup>, Josseana Dias de Oliveira<sup>1</sup>, Bianka Pereira Evangelista<sup>1</sup>, Alexandre Firmino de Araújo Neto<sup>4</sup>, Maria da Glória Leite Mota<sup>1</sup>, Denisy Dantas Melquíades Azevedo<sup>5</sup>, Ana Paula Dantas da Silva Paulo<sup>6</sup>, Juliane de Oliveira Costa Nobre<sup>3</sup>, Edmara da Nóbrega Xavier Martins<sup>7</sup>, Érica Surama Ribeiro César Alves<sup>3</sup>, Allan Martins Ferreira<sup>8</sup>

## Abstract

**Introduction:** Responsible for a high mortality rate and for causing numerous sequels in the general population, stroke arises from a deficiency in cerebral oxygen supply, commonly caused by obstruction of the arteries or extravasation of blood for the tissue. Genetic factors, style and quality of life are factors directly related to the incidence of stroke and its numerous hospitalizations.

**Objective:** The study aimed to describe the epidemiological profile of hospitalized patients after clinical diagnosis of stroke.

**Methods:** This is a retrospective study, with a quantitative approach, carried out through the analysis of 252 medical records of patients hospitalized in the Medical Clinic and in the Mixed Stroke Unit of the Deputado Janduhy Carneiro Regional Hospital, in the municipality of Patos - PB, in the period of January 1 to December 31 2015. All medical records of patients affected by stroke in 2015 were included; internal with clinical diagnosis of stroke; Computed Tomography of Skull; Neurologist's evaluation; and readable handwriting. Data were collected using a questionnaire with objective questions, including variables related to the objective of study. They were submitted to simple statistical analysis and later, discussed and related to the literature from the reading and the comprehension of the researchers.

- 1 Nurses graduates by the Faculdades Integradas de Patos, Brazil.
  - 2 Nurse. Master in Public Health. Teacher in the Nursing Department of \*.
  - 3 Nurse. Master in Health Sciences. Teacher in the Nursing Department of \*.
  - 4 Doctor Neurologist, Otoneuro Clinic. Patos, Paraíba, Brazil.
  - 5 Nurse. Specialist in ICU and nursing work. Teacher in the Nursing Department of \*.
  - 6 Nurse. Master in Nursing. Teacher in the Nursing Department of \*.
  - 7 Nurse. Urgent and Emergency Specialist and nursing job. Teacher in the Department of \*.
  - 8 Nurse. Urgent and Emergency Specialist. Teacher in the Department of \*.
- \*: Nursing of the Faculdades Integradas de Patos, Paraíba, Brazil.

## Contact information:

**Elicarlos Marques Nunes.**

**Address:** Av. Horácio Nóbrega, Bairro Novo Horizonte, Patos, PB.  
CEP 58.704-000.

✉ [elicarlosnunes@yahoo.com.br](mailto:elicarlosnunes@yahoo.com.br)

**Results:** It was observed that the affected victim is woman, over 70 years of age, brown, living in an urban area and retired. The most frequent etiology of the stroke is of the ischemic type, being able to notice preexisting diseases in the patients, such as Arterial Hypertension and Heart diseases. 42% of patients were discharged after treatment in less than 15 days (78%). By causing many deaths and disabilities, bringing not only human, but social and financial damage to the health and social security system.

**Conclusion:** More and more studies are needed to diagnose the causes of stroke, consequences and possible decisions that attenuate this problem.

**Keywords**

Vascular Encephalic Accident;  
Hospitalization; Prognosis.

## Introduction

The Stroke is an evil that has been growing in our country. When it does not kill, it leaves irreversible sequelae in the patients, thus compromising their quality of life. The causes are many, among them, genetic predisposition and modern and disordered lifestyle, all associated with risk factors such as systemic arterial hypertension (SAH), diabetes mellitus (DM) and smoking. In addition to cognitive impairments, the damages caused to the health of the affected person are also physical, such as motor and sensory damages that alter their daily activities and leave them partially or totally dependent on other individuals.

