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The Problem of Stroke Management in Bujumbura Hospital

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Abstract:

Aim: To determine the problems that prevent the proper management of strokes in Bujumbura.

Methodology: This was a prospective and descriptive cross-sectional study that lasted eight months from 19 March to 18 November 2020. All patients hospitalised for suspected stroke at the Kamenge Teaching Hospital (KTH) and the Kamenge Military Hospital (KMH) were included.

Results: We collected 95 patients with suspected stroke. The median age was 65 years and 53.68% were female. Hypertension was the most common risk factor at 41.05% and 12.63% of strokes were recurrent. Only 31.58% of patients had consulted before 4 hours 30 minutes from the first signs and 4.49% had already had a brain scan before this time. 23.88% of patients had started anti-platelet aggregation medication on the first day of hospitalisation and 8.54% had already started rehabilitation on the second day of admission. 25.00% of the patients who were able to express themselves were aware of the stroke. The NIHSS score was used in 46.32% of patients and the RANKIN score was never used. Complications associated with stroke were dominated by inhalation pneumonitis in 13.68% of patients. The mortality rate was 17.90%.

Conclusion: Stroke management in Bujumbura is hampered by a lack of information for patients, a delay in decision making in the management of stroke, and the poor use of patient assessment tools. A training and awareness campaign is needed.

Key words: stroke, problems, management

1. Introduction

Stroke is a worldwide public health problem [1]. Despite considerable progress in recent decades, both in terms of diagnosis and treatment, all forecasts point to an increase in the incidence of stroke, raising the prospect of a veritable epidemic [2]. With a high incidence in developed countries, stroke appears to be an even greater public health problem in Africa, where it is the second leading cause of death, ahead of infectious diseases, notably pulmonary or diarrhoeal infections, tuberculosis, AIDS or malaria [3].

Stroke management remains a concern in sub-Saharan Africa [4]. In our country, despite the absence of an MRI, the political capital Bujumbura has at least one scanner, which should improve the management of stroke. However, there is an increasing morbidity and mortality rate in Bujumbura hospitals, which leads us to consider other problems that would limit the proper management of stroke in Bujumbura.

2. Material and method

This is a prospective and descriptive cross-sectional study that lasted 8 months from 19 March to 18 November 2020 in the Internal Medicine departments of KTH and KMH in Bujumbura. All patients admitted with suspected clinical stroke according to the international definition of stroke as a sudden loss of focal brain function with no apparent cause other than a vascular cause were included[5,6]. Data were collected on a collection form from medical records but also by interviewing patients who were able to express themselves. The variables studied concerned the socio-demographic data of

the patients, the risk factors for stroke, the time taken to apply different stroke management procedures, the attitude of the patients in the event of a stroke, the use of neurological assessment tools, complementary examinations and the evolution of the patients in hospital. The data were entered and analysed in the Epi-info software version 7.2.3.0.

3. Results

During our study period, we collected 95 suspected stroke patients, of which 51 patients at the CHUK, i.e. 53.68% of patients, and 44 patients at the HMK, i.e. 46.32% of patients. The median age of the stroke patients was 65 years with extremes of 16 to 92 years. Women accounted for 53.68% and men for 46.32%, giving a sex ratio of 0.86. The majority of patients lived in the countryside (70.53%) and were farmers (67.37%). As for education, the majority of our patients had a level of study limited to primary school (47.37%), followed by illiterates who represented 28.42% of the patients. Only 4.21% had a university education.

Hypertensive patients were in the majority (41.05%), making hypertension the primary risk factor for stroke. Smoking was noted in 18.95% of patients. Finally, 12.63% of the patients had a recurrent stroke. 31.58% of the patients had consulted before 4 hours and 30 minutes after the first signs of stroke. The median time to consultation was 12 hours with a range of 5 minutes to 14 days. However, 83.16% of patients were seen by healthcare staff within 15 minutes of arrival in the emergency department. The median time to first contact with the health care staff was 10 minutes with limits ranging from 0 to 2880 minutes or 48 hours. Brain scans were performed by 93.68% of the patients in our study. In any case, only 4.49% of the patients had undergone it before 4 hours 30 minutes. The average time taken to perform a brain scan was 72 hours, with extremes ranging from 2 hours to 30 days. Of the patients who had been put on antiplatelet medication, only 23.88% had started it on the first day of hospitalisation and 13.43% on the second. The majority of patients, 28.36%, had started this treatment after more than 5 days. The median time to start antiplatelet therapy was 60 hours with limits ranging from 2 hours to 720 hours or 30 days. For physiotherapy, it was already started at two days of admission in only 8.54% of patients while 58.54% had started it within 3 to 7 days inclusive. Elsewhere, they were started at the second week in 23.17% of patients and after two weeks in 9.76%. The median time was 6 days with a range of 1 to 30 days

Only 7 of the 28 patients who were able to express themselves, i.e. 25.00%, had heard of the stroke, including 6 patients from relatives and only one from the media. None of these patients had heard of the disease from health care personnel. At the time of onset, only 7.14% of the patients had thought of stroke. The rest believed it to be hypertension (7.14%), demons (7.14%) but the majority (71.43%) did not know. However, the vast majority of the patients (89.29%) had contacted the nursing staff first when the signs appeared. Religious people and healers were contacted first by 4.21% and 8.42% of patients respectively.

