IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)
e-ISSN: 2279-0853, p-ISSN: 2279-0861.Volume 21, Issue 6 Ser.2 (June. 2022), PP 49-54
www.iosrjournals.org

Comorbidities of Late Epilepsy in Algeria

Abdellaoui Walid[1], Ait Oukaci Wassila[2], Abdellaoui Youssef [3], Badache Kenza[4], Sadibelouiz Mustapha[5], Ait-Kaci-Ahmed Mahmoud[5], Amer-El-Khedoud Wahiba[1]

[1]*Neurology Department, Ben-Aknoun Hospital, University of Algiers, Algiers, Algeria*
[2]*Neurophysiology Department, Ait Idir Hospital, University of Algiers, Algiers, Algeria*
[3]*Ivybridge Community College, United Kingdom*
[4]*Neurosurgery Department, Mustapha Pacha Hospital, University of Algiers, Algiers, Algeria*
[5]*Neurology Department, Ait Idir Hospital, University of Algiers, Algiers, Algeria*

Abstract:
Background*: Epilepsies are the most common chronic disabling neurological conditions. Their average prevalence is estimated at 5 to 8 per 1000 individuals; it is about the same in all countries. Late onset epilepsies are always suspicious and often raise the issue of their etiology, are distinguished by clinical, etiological, prognostic and sometimes even therapeutic specificities. The objective of our study was to determine the history and comorbidity aspects of late epilepsy in the Algerian population.*
Materials and Methods*: The study population includes all Algerian patients whose age of onset of the first seizure is 25 years or more, recruited during the period from January 2008 to December 2016 at ALI AIT IDIR Hospital in Algiers.*
Results*: Among 336 patients with late epilepsy seen between 2008 and 2016. 63% of our patients did not have a medical history. 50% of patients with a cardiovascular history had arterial hypertension; approximately 21.6% had non-insulin-dependent diabetes. There is also 18.2% ischemic heart disease and 4.5% hypercholesterolemia. Three cases with a history of neoplasia without brain metastases. Febrile seizures (8 cases), followed by head trauma (4 cases).*
Conclusion*: The majority of our patients did not have a medical history (63%). Not surprisingly, the importance of the cardiovascular history is noted, bearing in mind that vascular causes are the main etiology of late epilepsies. We note the importance of high blood pressure and diabetes. The study of neurological history shows that the majority of our patients had febrile seizures. Febrile seizures were twice as common as head trauma and multiple sclerosis. We found three cases with a history of neoplasia without brain metastasis. Breast cancer is twice as common as melanoma.*
Key Word*: Late onset, Late epilepsy, Comorbidities, Cardiovascular history.*

Date of Submission: 01-06-2022 Date of Acceptance: 13-06-2022

I. Introduction

Epilepsy is the recurrence of epileptic seizures. The notion of recurrence is defined by the appearance of at least two seizures, more than 24 hours apart. Thus, the appearance of multiple seizures in a 24-hour period, or of a status epilepticus, is considered as a single event and is not sufficient to speak of epilepsy.

According to the consensus definition of the international league against epilepsy ILAE and the International Bureau for Epilepsy IBE 2005:

Epilepsy is a brain disorder characterized by a lasting predisposition to induce epileptic seizures and by the neurobiological, cognitive, psychological and social consequences of this condition. The definition of epilepsy requires the occurrence of at least one epileptic seizure.

The International League Against Epilepsy ILAE has accepted recommendations from a working group modifying the working definition in special circumstances that do not meet the criterion of two unprovoked seizures (Robert S. Fisher et al, 2014).

The working group proposed to consider epilepsy as a brain disease defined by any of the following manifestations: (1) occurrence of two or more unprovoked (or reflex) seizures more than 24 hours apart; (2) occurrence of one unprovoked (or reflex) seizure and likelihood of subsequent seizures over the next 10 years similar to the general risk of recurrence (at least 60%) observed after two unprovoked seizures; (3) diagnosis of an epileptic syndrome. Late epilepsy is an epileptic disease whose first epileptic seizure begins from the age of 25 years.

II. Material And Methods

The study population includes all Algerian patients whose age of onset of the first seizure is 25 years or more, recruited at ALI AIT IDIR Hospital in Algiers.

