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RESEARCH ARTICLE

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Treatment of strokes in the emergency department of N'Djamena general hospital: study of delays, care and clinical course of patients in the first hours.

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Abstract

Introduction : Meeting the deadlines for treatment of Cerebral Vascular Accidents (CVA) could allow victims to maintain an optimal functional level in interaction with the environment.
To study the management, the delays, the care and the clinical evolution of the patient's victims of the cerebrovascular accidents during the first hours in the emergency department of the General Hospital of Reference of N'Djamena (HGRN).

Material and methods : This was a descriptive, analytical cross-sectional study. Included in the study were all stroke victims hospitalized in the HGRN emergency room. The sample size was 60 patients. The questionnaire and the observation grid were the collection tools. The data were entered by Cspro software and analyzed on Excel and SPSS.

Results : The mean age of the patients was 54.65 ± 11.6 years. About 2/3 of the study population 67% were female with a sex ratio of 2 in favor of women. All patients were transported to the emergency room by non-medical means. Ischemic strokes represented 66.67% of cases. The overall death rate was 13.33%. About 36.3% of patients arrived at the emergency room between 4:30 a.m. and 6 a.m. after the onset of the first symptoms. The clinical outcome of the patients was unfavorable in 55% of cases, including 47.5% of ischemic strokes.

Conclusion: We do not have a link between age and clinical course. All patients were transported to the emergency room by non-medical means. Raising public awareness of the signs and symptoms of stroke could help reduce complications of the disease.

Keywords: Stroke, treatment delays, emergencies, HGRN, N'Djamena.

1 | INTRODUCTION

Cerebrovascular accident (stroke) is damage to the brain parenchyma associated with vascular injury (1). Thus, depending on its mechanism, stroke comes in two broad categories: ischemic stroke and hemorrhagic stroke, (2). Stroke is a pathology fraught with heavy morbidity, mortality and a significant risk of functional sequelae, which is the origin of many disability situations. Stroke is a medical emergency, and it can be life threatening in the short term if nothing is done quickly. The aim of this study was to assess the delay between the onset of symptoms and the time of first aid administration in the emergency department of HGRN N'Djamena.

Within the meaning of Guillou et al. (3), the time taken to take charge of a patient is "the time elapsed between his admission and the management of his pathology". Respecting the deadlines for the treatment of stroke could be a solution to this real problem (4). This respect for the management deadlines for patients received for stroke allows a person to achieve and maintain an optimal functional level in their interaction with their environment (4).

Cerebral Vascular Accident is a common condition that increases with age.

It represents a group of conditions in which ischemic strokes must be distinguished from hemorrhagic strokes. Cerebral ischemia is responsible for 75 to 80% of accidents, 20 to 25% due to a hemorrhagic mechanism. The clinical prognosis of stroke is strongly dependent on the effectiveness of their management. It is linked to the speed of implementation of intensive monitoring and the treatments used (5) .

In South Africa, the annual prevalence rate of stroke is estimated at 75,000 new cases per year (6). A South African study in Cape Town (7) estimated the death rate from stroke at 25,000 cases per year and 58% of stroke survivors would have residual disability, mild 23% and severe 8%.

Two studies in Tanzania and The Gambia have shown one-month mortality rates in the order of 24 and 27% higher compared to rates below 20% in developed countries (8) (9) (10) .

Deaths from stroke are higher but there are few intensive care units (11).

In Chad, these three letters AVC sound like the death knell, and make people fear the worst. The management of stroke in the acute phase remains a concern for the Chadian citizen in view of the existing provisions in urban and rural areas.

If the stroke is taken care of within 4 hours and 30 minutes, the signs may be reversible. Given that the delay in taking care of a patient with a stroke is a predisposing factor for stroke complications, we therefore asked ourselves about the treatment, the delays, the care and the clinical course. of stroke victims at the HGRN in N'Djamena. In addition, we found no study data from the HGRN emergency department that described a study of the timing, care and clinical course of patients in the early hours.

