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# Etiology and Treatment of Parkinsonian Syndrome at the Neuropsychopathological Centre of Kinshasa, in the Democratic Republic of Congo (DRC) About 33 Cases and Review of the Literature

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**Keywords:** Parkinsonian Syndrome; Etiology; Therapy; DRC

**ABSTRACT**

**Introduction:** Parkinsonian syndrome is one of the neurological syndromes that are still poorly diagnosed. The objective of this work is to determine the epidemiological, etiological aspects and therapeutic orientations of parkinsonian syndromes at the Neuropsychopathological Centre of Kinshasa.

**Patients and Methods:** We conducted a retrospective and descriptive study covering a period of 5 years from January 1, 2011, to December 31, 2015, at the Neurology Department of the Neuropsycho Pathological Center of Kinshasa.

**Results:** The survey showed that parkinsonian syndrome represented 1.62% of admissions in the neurology department. The average age of onset was 63.12±11.02 years. Men were more represented than women with a sex ratio of 4.5. All patients had consulted for tremors occurring at rest. A history of arterial hypertension isolated or associated with other cardiovascular and neurological pathologies was noted in 58.58% of our patients. The clinical characteristics were completely identical to those detailed in the literature in case of Parkinsonian syndrome. The degenerative etiology (Parkinson's disease) remains the most predominant at 61% of cases.

**Conclusion:** The etiological diagnosis of a parkinsonian syndrome remains an important medical utility in neurology. It requires a thorough clinical examination focused mainly on the search for common causes in order to specify the management.

## Introduction

The parkinsonian syndrome is, after the dementia syndrome, the most frequent expression of neurodegenerative diseases. They are still poorly diagnosed in our environment from the etiological point of view and thus pose a problem of adapted therapy [1]. This frequent syndromic entity is widespread throughout the world. It affects all communities and all races. However, its prevalence is variable. In Europe, it ranges from 7 to 450 cases per 100,000 inhabitants, with extremes ranging from 65.6 to 1200 cases per 100,000 inhabitants [2]. This syndrome seems to be more frequent in developed countries. Its prevalence is estimated at 2.2% in the Netherlands, 1.7% in China and 2.1% in the United States [3]. In Africa and in Democratic Republic of Congo in particular, very few data exist in the literature. The etiological diagnosis of Parkinsonian syndrome is not easy. Hence the choice of this topic in order to

raise the awareness of clinicians on the different etiologies of this syndrome and the diagnostic procedure to use in order to promote adequate therapeutic orientations.

### Patients and Methods

This was a retrospective study done at the Neuro-Psycho Pathological Centre of the University of Kinshasa, on patients followed for parkinsonian syndrome at the neurology department during 5-years from January 2011 to December 2015.Were included in this study all patients without distinction of age, sex, and origin in the city of Kinshasa, admitted to the neurology department of the NeuropsychoPathological Centre and presenting with parkinsonian syndrome. We used registration registers and patient consultation forms to collect the necessary data. This survey was carried out using a data collection form. The parameters of interest in the study were: Socio-demographic characteristics: (Sex, age), Clinical data: (reasons for consultation, personal history focusing on the search for arterial hypertension, stroke, drug use e.g., heroin addicts, cranioencephalic trauma, taking neuroleptics, stay in an endemic area for sleeping sickness). Clinical data (resting tremor, akinesia, hypertonia). Para clinical data: Biology (white blood cell count; leukocyte formula; sedimentation rate; CRP; immunoglobulin rate including IgG and IgM; lumbar puncture, hepatic transaminases); Morphological imaging such as brain CT scan and MRI (brain magnetic resonance) The diagnosis of the etiology of the parkinsonian syndrome after the realization of a confirmatory paraclinical. The collected data was analyzed using descriptive statistics with the help of Epi-info and EXCEL 2016 software.

## Results

During our study period, we had a sample of 2034 patients admitted to the neurology department, of which only 33 presented with an extra pyramidal syndrome of the parkinsonian type, i.e., an incidence of 1.62%. The sex most concerned was male with 81.82%. The annual incidence varied between 15.15% and 21.21% with a high peak in 2013, i.e., 27.27%. The age most concerned was that of subjects over 50 years with 84.85% and the average age was 63.12±11.019 years and with extremes of age from 35 to 80 years. High blood pressure isolated or associated with neurological pathologies was predominant with 78.95%. The 100% of patients complain about tremors. The dominant symptoms (tremors) were mostly of progressive onset (69.70%), with a predominance of tremors occurring at rest (96.97%), and hypomimia was predominant (72.73%). Almost of patients had a fixed attitude (90.91%). Akinesia predominated in ¾ of cases (72.73%).84.85% of cases presented a plastic hypertonia. The state of consciousness was normal in 84.85% of cases. Complementary examinations were made of 100% normal inflammatory and Blood workup, Liver function Normal in 96.70%, Kidney function Normal in 88.89%, Blood Ionogram Normal in 96.30%, Cerebral CT-Scan Normal in 57.58%, EEG was Physiological in 87.88%. The etiologies were multiple. However, degenerative etiologies were predominant (61%).