It can be defined as a rupture or obstruction of vessels that carry blood to the brain, causing paralysis of the affected area, that has left without sufficient oxygenation. It is also known as "Stroke", and is the main cause of disability and mortality among the elderly [1].

State that the stroke is a temporary or permanent deficit, caused by the alteration of blood circulation in the brain, which damages it in one or more parts. It has ischemic and hemorrhagic etiology (bleeding due to rupture of a blood vessel), and may compro-

mise all neurological functions [2]. The ischemic has been reported in the literature as the most frequent, reaching 70% of the individuals, in relation to the hemorrhagic [3].

After suffering a stroke, more than half of individuals may have six to ten types of limitations, with muscle weakness being the most prevalent, present in 77.4% of the patients. There may also occur communication and language disorders, as well as dysphagia and other disabilities [4]. According to the International Classification of Functioning, Disability and Health (CIF) of the World Health Organization (WHO), disability is the restriction resulting from a disability or lack of ability to perform activity considered normal for the human being.

It is important to identify factors associated to mortality for stroke. Clinical characteristics such as age, sex, excess of body fat, Diabetes Mellitus (DM) and Systemic Arterial Hypertension (SAH) are considered to be strong risk factors. However, another major cause of this pathology is related to the inadequate food habit, which has a close relation with the health-disease profile of each individual [5].

According to WHO [6], 10 million of people suffer from stroke worldwide each year. Of these, five

million die and another five million are left with irreversible sequelae. The increase of the rates of obesity, sedentary lifestyle and unhealthy diets (which increase the risk of clots) are some of the culprits for the growth in the number of cases.

The present study emerged from the need to understand the dynamics with which the cases of stroke present in our regional of health. As a growing problem in our country, the VEA has an important impact on public spending. Therefore, all efforts to understand, map and monitor of this disease were valid, since it provided new information of a local nature, which was incorporated into regional and national information and, therefore, showed a reinforcement in the fight against this disease.

The study allowed a deepening in the subject, where it will serve as a source of information for academics, professionals and researchers, as well as a way to find methods and strategies that can reduce or soften this health problem that is present in our environment: the Vascular Encephalic Accident (BIRD). The compendium produced will guide new studies related to the theme, mainly for the exploratory character, which outlined the epidemiological profile of the disease in the city of Patos - Paraíba and region included in the 6<sup>th</sup> Regional of Health.

The objective of this study was to describe the epidemiological profile of patients admitted to the Regional Hospital of Patos - Paraíba, as well as to identify the main type of stroke and its prognosis.

## Method

The sample consisted of 252 medical records of patients affected and hospitalized at the above mentioned hospital, which corresponds to 100% of all hospitalizations due to stroke in 2015. Considering some data from the Ministry of Health [7], which indicate that 10% Of the hospitalizations in the country are related to cardiovascular diseases, it was observed through data from the hospital, that

the hospital received and hospitalized in the year of 2015, 8,588 patients, among them, some with cerebrovascular disease. The sample was calculated from the "Analysis of Sampling Calculus" [8], which uses the calculator to know which sample is needed in a simple random sampling survey on categorical variables. The confidence level of the survey of 95% represents the probability that the sample collected reflect the population. The hospitalizations were for the period from January 1 to December 31, 2015.

There were included all the medical records of the patients affected by stroke treated and hospitalized at the Patos Regional Hospital from January to December 2015; Those who had in their description the clinical diagnosis of stroke; Those who have Cranial CT and evaluation of the neurologist, which makes it possible to confirm the diagnosis; Those of easy understanding and legible handwriting.

Data were collected using a questionnaire with objective questions, which included some variables such as socio-demographic, economic data, diagnosis, type of stroke and other data related to the objective of the study. Data were collected between May and June 2016, at an appropriate time for the staff of the hospital archive, where the records were randomly reviewed and chosen, then analyzed individually for the study variables.

From on the adopted objectives, the collected data were submitted to simple statistical analysis and made available through tables and/or charts, with the help of the Excel Office 2010 program. Later, they were discussed and related to the literature based on the reading and comprehension of the researchers.