2 | MATERIALS AND METHODS

The study took place in the Emergency Department of the General National Reference Hospital of N'Djamena (HGRN) located in the political capital of Chad. We conducted a descriptive cross-sectional study with an analytical aim based on the clinical method carried out in the emergency rooms of the HGRN in N'Djamena over a period of 45 days (August 1 to September 15, 2020). All stroke patients or close relatives who could provide information on the condition of the patient's condition were included in the study. Stroke patients or relatives who did not agree to participate in the study were not included in the study.

The non-probability sampling method and the convenience technique were used to select the sample. The sample size was 60 patients.

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The questionnaire and the observation grid were the collection tools. The data were entered by Cspro software and analyzed on Excel and SPSS.

In order to ensure the anonymity of the survey, no name was entered on the data collection sheets, and no financial participation was required. The study did not have an intervention that could endanger the life, human dignity and physical integrity of the participants. This is how they will be constructed in accordance with the principles of research ethics, in particular respect for human dignity, free informed consent and respect for privacy and the information obtained.

3 | RESULTS

The mean age of the patients was 54.65 ± 11.6 years. About 2/3 of the 67% study population were female with either a sex ratio of 2 in favor of women. Married people represented 82% of the study population (Figure 1).

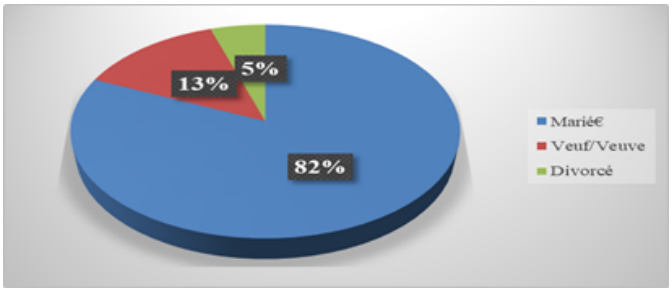

FIGURE 1: Distribution of patients according to marital status

The unemployed made up 23% of the study population (Figure 2).

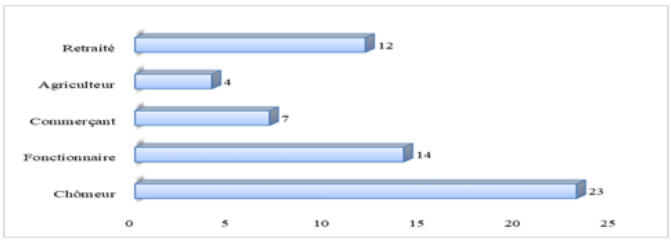

FIGURE 2: Distribution of patients according to their profession

Patients with secondary education were the most represented with 65% of cases.

A large portion of the patients 72% had a history of high blood pressure. All patients were transported to the emergency room by non-medical means. Ischemic strokes (DALYs) accounted for 66.67% of cases and hemorrhagic stroke (AVCH) was 33.33%. The clinical outcome of the patients was unfavorable in 55% of cases, including 47.5% of ischemic stroke (DALY). The overall death rate was 13.33%. Of the 8 patients who died, 5 were affected by DALY and 3 by HAVA. About 36.3% of patients arrived at the emergency room between 4:30 a.m. and 6 a.m. after the onset of the first symptoms. The average length of hospital stay was 7 days. Out of the 60 patients, the most represented imaging time was ≤ 4:30 a.m. or 58, 33% after arriving in the emergency room. Left hemiplegia was the most observed deficit with 25% of cases followed by left lower limb motor deficit with 23.3% of cases (Figure 3).

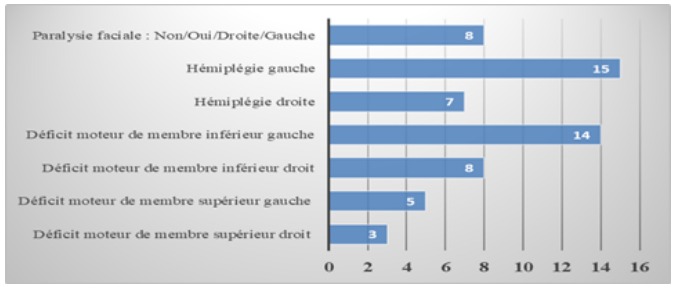

FIGURE 3: Distribution of patients according to motor deficit

About 77% of patients received heparin. All patients received antihypertensive treatment half of the patients used the services of the neurosurgeon.

