



Insomnie au cours des accidents vasculaires cérébraux : aspects épidémiologiques, cliniques, et thérapeutiques au service de neurologie de l'hôpital national IGNACE DEEN

By

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Abstract

Insomnia is a common complaint that often appears in the acute phase of stroke, associated with daytime disturbances, it involves the process of functional neuro-rehabilitation after a stroke. The present study aimed to determine the epidemiological, clinical and therapeutic characteristics of insomnia during stroke in the neurology department of the Conakry University Hospital.

We conducted a prospective descriptive study lasting 6 months. All patients hospitalized during the study period for stroke confirmed by brain imaging and who met the DSM-5 diagnostic criteria for insomnia were included. Sociodemographic, clinical and therapeutic variables were listed.

Out of a total of 240 patients hospitalized for stroke, 62 patients experienced insomnia during our study, i.e. a frequency of 26%. The average age of the patients was 53.12 ± 13 years (range 16 and 90 years). There were 34 women and 28 men with a sex ratio of 1.21. The main type of stroke was ischemic, i.e. 64.5%. Difficulty falling asleep was the most common insomnia complaint, accounting for 56.4%. The mean NIHSS at admission was 9.51 ± 4 (range 1 to 16). 35 patients were treated with zolpidem and 20 patients with amitriptyline. The development was favorable.

In conclusion, insomnia during stroke is common and can have a deleterious impact on neurorehabilitation during stroke due to daytime disturbances.

Keywords: *Insomnia, stroke, daytime disturbances, neurorehabilitation.*

1. Introduction:

According to the 5th edition of the diagnostic and statistical manual of mental disorders (DSM), insomnia during stroke is defined as a reduction in the usual duration of sleep and/or impairment of the quality of sleep. sleep with repercussions on the quality of waking the next day following a stroke (1).

Insomnia is a very common complaint, affecting around 40-60% of stroke patients (2). It occurs in the acute phase (3).

Worldwide, the prevalence of insomnia during stroke varies from one study to another, ranging from 20 to 56 per 100,000 inhabitants(3).

In the United States in 2016, in a study carried out by Mims et al.(4) in North Carolina, the incidence of insomnia in patients who had suffered a stroke approached 57%.

In Australia, in 2017, in a study by Glozier et al, (5) it was reported that approximately 37 to 57% of patients who suffered a stroke had insomnia.

In Benin, in the Hubert KM national hospital and university center; Gnoloufoun et al, (6) reported 38.8% insomnia during stroke.

Insomnia during stroke is mainly caused by depression resulting from hyperreactivity of the sympathetic nervous system (2-7). Additionally, it could be due to brain damage resulting from the stroke, age, degree of disability after stroke, anxiety disorder, antipsychotics and other comorbidities (2).

The diagnosis of insomnia during stroke is primarily clinical and includes a detailed history, a 2-week sleep diary, identification of potentially similar medical and psychiatric pathologies, sometimes a questionnaire on quality of life and daytime functioning (8).



The insomnia questionnaire is a diagnostic tool which includes the main semiological elements of insomnia (difficulty falling asleep, nocturnal awakening and early morning awakening) (9).

Several other diagnostic aid tools have been developed such as: the self-administered Epworth sleepiness scale (ESS), the Barthel index (BL)(10-11).

Management is based on optimal treatment of the condition in question, strengthening sleep hygiene, and specific pharmacotherapy for insomnia (Hypno-sedatives, antidepressants, antihistamines, sedative neuroleptics)(12).

Insomnia during stroke constitutes a major public health problem due to its high frequency, its omission (14-7), in healthcare provision and its deleterious impact on the return to life before stroke (13).

Purpose of this study

Improve knowledge about insomnia during stroke
Determine the frequency of insomnia during strokes according to the type of stroke at the neurology department of the HNID

Describe sociodemographic and clinical characteristics
Evaluate the support

2. Materials and methods

Our study focused on patients who presented insomnia during strokes in the neurology department of the Ignace Deen National Hospital during the study period. (In hospitalized patients).

We used as supports: Consultation and hospitalization registers. Data from the clinical examination and an investigation form pre-established for this purpose.

This was a prospective, descriptive study lasting 6 months from May 28 to November 27, 2021. All patients admitted (inpatient) to the stroke department during the study period.