The research project was forwarded and approved by the Ethics and Research Committee of the Patos Integrated College through the CAAE: 56543816.6.0000.5181, located in the municipality of Patos - PB, from Brasil Platform, in which it obtained legal consent to carry out the research in light of ethical principles. The research was guided

considering the ethical aspects in research involving human beings, as described in Resolution 466/12 of the National Health Council, which regulates research involving human beings [9]

## Results and Discussions

It can be observed in **Table 1** that 44.05% (111) of the individuals affected by stroke are males, while 55.95% (141) are females. According to the age group, it was observed that 1.59% (4) of the patients were in the range between 31 and 40 years; 5.16% (13) with ages ranging from 41 to 50 years; 9.92% (25) between 51 and 60; Another 17.85% (45) between 61 and 70 years; And 65.48% (165) were older than 70 years.

It is noted from the data that the distribution of stroke patients is predominantly female. Find in their studies a percentage of 60.3% for the female sex, confirming the results of the present study [10].

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The erroneous or exaggerated use of hormones as contraceptive methods, as well as pregnancy itself, can sometimes directly affect events that alter blood pressure, thus making the female gender more vulnerable to stroke [11].

As for age, we know that the physiological process of aging leads to the emergence of diseases. Cardiopathies and Systemic Arterial Hypertension (SAH) are two of the causes that corroborate with the appearance of stroke, which also affect older patients. These numbers subsidize and reinforce the need for a reeducation in health by this group, since the VEA is one of the main causes of death in the elderly in our country [12].

The cerebrovascular diseases affect more people 50 years of age and have a major negative effect on numbers above 65 years of age. The same authors attribute this fact to the natural functional decline

**Table 1.** Socio-demographic data of the sample (N = 252).

Sample socio-demographic data	Specifications	
	Frequency (f)	%
Genre		
Male	111	44.05
Female	141	55.95
Age group		
31 - 40 years	4	1.59
41 - 50 years	13	5.16
51 - 60 years	25	9.92
61 - 70 years	45	17.85
More than 70 years	165	65.48
Race		
White	66	26.2
Black	2	0.8
Brown	184	73
Provenance/home		
Urban area	195	77.38
Rural Area	57	22.62
Profession/occupation		
Farmer	17	6.74
Retired/Pensioner	195	77.38
From home	18	7.14
Civil Construction	3	1.2
Trade/Industry	6	2.38
Public agent	6	2.38
Military	2	0.8
Driver	2	0.8
Teacher	3	1.2
Total	252	100

**Source:** Research data, 2016

that affects the human being as the age advances [13].

Regarding race, 26.2% (66) of the inmates with stroke are white, while 0.8% (2) are black, and 73% (184) are brown. Contrary to the study, several studies have shown that black people have a greater predisposition for hypertension, which would also contribute to a higher rate of stroke among this racial group [14].

The percentage of black people with hypertension is higher; To explain this phenomenon, it is observed the metabolism of sodium, which plays a preponderant role in regulating blood volume and tension balance, as well as genetics by the first blacks who landed as slaves in the Americas [15].

As to the origin of the patients, it was evident that 77.38% (195) lived in urban centers, while 22.62% (57) lived in rural areas. In this sense, it is noted that contemporary life in cities contributes to the increase in these numbers, since stress, pollution, agitated life and the need to work with hours beyond the recommended lead to metabolic imbalances associated with poor diet and other factors that may increase the causes of stroke.

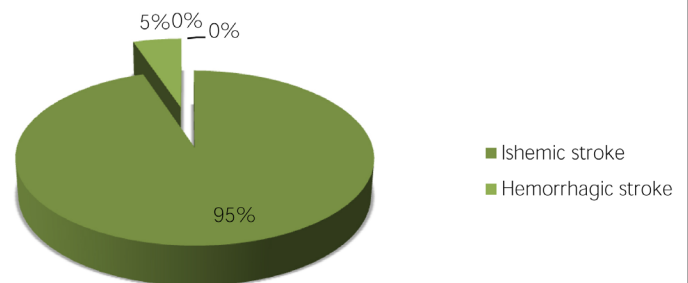
In relation to the profession, 6.74% (17) are farmers; 77.38% (195) retired; 7.14% (18) domestic; 1.2% (3) are employed in construction and respectively the same percentage are the teachers; 2.38% (6) are civil servants or work with trade and industry; and 0.8% (2) share the same percentage between military and drivers.