Inclusion criteria:

1. The age of the patients must be greater than or equal to 25 years at the time of inclus.
2. Patient presenting with his first epileptic seizure at the age of 25 years or older.
3. Clinically and electrically confirmed diagnosis of epilepsy.

Exclusion criteria:

1. Age less than 25 years

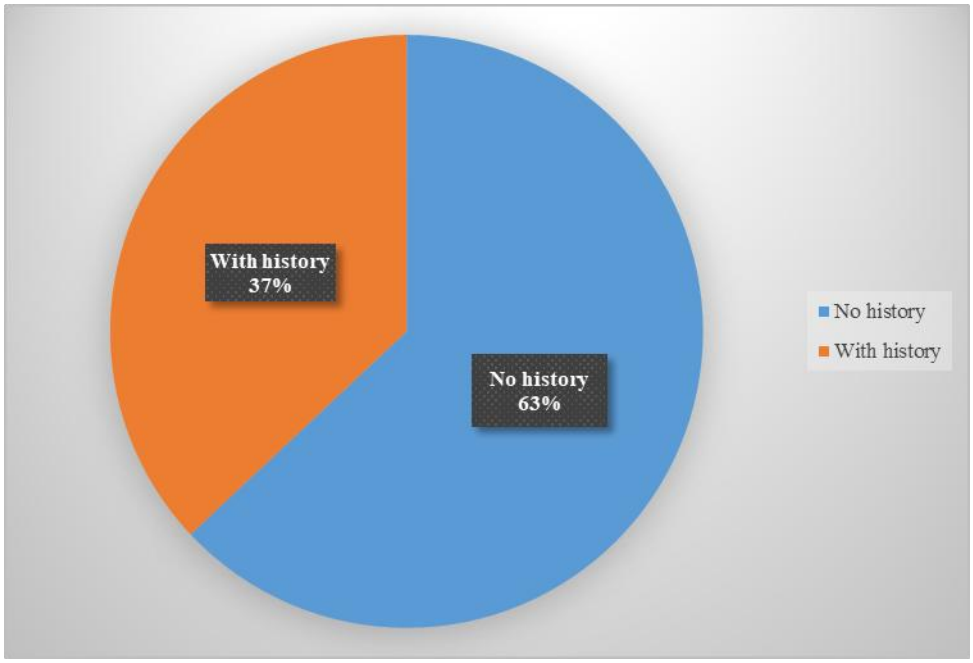
III. Results

Our study population includes 336 patients, recruited during the period from January 2008 to December 2016. This figure corresponds to the number of patients selected according to the inclusion criteria.

Table 1. Distribution of patients according to personal history

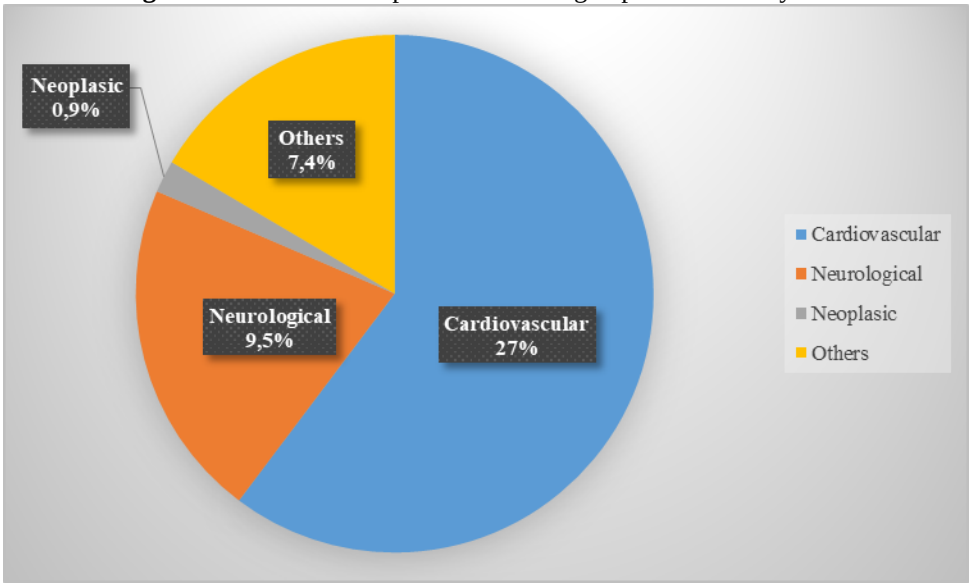
Personal history	Cases	%
Cardiovascular	91	27
Neurological	32	9,5
Neoplasic	3	0,9
Others	25	7,4
No history	212	63
Total	**336**	**100**

Figure 1. Frequency of patients with no personal history



The majority of our patients did not have a medical history 63%.

