

STROKE: EPIDEMIOLOGICAL PROFILE OF PATIENTS HOSPITALIZED IN THE STATE OF RIO DE JANEIRO IN THE LAST FIVE YEARS

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Abstract: Cerebrovascular accident (CVA) in the world is the second leading cause of death and the first cause of functional disability. It is characterized as the focal and/or global disorders of brain function, which may be of hemorrhagic or ischemic etiology, with sequelae that increase morbidity. Its approach must be rapid and with the institution of secondary prevention measures. This is an observational and cross-sectional study, based on the collection of secondary data from epidemiological bulletins made available by the Health Surveillance Department from July 2016 to July 2021 in the state of Rio de Janeiro. The objective of the present study is to carry out an epidemiological analysis between the number of hospitalizations performed in each age group and per year of processing, the total value, the prevalence ratio of hospitalizations and deaths between the sexes. There were 57,331 hospitalizations, and the most affected age group was 60 to 69 years old, with a number of 16,275 hospitalizations, 29,418 and 27,913 for males and females respectively, with an increase in incidence over the five years of studies. Regarding the difference in deaths by sex, 5,917 deaths were male and 5,863 deaths were female. With the results obtained in the present study, the growing number of cases of this disease is evident, which is related to the increase in life expectancy of the population, as well as the western lifestyle are factors that increase the risk of a person developing stroke.

Keywords: Stroke, Epidemiology, Admissions.

INTRODUCTION

Worldwide, according to the World Health Organization, stroke is the second leading cause of death. 1 It is an important disease that occurs predominantly in middle-aged and elderly adults, resulting in problems that can affect several domains of functionality, either partially or completely. 1.2

The hospital lethality of this disease is of such magnitude that it becomes a public health problem. 2 About 70% of affected people do not return to work due to sequelae and 50% are unable to perform activities of daily living.³

Stroke is defined as a vascular disorder in any brain area, which causes changes in the cognitive and sensorimotor planes according to the area and extension of the lesion. upper or lower limb, or semi-limb, sudden loss of speech of no known origin, sudden loss of vision in one or both eyes, severe headache and imbalance. Among other typical or atypical manifestations of acute neurological deficit. 4

It can manifest in two ways: ischemic (caused by atherosclerotic or embolic processes) and hemorrhagic (caused by the rupture of vessels with blood leakage inside or around the structures of the central nervous system).⁵ Or even the so-called transient ischemic attack (TIA), where symptoms last less than 24 hours, usually 15 to 30 minutes, and spontaneously reverts.⁶ Being ischemic stroke responsible for 80% of cases. 6

The risk factors for this disease are divided into modifiable and non-modifiable. 7 Among the modifiable factors, arterial hypertension is the most important factor in Brazil. Thus, blood pressure control is a fundamental and priority item in the primary and secondary prevention of stroke.^{7,8}

In second place as an important risk factor is diabetes mellitus, with risk potentiation with the combination of hypertension, diabetes and dyslipidemia.⁷ Even though hyperlipidemia is more associated with cardiovascular diseases and not with the manifestation of stroke, the new studies point to a direct association with mortality and high cholesterol levels in ischemic stroke.⁹

Smoking and alcohol consumption are cited in the literature as important modifiable

factors. 10 The Framingham study was one of the first to show this association between smoking and stroke and how beneficial the effect of quitting smoking is, since it significantly reduces risk after 2 years, reaching a non-smoker level from 5 years.^{7,10,11,12}

Regarding arrhythmias, atrial fibrillation has the greatest thrombogenic potential, increasing the risk of stroke by 4 to 5 times and mortality by 2 times.¹³

And the non-modifiable factors are: hereditary, age, ethnicity and sex. Since it is a disease in which the elderly have risk factors more often, it generates a predominance in this age group of people over 60 years old and the risk doubles every 10 years.¹⁴⁻¹⁷

In the acute phase of the condition, patients have an increased risk of developing another stroke within the first week. For this reason, urgent intervention and early secondary prevention through blood pressure control, blood glucose control, antiplatelet therapy, anticoagulation for atrial fibrillation and lifestyle change are essential.¹⁸

As it is a disease with a high incidence of deaths and occurrence in today's society, this present study aims to analyze the epidemiological panorama of patients hospitalized in the state of Rio de Janeiro in the last 5 years.