We did not find a statistically significant association between age and clinical course of the disease (chi-square = 7.019; dof = 4; P = 0.135) and between sex and clinical course of the disease (Chi-square = 0.886; dof = 2; P = 0.642). Not all of the patients treated benefited from thrombolysis / mechanical thrombectomy, the treatment time was long. Eighty-three (83%) of patients arrived 6 hours after the onset of signs and treatment.

The chi-square test, however, reveals that the difference between these times is not significant (chi-square = 0.002; dof = 2; P = 0.999). In other words, the clinical course does not depend on the time of onset of symptoms before arriving in the emergency

room. The clinical course of the patients was favorable 55%. A stationary rate of 31.67%. The average length of hospital stay was 7 days. The clinical course does not depend on the length of the hospital stay (Chi-square = 0.266; dof = 2; P = 0.876).

4 | DISCUSSION

In our series, we found a 67% female predominance. These figures are similar to those obtained by Kakou (12) in Abidjan. The clinical course of 43.33% worsened or remained stable. Age is a determining factor in the occurrence of stroke. The mean age of our study population was 54 ± 11.6 years; these figures agree with those already found by Nana in Bamako (13). The failure to find a significant association between age and stroke could be explained by the (small) sample size. The risk factor most represented in our study was the antecedent of hypertension 72%, this result is slightly lower than that of Mapoure et al., In Douala who obtained 74.35% of risk factor of hypertension (14) . In our series, all the victims were transported to the emergency room by non-medical means. However, the use of medical means of transport to transport stroke patients significantly improves their chances of survival. The delay between the time of the onset of symptoms before arriving at the emergency room is greater than 6 hours 83%, this figure is contradictory to that of Agokeng et al., In Bafoussam in Cameroon which their delay was between 1-5 hours with a proportion of 63% (15).

Patients with an emergency room arrival time between 4.30 a.m. and 6 a.m. accounted for 36.67%. These figures are higher than those found by Yonmadji in Fez, Morocco (16). Left hemiplegia is the most observed motor deficit 25%, this result is much lower than the data obtained by Yonmadji which was 92.6% (16).

The mode of onset of symptoms was progressive in the majority of patients, ie 45.7%. Patients are much more affected by DALY 67% than by DALY 33%.

The mode of installation of the ”sudden” deficit was the most represented 59%. Brain CT was the first-line medical imaging examination performed in our study with 98% versus 2% for MRI. These figures were approximate to those of Yonmadji where 100% of respondents had benefited from a brain scan [16]. Resuscitation was necessary in 19% of patients, these data are slightly higher than those obtained by Yonmadji, which were 13% [16]. Fifty-three (53%) of the patients were put on the antihypertensive triplet (antiaggregants-platelets-statins this result was similar to the result of Yonmadji (16).

The average length of stay was 7 days, our results are identical to those of Badsi who observed an average hospital stay of 7 days (17).

Overall, the clinical outcome of our patients was favorable in 55% of cases, including 47.5% of DALYs versus 7.5% of AVCH. We obtained a steady rate of 31.67% among which there were 40% of DALYs and 15% of AVCH. A death rate of 12.25% for DALYs and 15% of AVCH. Our result disagrees with that of Sonfo et al., (18), who observed a favorable outcome in 83% of patients, with a total lethality of 17%, these results could be explained by the improved economic situation and the knowledge of disease by patients. These figures are higher than the result found in the study carried out by Toure et al., In Niger where 81.84% of patients had a favorable outcome and the case fatality rate was 12.59% (19) .

5 | CONCLUSION

All patients were transported to the emergency room by non-medical means. The in-hospital death rate was high 13.33%. In view of these results, there is a need to inform the public and to encourage healthcare workers to refer patients to neurology units in good time. Emphasis should be placed on sensitizing the general population and on-going training of health workers on stroke management.

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