## Discussion

For 5 years, 2035 patients were admitted to the department of neurology of which 33 cases had presented an extrapyramidal syndrome of the Parkinsonian type (i.e., an incidence of 1.62%). The author [4] in 2013 observed at the University Clinics GABRIEL TOURE in Mali, 60 cases of Parkinson's syndrome for 1 year or an incidence of 1.79% for a sample 3342. The difference in incidence in these two series lies in the fact that the study environment of [5] would be more frequented than ours and the accessibility to care of patients in his series played a great role. This incidence of 1.62% found in our series means that Parkinson's syndrome is still under-diagnosed in the Neurology Department of the Neuropsychopathological Centre of Kinshasa. The male sex constitutes the most affected gender with a sex ratio of 4.5 in our series, same thing also reported exactly by [6], having found during his study a sex ratio of 1.72, in favor of the male sex. This male predominance can be explained by the fact that men would be more exposed to different risk factors (toxins, infections) precipitating a degeneration of the basal ganglia or leading to the disruption of their functions responsible for extrapyramidal manifestations such as the parkinsonian syndrome.

The human brain in general and the basal ganglia in particular undergoes a physiological degeneration of which age is the main factor and the starting point of the extra-pyramidal damage responsible for the extrapyramidal manifestations of parkinsonian type. The age of our patients ranged from 35 to 80 years with an average of 63.12±11.02 years. Patients over 50 years of age were the most interested with 84.85% of cases overall. Our results were similar to those of [7] who observed in his study that patients over 50 years were the most exposed to make the parkinsonian syndrome or 83.3%. The fragility of the senile population to contract at the slightest exposure various affections (TBC, AIDS,) able to entrainer also an extrapyramidal attack remains another reason of presentation of the parkinsonian syndrome at advanced age. The history of the patients plays an important role in the diagnostic and etiological study of the parkinsonian syndrome. In our study, 58.58% of our patients had pathological history among which the history of isolated high blood pressure represented 21.21%; 9.1% history of high blood pressure associated with cranioencephalic trauma; 6.06% hypertensive having made the stroke;6.06% were known diabetic hypertensives; 3.03% were diabetic hypertensives with a history of head injury, 3.03% of isolated stroke; 3.03% diabetics with no other pathological history and finally 6.06% of patients

with a history of isolated head injury. The literature [8] has reported 65% of cases with a history of isolated high blood pressure. This leads us to deduce that isolated or associated high blood pressure would also be a factor aggravating the extrapyramidal damage. The various metabolic disorders caused by this pathology as well as the cerebral perfusion disorders can lead to the disturbance of the functioning of the extra pyramidal pathway, the frequent expression of which is the parkinsonian syndrome.

The diagnosis of parkinsonian syndrome is still based on the history. The common signs are tremors at rest, akinesia and hypertonia [5]. In our survey the majority of patients had consulted for tremors at rest; the mode of installation was progressive in 69.70%; akinesia noticed in 72.73% of cases; 84.85% of cases in our series presented plastic hypertonia; mimicry was reduced in 72.73% patients; the state of consciousness was normal in 84.85%. These results concurred with the data of [8] and the medical literature. Complementary examinations allow to elaborate the probable etiology of the parkinsonian syndrome and guide the management [5]. In our study, we noticed that the majority of the patients having realized these paraclinical assessments, had a normal inflammatory and blood balance in the totality of the cases; hepatic function and renal function were Normal; the blood ionogram Normal; cerebral CTScan Normal; EEG Normal. It should be noted that the majority of these complementary tests were carried out at study milieu, with the exception of the cerebral CT scan and EEG, which were carried out in other health facilities, on the one hand because of the lack of cerebral CT scans at the Kinshasa Neuropsychopathological Centre, and on the other hand because of the patients' desire to carry out the electroencephalogram elsewhere. We therefore observed that most of the complementary examinations carried out were normal (86.78%), which is justified by the fact that the paraclinical examination of the parkinsonian syndrome depends on the etiologies involved. Degenerative etiologies were predominant in 61% of cases; vascular etiologies represented 18% of cases; 15% of traumatic etiologies and 6% of tumor etiologies. The author [8] observed in his study that the majority of the extra pyramidal syndrome of the parkinsonian type was of degenerative origin or Parkinson's disease, i.e., 100%. These results are close to ours where approximately more than half of the cases in our study had a degenerative parkinsonian syndrome (Parkinson's disease) with 61% of cases. This can be justified on the one hand by the fact that the theory shows that the frequent parkinsonian syndrome remains the Parkinson's disease because of the age of predilection of appearance (in the third age), in which the cerebral degeneration as well as that of the basal ganglia is noted being at the base of the occurrence of this syndrome.

## Conclusion

The etiological diagnosis of a parkinsonian syndrome remains of important medical utility in neurology. It requires a thorough clinical examination focused mainly on the search for common causes in order to specify the management.

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