METHODOLOGY

The present study is observational, cross-sectional and retrospective through an analysis of epidemiological data from the electronic address <https://datasus.saude.gov.br/> of the Ministry of Health (MS) and the Hospital Information System (SIH) in the Department of Informatics of the Unified Health System (DATASUS) from July 2016 to July 2021. The federation unit chosen for the present study was Rio de Janeiro. The data obtained refer to the ICD-10 morbidity list Unspecified hemorrhagic or ischemic

stroke, as well as their hospital admissions per year, the number of deaths, mortality rate, the total value for each hospitalization, the prevalence within the ranges ages from 20 to 29 years, hospitalizations and deaths by sex. To access the information, it is necessary to select the Epidemiological and Morbidity area on the Tabnet portal and proceed to the SUS Hospital Morbidity website area (SIH/SUS). To proceed with the data collection, it is necessary to select the territorial approach, which was in Rio de Janeiro, by place of residence from 2008 onwards. After that, select the contents mentioned above in the row and column. The steps in the DATASUS data search system are detailed, as described in Figure 1.

RESULTS

From the data collected at the Department of Information and Informatics of the SUS (DATASUS), as shown in table 1, a total of 57,331 hospitalizations due to stroke were performed. Of these, 16,275 correspond to the age group from 60 to 69 years, being the most affected. Followed by 14,741 aged 70 to 79, 10,083 aged 80 and over, 9,907 aged 50 to 59, 4,243 aged 40 to 49. The least affected age is from 20 to 29 years old, with approximately 457 hospitalizations. Regarding the number of deaths, a total of 11,780 deaths were documented during these years. Thus, with a mortality rate of 20.55%.

By analyzing Table 2, we can infer that the difference in hospitalization between genders is small, with approximately 29,418 and 27,913 for males and females, respectively. As well as the difference in deaths by sex, with 5,917 male deaths and 5,863 female deaths.

Over the years, according to table 3, it can be seen that over the years from 2016 to 2021 there was an increase in the number of cases, with a decrease in the year 2020. In 2016, a number of hospitalizations of 4,767, 10,290 in

2017, 11,768 in 2018, 11,918 in 2019, 11,755 in 2020 and 6,920 in 2021.

Finally, the last data analyzed was the total value of hospitalizations, which was spent by the Unified Health System, the amount of R\$ 67,831,630.47 during this period.

DISCUSSION

Stroke is a multifactorial disease and the combination of risk factors may be associated with its development or not.¹⁹ In the developed study, the most affected age group is between 60 and 69 years, showing that its incidence increases with advancing of age. Due to the increase in life expectancy, there was a concomitant increase in the incidence of non-communicable chronic diseases, such as diabetes, arterial hypertension and pathologies of the cardiovascular system, which are risk factors for the development of CVA.²⁰

Regarding the result on the relationship between the sexes, males were the most affected. These data go against the current literature and the data found by Almeida¹ and Carvalho²¹, in which females are the most affected, due to hormonal factors such as estrogen, pregnancy, childbirth and menopause, which increase the risk of developing stroke by 13 times.^{1,17,21} However, in a Brazilian study by Araujo⁴, it shows that the trend of involvement and mortality in the male sex is on the rise due to lifestyle issues and diseases such as the arterial hypertension, which would be a risk factor. A study published in 2012 also observed the predominance of deaths from stroke in males, representing 50.61% of the total.¹⁰

The temporal evolution in the state of Rio de Janeiro was of growth over the five years, with a slight decrease in the year 2020, as was seen by Sousa¹⁴ in his study that evaluated 22 years of stroke incidence in Portugal. It is worth mentioning that, as already mentioned, the increase in chronic diseases contributes to

