

# Neurological Disorders in the Neurology Department of the General Hospital of Loandjili Pointe-Noire (Congo)

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**Abstract:** *Background:* Neurological pathologies are frequent in sub-Saharan Africa. They are responsible for significant morbidity and mortality throughout the world and particularly in African countries. *Objective:* Define the epidemiological, clinical and evolutionary profile of patients hospitalized in Neurology. *Methodology:* We conducted a descriptive cross-sectional study for 24 months from January 1, 2020 to December 31, 2021 in the neurology department of Loandjili General Hospital in Pointe Noire, including patients hospitalized for a neurological condition. The data studied were epidemiological, clinical and evolutionary. *Results:* Seven hundred and thirty four patients were hospitalized during the study period. The average age of our patients was 57.28 years with a predominance of men and a sex ratio of 1.1. The mean time to admission to neurology was 7±25 days. Hypertension (66.9%) was the most common medical history. The main causes were vascular (87.6%) and infectious (8.7%). The mean hospital stay was 8.67±5.39 days. *Conclusion:* Neurological diseases constitute a real public health problem, in particular neurovascular and infectious pathology, which remain the main activity of our service. Thus, knowledge of these data will improve patient care.

**Keywords:** Epidemiology, Neurological, Loandjili, Pointe Noire

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## 1. Introduction

Neurological pathologies are more and more frequent in sub-Saharan Africa. The aging of the population, the incidence of cardiovascular risk factors and HIV infection are factors that justify this increase. Numerous studies have determined that the main neurological conditions encountered in hospitals are vascular and infectious [1-3]. They are responsible for significant morbidity and mortality throughout the world and particularly in several African countries [4-6]. The Republic of the Congo has only two services specializing in the management of neurological

conditions. They are located in hospitals in the country's main city-departments, namely the Brazzaville Hospital and University Center (CHUB) and the Loandjili General Hospital (HGL) in Pointe-Noire. Epidemiological data on the conditions in hospitalized neurological patients are scarce in the Republic of the Congo. Knowledge of such data helps to improve the care of hospitalized patients. Thus, we initiated this study with the aim of identifying the main pathologies encountered in the neurology department of the Loandjili General Hospital in order to define the epidemiological, clinical and evolutionary profile of hospitalized patients.

## 2. Methodology

This was a cross-sectional descriptive study, carried out from January 1, 2020 to December 31, 2021, i.e. a period of 24 months, in the neurology department of the General Hospital of LOANDJILI (HGL) located in the department of Pointe -Noire, one of the twelve (12) departments of the Republic of CONGO.

Were included all patients regardless of age and sex, hospitalized during the study period for a neurological condition, or an exhaustive sampling.

The conduct of the survey consisted of progressive data collection during the study period. Anamnestic and clinical data were collected through careful clinical examination. The interrogation made it possible to note the age, the gender, the laterality, the profession, the marital situation, the place of residence and to specify the time of admission in the neurology department, that is to say the time interval s' elapsing between the onset of symptoms and admission to the neurology department. The examination also consisted of

taking a personal and family history. At the end of the clinical examination, paraclinical examinations were carried out, thus making it possible to determine the type of pathology (vascular, infectious, traumatic, inflammatory, degenerative, tumor) and to establish the lesion diagnosis (encephalic, medullary), root). The hospital follow-up of the patients made it possible to define the future of the patients (discharge, death, transfer to another department) but also to determine the duration of hospitalization of the patients.

Data entry was done in Excel, data processing and analysis was performed with SPHINX Plus software.

## 3. Results

During the study period, 734 patients were hospitalized in the department. The average age was  $57.28 \pm 14.95$  years, i.e. a coefficient of variation of 26.09 with extremes of 12-95 years, of which 52.7% of men and 47.3% of women, i.e. a sex ratio of 1.1

Figure 1 shows the distribution of patients by age group.