In general, professions that subject the individual to stressful conditions are more likely to cause or assist in the factors that cause stroke, as well as the factors related to the psychological and the way the individual handles to his work [16].

According to the data shown in **Figure 1**, it is noted that 95% (239) of the victims admitted and hospitalized in the hospital under study were affected by ischemic stroke, and only 5% (13) of hemorrhagic stroke. It can be seen that the number of ischemic stroke is many times superior to that haemorrhagic stroke, this may be justified by the current lifestyle of people, where many have several risk factors for such pathology, in addition to following an unregulated life of weel being, thus prone to this condition.

The Stroke is a disease closely linked to the way of life of the population. It consists of an obstruction or rupture of vessels that carry blood to the brain,

**Figure 1:** Data regarding the etiology of stroke (N = 252).



Source: Research data, 2016.

compromising part of it and, therefore, could impair several functions in the affected one [17].

The most prevalent etiology is of the ischemic type, in which occur possible obstructions of the cerebral blood vessels, thus interrupting the flow of blood from a specific region of the brain, in which it may interfere directly with the individual's speech, thus causing problems in speech and in swallowing; In gait, preventing the individual from getting around and wandering normally; Among other complications that will compromise the activities of daily living.

Through the figure, it can be shown the predominance of the ischemic stroke over the hemorrhagic. This information ratifies, although not proportionally, what reported, ten years ago, found a study similar to the present one, where there is a prevalence of 70% for the ischemic stroke [18]. In an analogous study, showed that about 80% of individuals over 60 years of age are also affected by ischemic stroke [19].

Even in view of the low numbers involving the hemorrhagic stroke, it is worth noting that this hospital has no definitive treatment for this etiology, evidenced by the absence of a neurosurgeon at the on-call scales. Thus, patients with hemorrhagic stroke are all transferred in mobile units to other referral centers, which can lead to worsening of the clinical picture and the prognosis of the users due to the long time spent in transportation.



This etiology is the consequence of an inverse phenomenon to the ischemia, where there is extravasation of blood out of the vessels, making the blood to go into the brain, causing intracerebral hemorrhage or filling the space occupied by the cerebrospinal fluid, between The brain and the arachnoid membrane, so-called subarachnoid hemorrhage (SAH).

In hemorrhagic VEA, abnormal bleeding occurs, usually as a result of an aneurysm, where there is an increase in intracranial pressure, causing damage to brain tissues due to restriction of blood flow, which usually must be reestablished through surgical treatment [20].

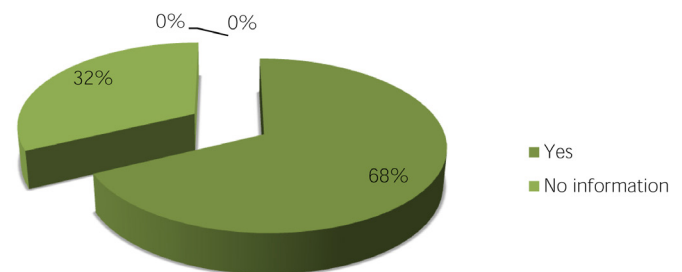
As shown in **Figure 2**, 68% (171) of the individuals affected by stroke had one or more preexisting diseases, while 32% (81) had no information on any underlying disease that was directly related to Stroke. Among the main diseases present in the studied patients are Systemic Arterial Hypertension (SAH), followed by heart diseases, such as Congestive Heart Failure (CHF) and Atrial Fibrillation (AF), and Type 2 Diabetes Mellitus (DM).