The diagnosis of insomnia during stroke was based on the DSM-5 criteria; the existence of a main complaint following a stroke makes the diagnosis

- A. Main complaints
 - a) Difficulty falling asleep: 3 times a week;
 - b) Early morning awakening: 3 times a week;
 - c) Waking up at night: 3 times a week
 - d) Mixed difficulties
- B. Disruption of daytime functioning
 - a) Fatigue
 - b) Daytime sleepiness
 - c) Cognitive disorders
 - d) Mood disturbance

All patients hospitalized for a stroke during the study period confirmed by brain imaging, who met the diagnostic criteria for insomnia according to the DSM-5, were included in this study.

Patients receiving treatment having an effect on sleep, patients with a psychiatric history (depression, etc.), patients with a history of insomnia were excluded.

The epidemiological data were listed in hospital frequency and sociodemographic data; the clinical data were listed in Reasons for consultations, Types of stroke, Time to onset of insomnia, Insomnia complaints, Daytime disturbances, Contributing factors, Comorbidities, NIHSS score, Signs associated with insomnia; therapeutic data have been

Results:

We recorded 240 patients hospitalized for stroke during our study, and 73 cases or 30.4% presented insomnia. Sex Ratio F/M was 1.21(34F/28M) (figure 1). The average age was 53.12 ± 13 with extremes of 16 and 90 years (Table I). Hemiplegia was noted in 51.7% (Table II); Ischemic stroke accounted for 64.5% of stroke types in our study. We also note that the average time for the appearance of insomnia complaints during strokes is 6.95 ± 4 , 56.4% of patients had difficulty falling asleep (table III) and fatigue as a sign of daytime disturbance. Was present in 45.2% of cases (table IV). Headaches represented 57.9% as associated signs (table V) and the average NIHSS was 9.51 ± 4 (table VI). The treatment was favorable in 88.6% of cases (table VII).

Discussion

During our study, 240 patients were hospitalized for strokes confirmed by brain scan, including 62 patients who experienced insomnia after their stroke, a frequency of 26%.

Our results are in agreement with those of Madihah et al (3) who reported an incidence of 20 to 56% during stroke.

These results could be explained by the early nature of the psychological and physiological changes likely to trigger sleep disorders in the days following the stroke (14).

During our study, we found a female predominance with a F/M sex ratio of 1.21. This result is similar to that found by N'goran et al (15) who reported 56% female. However, in the African literature, there is variability in prevalence depending on sex, it is either female or male (15).

This average age is close to that of other Africans (16-17) with an age range varying from 44.5 years to 61 years.

These results could be explained firstly by the youth of the African population comparable to that of Europe or Asia due to reduced life expectancy, then by the ignorance that age from this interval is an unmodifiable FDRCV (18).

The most frequent reason for consultation during our study was hemiplegia. This result is superimposable to that of Touré M (19) in his doctoral thesis in medicine which reported 71% cases of hemiplegia.

These results could be explained by the fact that motor deficit is a frequent and frightening sign, which would force the patient to immediately consult a health facility.

During our study, we found a predominance of ischemic strokes. Our results are superimposable to those of CISSE FA

et al (20) who reported 77% ischemic stroke and 23% hemorrhagic stroke.

These results are similar to literature data on the frequency of strokes according to type (21).

Insomnia during stroke, in our study, appeared in 30 patients in the sub-acute phase, 28 patients in the acute phase and 4 patients in the chronic phase.

These results sufficiently prove the rapid onset of insomnia during stroke.

Difficulty falling asleep was the most important insomnia complaint in our study. Perpetuating factors resulting from psychological processes, such as maladaptive behaviors and dysfunctional beliefs, as well as physiological aspects, can maintain this early sleep difficulty and lead to persistent chronic sleep disorder (14).

These results could be explained by the emotional hyperarousal of patients during strokes due to the discomfort resulting from the neurological deficit.

Fatigue was the most common daytime disturbance during our study. Which would be an additional argument in the very definition of the diagnostic criteria for insomnia (1). Campos et al, In 2005(22) reported that stroke would be associated with high levels of fatigue due to multiple neurological problems affecting mobility, cognition and general activity.

These results could be explained by the fact that insomnia during stroke leads to a disproportionate lack of energy on a physical level.

During our study, headaches were the most frequent associated signs. Our results are in agreement with those of Anne P et al (23) who reported an incidence of 23 to 54% of headaches following a stroke.

These results could be explained by the fact that stroke patients are faced with tension headaches (24) due to their high level of stress secondarily linked to their physical disability.