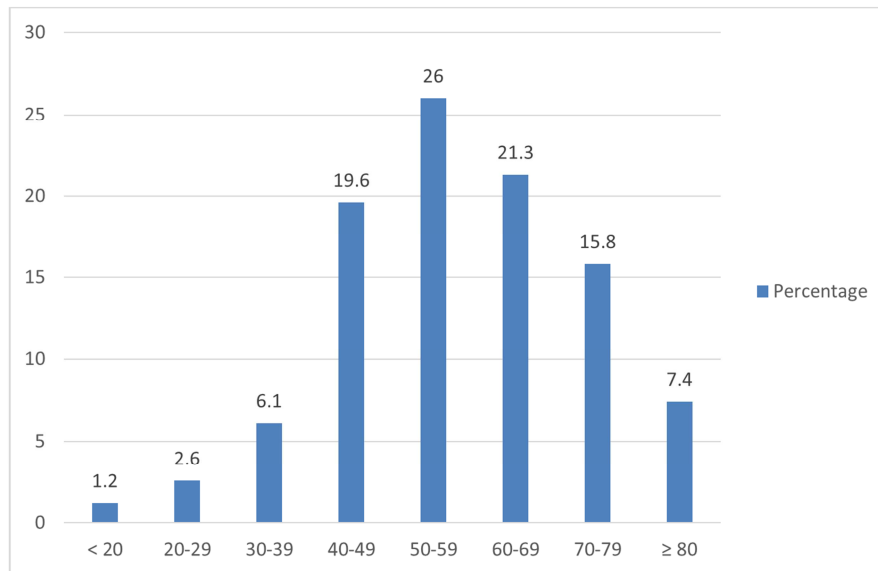


Figure 1. Distribution of patients by age group.

Figure 2 shows the distribution of patients according to their place of origin.

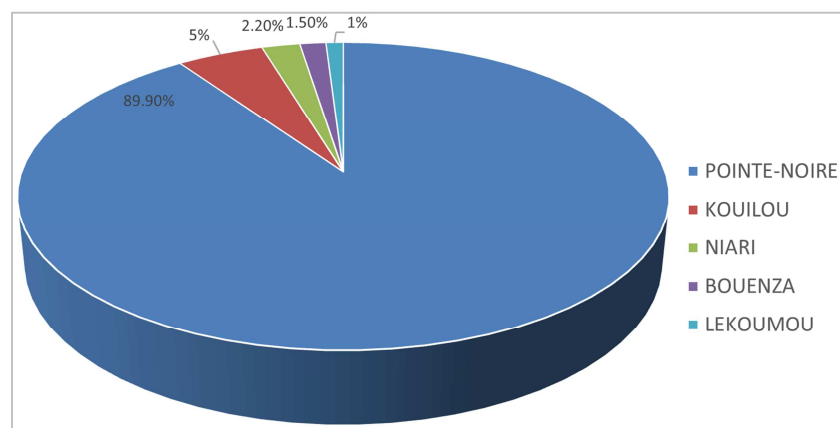
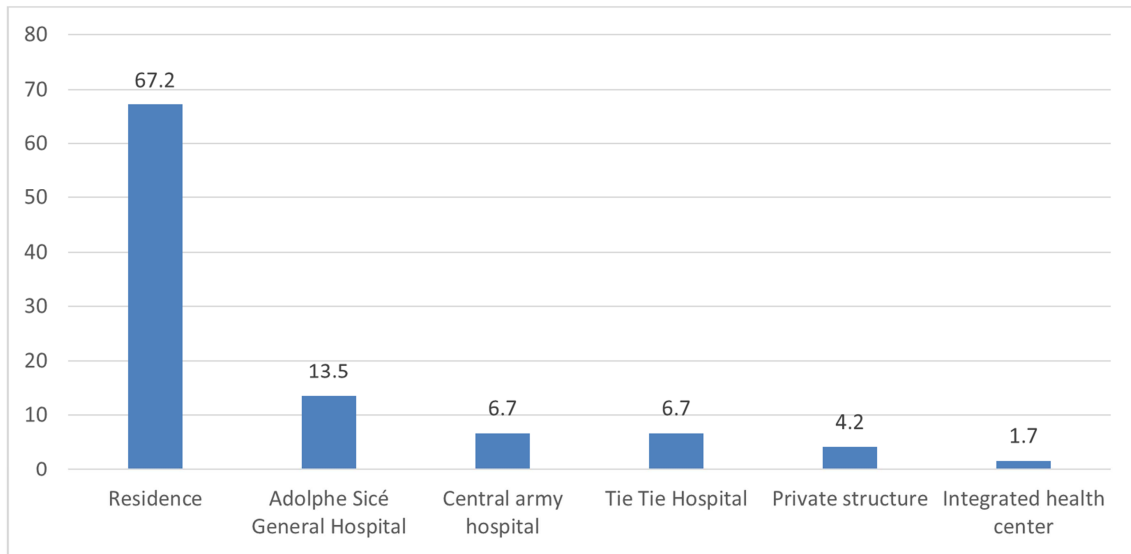


Figure 2. Distribution of patients according to their place of residence.