It was also observed the presence of several modifiable risk factors such as alcoholism, smoking and sedentarism. Associated with these factors, hypertension is one of the most important risk factors for the onset of cerebrovascular diseases.

It is believed that hypertensive individuals have a six to seven-fold increased risk of developing stroke than the healthy population. Already diabetic patients are twice as likely to develop the disease in both sexes. Atherosclerosis is the major cause of cerebrovascular disease; heart disease, smoking, alcoholism, sedentarism and the use of oral contraceptives are also considered risk factors [21].

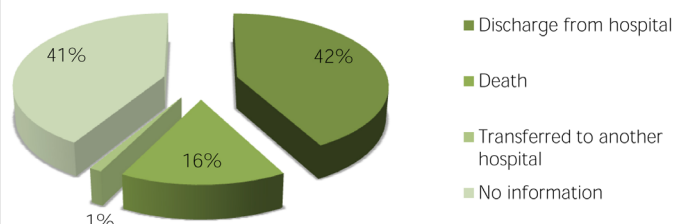
The identification and control of modifiable factors are fundamental measures in the sense of significantly reducing the incidence of the pathology, as well as its high mortality. SAH is undoubtedly also the main controllable risk factor, with relevance both the diastolic hypertension and the systolic

**Figure 2:** Data referring to the presence of preexisting diseases in the victims (N = 252).



Source: Research data, 2016.

**Figure 3:** Data regarding the fate of patients affected by stroke after initial care (N = 252).



Source: Research data, 2016.

hypertension. Numerous studies, focusing on both primary and secondary prevention of stroke, have demonstrated the usefulness of antihypertensive drugs in reducing their risk. It is important to know that early prevention is still the most effective method to avoid the appearance of morbidities [22].

According to the data in **Figure 3**, which shows the prognosis of victims affected and hospitalized with stroke, it is noted that 42% (106) of them were discharged from hospital, 16% (39) died, and 41% (104) Had an unknown destination, not known if they are discharged for improvement or if they were transferred to another hospital unit, we believe they have also been discharged from hospital, mainly due to the absence of a death certificate from the medical records observed. It was also noted that 1% (3) of the victims were transferred for treatment at another referral center.

Observing the high number of hospital discharges, we highlight the treatment offered by the

health institution, which through the data shows that it is possible to improve the patient, given that, totaling the number of discharges together with the possible improvements observed through the numbers, these total more than 80% of hospital discharge.

The hospital unit has an exclusive wing for the rehabilitation of patients suffering from Stroke (VEA). The mixed VEA unit, as it is known, is one of the pioneers in the Northeast of the country. Idealized by a neurologist doctor of the region, it represents today an advance for the health of patients admitted to the hospital.

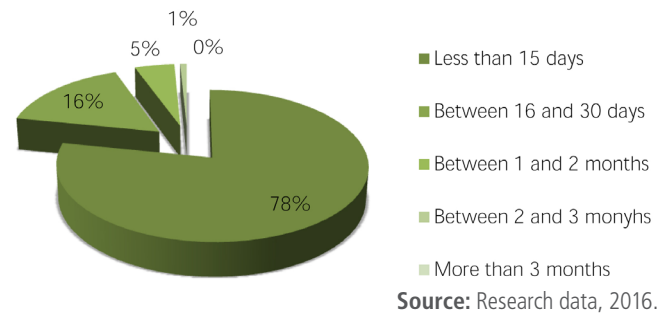
The unit has 6 (six) beds, equipped by a multidisciplinary team, formed from neurologists and clinicians doctors, nurses and nursing technicians, physiotherapists, speech therapists, psychologists and nutritionists, as well as technological devices for early diagnosis, treatment in short time interval and total rehabilitation of the morbidities present in the patients.

Its purpose is to reduce the mortality caused by stroke, as well as to significantly reduce the degree of incapacity of the victims. Such benefits have been consistently visible, especially when we compare the prognosis of the patients treated in the unit, with that of those hospitalized in conventional wards of the same hospital.