During our study, the NIHSS score on admission was between 11 and 15 in 30 patients or 48.4% of cases, the average NIHSS was 9.51 ± 4 . Florence G et al (25) reported that an NIHSS score ≥ 10.5 in patients who had a stroke was a risk factor for developing psychiatric complications during their hospitalization.

These results show that the risk of insomnia during stroke may be proportional to the increase in the NIHSS score.

During our study, the evolution of insomnia was favorable in patients who received drug treatment.

CONCLUSION:

Our study showed that insomnia is a frequent complication of rapid onset during stroke, it mainly affected women and subjects aged between 46 and 60 years.

It frequently manifested itself as difficulty falling asleep, associated with daytime fatigue and headaches.

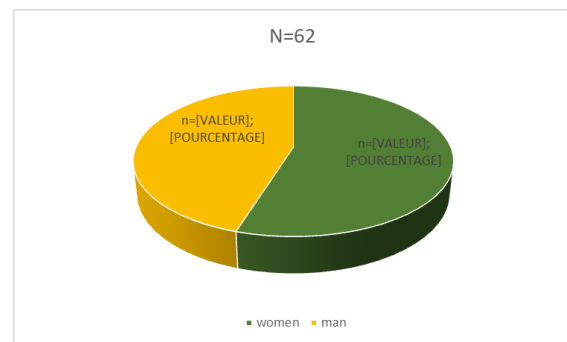
Increased NIHSS score was a significant indicator of insomnia during our study. Good progress was observed in patients who received amitriptyline and zolpidem.

Given the importance of sleep for daytime function, psychological well-being, as well as the proposed role in neurorehabilitation, these results highlight the need to integrate sleep into stroke care provision.

Conflicts of interest and acknowledgements: we emphasize that the authors of this article declare that they have no conflict of interest related to the content presented.

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ANNEXES:



Sex ratio (F/M) = 1.21

Figure 1: Distribution of patients by gender

Table I: Distribution of patients according to age

AGE	Effectifs (62)	Pourcentages(%)
16 - 30	2	3,3%
31 - 45	15	24,1%
46 - 60	28	45%
61 - 75	15	24,1%
76 - 90	2	3,4%

Mean age = 53.12 ± 13 Age extremes 16 and 90 years

Table II: Distribution of patients according to reasons for consultation

Neurological deficits	Effectifs (n=62)	Percentages(%)
Hemiplegia	32	51,7
Mixed disorders	19	30,7
Visual disturbances	4	6,4
Language disorders	5	8

Hemiparesis	2	3,2
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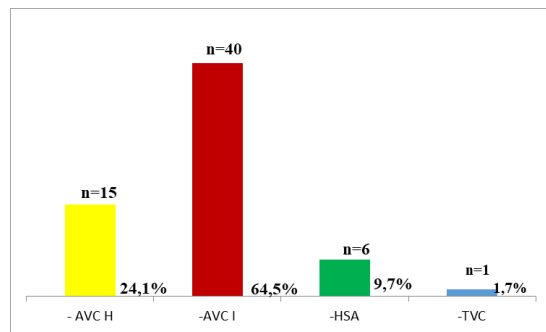


Figure 2: Distribution of patients according to type of stroke

Table III: Distribution of patients according to complaints of insomnia during stroke

insomnia complaints	Effectifs (n=62)	Percentages(%)
Difficulty falling asleep	35	56,4
Nocturnal awakenings	18	29
Early morning awakenings	1	1,7
Mixed difficulties	8	12,9

Table IV: Distribution of patients according to signs of daytime disturbances

Daytime disturbances	Effectifs(n=62)	Percentages(%)
Cognitive disorders	5	8
Mood disturbance	4	6,4
Fatigue	28	45,2
Daytime sleepiness	14	22,6

Tableau V : Répartition des patients selon les signes associés

Associated signs	Effectifs (n=62)	Percentages(%)
Pain	13	21
Breathing difficulties	4	6,4
Hiccups	2	3,2
Cough	6	9,7

Headache	37	59,7
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Table VI: Distribution of patients according to NIHSS score at admission

NIHSS	Effectifs	Percentages(%)
6 to 10 light	19	30,6
11 to 15 medium	30	48,4
16 to 20 severe	12	19,4
TOTAL	62	100

Mean NIHSS = 9.51±4 Extremes of 1 and 16

Table VII: Distribution of patients according to treatment of insomnia during stroke

Treatment	Effective	Percentages(%)
Zolpidem	35	56,4
Amitriptyline	20	32,2
Untreated	7	11,4
Total	62	100

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