The distribution of resident patients in the department of Pointe-Noire according to their origin is shown in Figure 3.



**Figure 3.** Distribution of patients residing in Pointe-Noire according to their origin.

The antecedents and risk factors are shown in Table 1.

**Table 1.** Patient history and risk factors.

History/ risk factors	Numbers	Percent (%)
High blood pressure	491	66,9
Alcohol	220	30
Stroke	105	14,3
Diabetes	77	10,5
Tobacco	55	7,5
HIV	44	6
Heart disease	7	1
Tuberculosis	5	0,7
Epilepsy	3	0,4
Chronic headache	2	0,3

The average time to admission to neurology from onset of symptoms was  $7 \pm 25$  days with a coefficient of variation of 350 days and extremes ranging from the first 24 hours to 16 months after onset of symptoms. The clinical signs of the patients are shown in Table 2.

**Table 2.** Clinical signs of patients.

Clinical signs	Numbers	Percent (%)
Motor déficit	590	80,4
Headache	276	37,6
Sensory disorder	245	33,4
Altered consciousness	176	24
Infectious syndrome	135	18,4
Aphasia	126	17,2
Seizure	116	15,8
Dysarthria	86	11,7
Swallowing disorder	27	3,7
Alternate syndrome	14	1,9
Visual disturbance	9	1,2

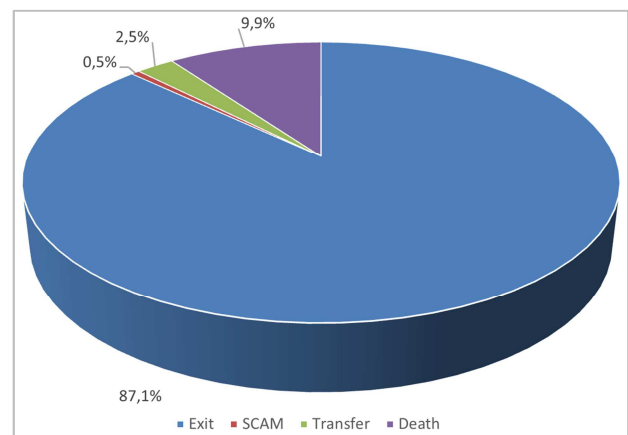
The different aetiologies are shown in Table 3.

**Table 3.** Breakdowns of the different aetiologies.

Etiologies	Numbers	Frequency (%)
Vascular	643	87,6
Infectious	64	8,7
Degenerative	6	0,8
Epilepsy	5	0,7
Metabolic	5	0,7
Tumor	5	0,7
Toxic	3	0,4
Traumatic	2	0,3
Inflammatory	1	0,1
Total	734	100

The mean hospital stay was  $8.67 \pm 5.39$  days, or a coefficient of variation of 62.16 days, with extremes of 1 to 56 days.

Figure 4 represents the fate of patients.



SCAM: exit against medical advice

**Figure 4.** Becoming patients.

Table 4 represents the evolution of patients according to each type of disease

**Table 4.** Evolution of patients according to the type of disease.

Pathologies	N	%	Average age (year)	Admission time (day)	Hospital stay (day)	Mortality	
						N	%
Vascular	643	87,6	59,18	4,72	8,67	57	7,8
Infectious	64	8,7	43,23	24,03	9,23	16	2,1
Degenerative	6	0,8	49,83	21,33	8,67	0	0
Epilepsy	5	0,7	32,40	2,60	4,60	0	0
Métabolic	5	0,7	43,20	7,40	4,60	0	0
Tumor	5	0,7	49,00	24,40	9,20	0	0
Toxic	3	0,4	41,00	1,67	11,00	0	0
Traumatic	2	0,3	64,50	186,00	7,00	0	0
inflammatory	1	0,1	47,00	10,00	2,00	0	0
Total	734	100	57,28	7,16	8,67	73	9,9