According to the Ministry of Health [7], Brazil has seen a decline in the number of deaths due to cerebrovascular diseases (which include strokes) in the age range between 40 and 54 years. Between 2010 and 2013, there was a decrease of 6%, from 10,430 (4,952 women and 5,478 men) to 9,812 (4,637 women, 5,173 men). Regarding the number of cases (and not deaths), 26,882 hospitalizations were recorded in the SUS for the treatment of stroke only in 2014.

In the world classification, our country is among the top ten with the highest rates of death due to stroke, which is the largest cause of incapacity in the age group over 50 years old, accounting for

**Figure 4:** Data referring to the length of time of the victim in the hospital (from admission to hospital discharge) (N = 252).



10% of total deaths, 32.6% of Deaths with vascular causes and 40% of early retirements in Brazil [23].

**Figure 4**, which deals with the permanence of the stroke victim in the hospital since the moment of admission to the discharge, shows that 78% (197) of the victims remained hospitalized for less than 15 days, 16% (41) passed between 16 and 30 days in hospital, 5% (12) between 1 and 2 months, and 1% (2) between 2 and 3 months. It was also observed that none of the patients hospitalized for stroke had a residence time of more than 3 months in the hospital unit of the study source.

It is observed through the data the power of resolution of the hospital regarding the restoration of the health of the individual affected by stroke. It is worth noting that 78% of the patients treated are discharged within such a short time, given the complexity of neurological diseases, which are responsible for long periods of hospitalization due to clinical instability and the presence of sequelae that limit these patients and prevent them from being immediately reinserted into society.

In a simple way, vascular diseases can be controlled and have their rates reduced, since it is invested in some Health Education practices, such as the control of modifiable risk factors: dyslipidemia, hypertension, smoking, obesity, and sedentary lifestyle. From this control, it is already possible to observe a great impact on the number of stroke patients, besides providing a general improvement

in the health of the individuals, short time of hospitalization and immediate rehabilitation [24].

Prolonged hospitalization is a widespread concern, involving both the Health System and the Social Security System. Firstly, because of the demand for multidisciplinary care, often in Intensive Care Units, at first, and later for causing many cases of disability, which further inflame more the Brazilian social security system [17].

## Conclusions

In addition to the danger of death that Stroke brings to all age groups, including adults and especially individuals in the senile state, this can lead to partial or even total disability of the individual. Modern and unruly life, free of physical activities and associated with bad food education by the population, increases the danger of stroke.

It was observed through the study that the victim is a female, over 70 years of age, of brown color, resident in the urban area, retired or pensioner. In relation to the etiology of the VEA, in common with several other studies, it was noted the highest incidence of ischemic type (VEA) in relation to the hemorrhagic (VEA). It was observed that most of the patients already had some pre-existing disease, being these directly related to the VEA, such as Arterial Hypertension, Heart Failure and Diabetes Mellitus. They also had several associated risk factors, such as obesity or overweight, sedentary lifestyle, alcoholism and smoking.

The number of discharges after diagnosis and treatment of these victims is reported in an extremely short time, since neurological conditions are responsible for prolonged hospital stays. Thus, most inmates completed their treatment in less than a fortnight. The fact is related to the treatment offered by the health institution, which has an exclusive wing for rehabilitation of patients affected by Stroke, the mixed unit of stroke, as it is known. The unit has 6 (six) beds, equipped by a multidisciplinary

team, whose main objective is to reduce stroke mortality, as well as significantly reduce the degree of dependency of the patients there.

Because the Stroke represents a major epidemiological problem and with differentiated characteristics among some regions, the research only deals with the superficial interface of the problem, where the incidence of pathology was analyzed in the Regional of Patos, which, as it was raised, develops an exemplary work in the face of early diagnosis, treatment and guidance after stroke. Therefore, it is important that research of this nature, in order to deepen, discuss and evidence the causes, effects and peculiarities of this disease, be carried out in several regions, as well as the need to create, in medium and large hospitals, Multidisciplinary units that treat these patients, given the complexity of this pathology.

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