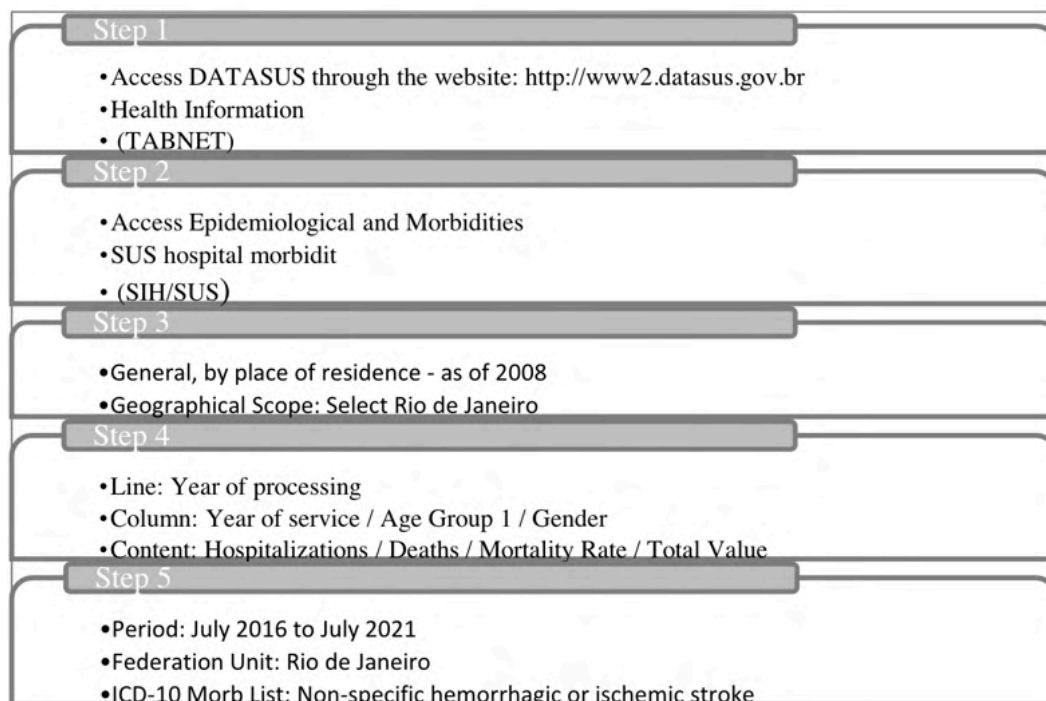


Figure 1: Access flowchart to the SUS Information and Informatics Department (DATASUS).
Source: Authors (2021).

Age	2016	2017	2018	2019	2020	2021
20 to 29 years	27	91	101	107	81	50
30 to 39 years	101	272	297	315	310	145
40 to 49 years	318	797	891	848	891	498
50 to 59 years	825	1792	2036	2114	2011	1129
60 to 69 years	1361	2887	3329	3392	3354	1952
70 to 79 years	1255	2561	3002	3033	3105	1952
80 years or more	864	1853	2083	2082	1956	1245

Total: 57.331

Table 1: Hospitalization by Age Group 1 second Year of processing.
Source: Ministry of Health: SUS hospital information system (SIH-SUS).

Gender	Male	Female	Total
Admissions	29.418	27.913	57.331
Deaths	5.917	5.863	11.780

Table 2: Hospitalizations and deaths by sex according to year of processing.

Source: Department of Information and Informatics of the SUS – Unified Health System (DATASUS).

Year of processing	
2016	4.767
2017	10.290
2018	11.768
2019	11.918
2020	11.755
2021	6.920
Total:	57.418

Table 3: Hospitalizations - Second Year of Processing.

Source: Department of Information and Informatics of the SUS (DATASUS).

this fact, as well as the lifestyle of the current population, in which it is more sedentary, obese, with excessive consumption of alcohol and tobacco.^{10,22}

Stroke mortality in Brazil is one of the highest among Latin American countries, although this mortality rate has shown a decrease in the year 2020, the decrease is not the same in all regions, for example, in the Northeast this number is in rising elevation.²³

Although stroke is a major public health issue, there is little focus on controlling risk factors, organizing care, and funding research in the field of cerebrovascular diseases.²⁴

Thus, there is a great need to develop comprehensive policies in the state of Rio de Janeiro to improve socioeconomic conditions, focusing on the population's quality of life as the most effective way to reduce cardiovascular morbidity and mortality, and vertical programs to control cardiovascular risk factors. ²⁵

CONCLUSION

Based on the facts presented, it can be concluded that the population that is most affected are elderly men aged between 60 and 69 years, and that the incidence has been increasing over the years. The lifestyle of the current population corroborates this event, as well as the increase in life expectancy in general. As already mentioned, stroke can result in problems in several domains of functionality in the ability to perform common daily activities. In addition to government campaigns that encourage the population to better control the risk factors of the disease and the effective intervention of the neurological team, it is necessary to reintegrate the individual into society and its activities.

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