## 4. Discussion

The mean age of our study was 57.3 years with a sex ratio of 1.1 in favor of men (52.7%), which is consistent with the data in the literature [1, 3, 7, 8]. Hospitalized patients reside mainly in the Pointe-Noire department, 89.9% of patients. The rest of the patients came from other departments, namely Kouilou (5%), Niari (2.2%), Bouenza (1.5%) and Lékoumou (1%). Three patients or 0.4% came from Cabinda, an Angolan locality. The patients residing in Pointe-Noire come mainly from the home and the General Hospital Adolphe Sicé. In the light of the foregoing, the creation of other neurology services in the sub-region and in Pointe-Noire in particular will make it possible to take charge of the various neurological conditions in a specialized, rapid and efficient manner by reducing the waiting time. admission (average time to admission to the service is  $7\pm 25$  days) and late care. Added to this is the low socio-economic level of the patients, making it impossible to meet all the expenses inherent in the management of a neurological condition. Indeed, the cost of brain or spinal imaging (CT or MRI) alone is greater than or equal to the Congolese minimum interprofessional growth wage (SMIC) set at ninety thousand CFA francs, or one hundred and forty euros. In Africa, this delay is still a scourge; recourse to traditional medicine, the systematic non-referral of patients to the neurology department and more generally the long admission period being responsible for late treatment [3, 9]. The establishment of a health insurance system and the holding of training in other health centers are solutions that will considerably reduce the time taken to take charge of neurological conditions.

The most frequently noted history is high blood pressure, diabetes mellitus, alcohol and tobacco use, and HIV infection, as evidenced by literature data [3, 7, 10]. These risk factors are all involved in the occurrence of neurological conditions, in particular strokes and neuropathies [3, 11, 12]. In addition, the concomitant presence of high blood pressure and diabetes mellitus significantly increases the risk of developing cerebrovascular disease [10, 13]. Primary prevention, based on awareness and early management of these risk factors will no doubt reduce the incidence of these conditions and also the morbidity and mortality associated with these pathologies.

Vascular pathology (87.6%) and infectious pathology (8.7%) were the most observed aetiologies in our series. Our results corroborate those of several authors claiming that stroke is the most common pathology in neurology departments, followed by infections of the central nervous system. [1, 3, 7, 8, 10]. The occurrence of central nervous system infections is often associated with HIV infection in many studies. Indeed, the ESIS study conducted in 2009 in the Republic of Congo revealed that the department of Pointe-Noire is the second department with the highest prevalence of HIV infection. The other neighboring departments where our patients come from also have a high prevalence, in particular Lékoumou (4.8%) and Niari (4.4%), respectively first and third departments in order of frequency [14].

Degenerative, metabolic, tumor, epileptic disease and traumatic pathology each represent around 0.7% of neurological disorders. The low frequency of these pathologies in neurology departments is found in several studies [2, 3]. In our context, this is justified by the fact that the hospital has a neurosurgery department in which these pathologies are treated. Moreover, traumatic and tumor pathologies are the main reasons for hospitalization in this department [15, 16].

Neurological diseases are a major global public health problem, due to their morbidity and mortality and the disability they cause, thus causing socio-economic repercussions. The mean hospital stay was  $8.67\pm 5.39$  days, comparable to that found in the literature [1, 3, 8, 10]. Although lower than that found in other African studies, the death rate remains high in our country. In fact, hospital mortality during our study was 9.9%, comparable to that observed in many countries of sub-Saharan Africa. This is the case of Douala in Cameroon where it stands at 19.1%, Bamako in Mali 22.3% and Abidjan in Ivory Coast 23.5% [1, 7, 8]. This low rate could be explained by the size of the sample during their studies.

## 5. Conclusion

The major neurological conditions in the neurology department are strokes and infections of the central nervous system. The epidemiological and evolutionary profile is similar to that found in several studies in sub-Saharan Africa.

Knowledge of these data justifies primary prevention through awareness raising in the general population, the establishment of a health insurance system, the creation of other neurology services in order to reduce the delay in taking charge of the various ailments.

## Conflict of Interest

The authors declare that they have no competing interests.

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