The NIHSS score, although an essential tool for assessing stroke patients on admission, was used in only 46.32% of patients. No patients were assessed with the RANKIN score at discharge. Complications associated with stroke in our study patients were inhalation pneumonitis (13.68%), urinary tract infection (8.42%), pressure ulcers (5.26%) and thromboembolic disease (3.1%). The death rate was 17.90%.

4. Discussion

In our study, the age of onset of stroke ranged from 16 to 92 years with a median age of 65 years. The most affected age group was 65 to 74 years. While the average age of stroke onset is 74 years, 40% of patients are over 85 years of age. The risk of stroke increases twofold every 10 years from the age of 55 [7]. 53.68% of the patients are female, which is a sex ratio of 0.86. Although this female predominance is reported by other authors such as N'goran YN et al [8], gender is a variable risk factor for stroke with age. Stroke is two to three times more common in men than in women between the ages of 55 and 64. The difference between the two sexes gradually decreases to zero after the age of 85 [9].

Hypertension was the most common risk factor for stroke in our study patients, accounting for 41.05%, and in 12.63% of cases the stroke was a recurrence. Hypertension is the main risk factor for stroke. Its effect increases the risk of haemorrhagic stroke by a factor of 10 and ischemic stroke by a factor of 4[10]. The recurrence rate varies from 6% to 12% per year. For cerebral infarcts, the risk is different depending on the mechanism considered. For example, higher recurrence rates are seen in cardioembolic infarcts compared to other stroke mechanisms [11]. The average time from onset to consultation was 12 hours in our study. Only 31.58% of patients arrived at the emergency room before 4 hours 30 minutes. These results are in line with those of Bertrand C. found in the emergency department of CHIVA in France but in 2013 where 31% of stroke patients arrived in less than 4h 30minutes [12]. However, in another study carried out in Toulouse the same year, after an awareness campaign, we note that this time the rate of patients arriving at the emergency room before this time is 67% [13].

Indeed, in the case of ischaemic stroke, thrombolysis must be carried out as soon as possible and at the latest up to 4 hours 30 minutes after the stroke. After this time, this treatment becomes ineffective and dangerous. Although this technique is not feasible in Burundi, this shows that the population is not aware of the emergency that is stroke.

Every patient admitted to the emergency department with a suspected stroke should benefit immediately from brain imaging to diagnose the nature of the stroke and guide its management. Although the vast majority of patients (93.68%) had a brain scan, the median time between the onset of signs of stroke and the scan was 72 hours with extremes of 2 hours to 30 days. Only 4.49% of the patients had it done before 4 hours 30 minutes, the time limit for thombolysis. These results are far inferior to those of Hassane Bana R. in 2014 in Senegal, who found that 89.4% of patients admitted for stroke at the Gabriel Touré University Hospital underwent a cerebral scan within the first 3 hours [14].

The median time to start antiplatelet drugs in patients in our study is 60 hours with limits ranging from 2 hours to 720 hours, i.e. 30 days. However, once haemorrhage has been excluded, in non-trombolysed ischaemic stroke, it is advisable to start antiplatelet therapy as soon as possible [15]. This may reduce the volume of

brain damaged by ischaemia and reduce the risk of early recurrent stroke, which may also reduce the risk of early death and improve long-term outcomes in survivors [16].

Although 87.37% of patients were able to benefit from rehabilitation, the average time from admission to the first rehabilitation session was 6 days with extremes of 1 to 30 days. These results are similar to those of Mombomatoumba M et call in Mali in 2019 where the majority of patients had the first rehabilitation session within 4-7 days (17). However, the earliness of rehabilitation sessions in a patient with a functional deficit due to a stroke is one of the important factors in the functional outcome [18].Concerning knowledge about stroke, only 25.00% of the patients in our sample who were able to express themselves had ever heard of this disease. 7.14% of the patients thought that they had a stroke at the time of the first signs, while 71.43% did not know about it. The remaining patients thought of hypertension, demons or malaria. These results show a low level of knowledge of patients about stroke, which leads to late consultations but above all to the difficulty of implementing preventive measures.

On admission, the NIHSS score was calculated in only 46.32% of patients, although it should be assessed for all stroke patients on arrival at the emergency department to evaluate their severity and guide management. This was found in the study by Mombomatoumba M et call. [17] in BAMAKO where this score was calculated for all patients. No patient was assessed using the Rankin score, although this should be done at discharge and 3 months after the stroke to assess the degree of dependence of the patient [19].

In terms of evolution, the most frequent decubitus complications in the stroke patients in our study were inhalation pneumonia (13.68%) and urinary tract infections (8.42%). The death rate was 17.90%. The burden of stroke is quite high for developing countries, particularly in sub-Saharan Africa. Stroke mortality is quite high in this region and could be explained by the health system, cultural factors and even specificities of stroke in this population. Data on short-term mortality (less than one year) are numerous and indicate a very high rate than that reported elsewhere in the world. The few studies on mortality at one year and beyond indicate a mortality of between 31.5% and 67% at one year. This rate exceeds 75% after 5 years [20].

5. Conclusion

In addition to the absence of MRI and the technique of thrombolysis for ischaemic stroke, the management of stroke in Bujumbura, the economic capital of Burundi, is also hampered by the lack of information for patients and the delay in decision making in the management, but also by the poor use of patient assessment tools. This significantly affects the prognosis of stroke patients. There is a need for a training campaign for health care staff and for raising awareness of stroke among the population.

7. References

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