Figure 2. Distribution of patients according to personal history



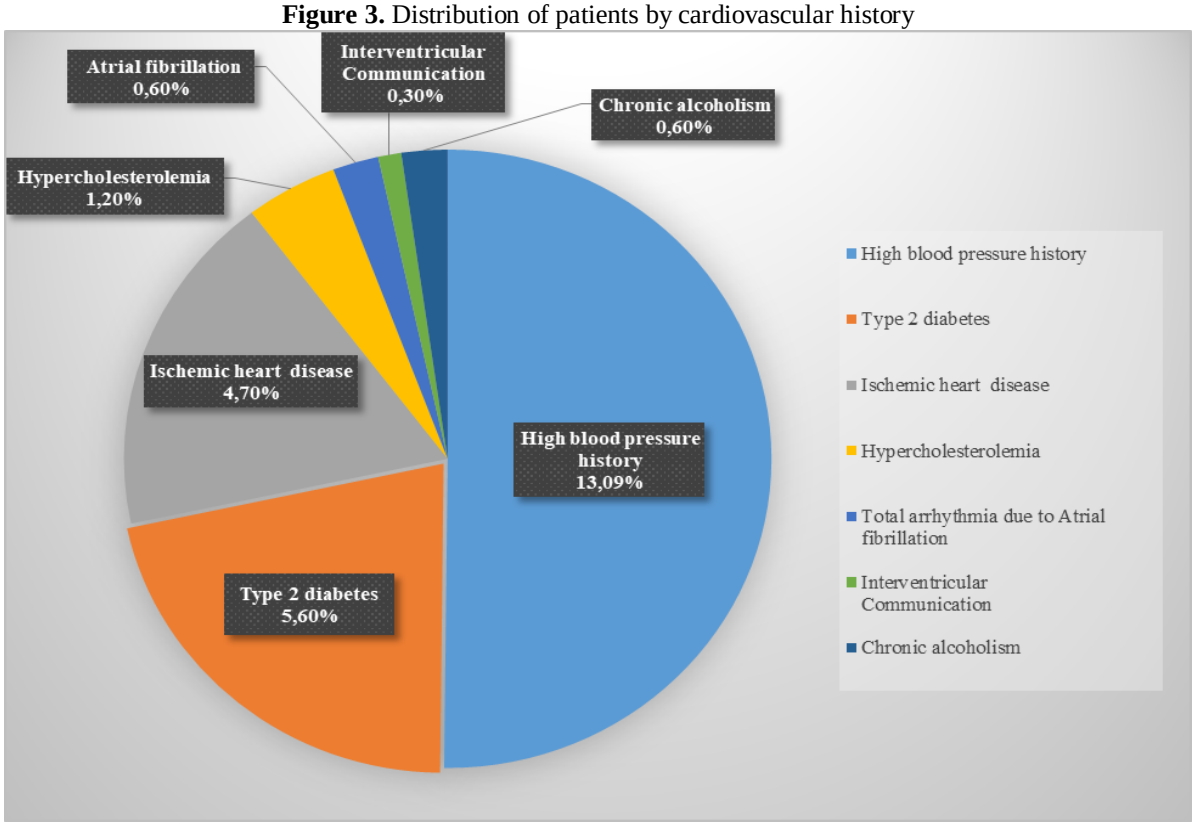
Not surprisingly, the importance of the cardiovascular history is noted, bearing in mind that vascular causes are the main etiology of late epilepsies.

Table 2. Distribution of patients according to cardiovascular history

Cardiovascular history	**cases**	**%**
	88	**26,1**
High blood pressure history	44	13,09
Type 2 diabetes	19	5,6
Ischemic heart disease	16	4,7
Hypercholesterolemia	4	1,2
Total arrhythmia due to Atrial fibrillation	2	0,6
Interventricular Communication	1	0,3
Chronic alcoholism	2	0,6
Total	**336**	**100**

If we examine the details of the vascular history, we note the importance of high blood pressure and diabetes.

Figure 3. Distribution of patients by cardiovascular history

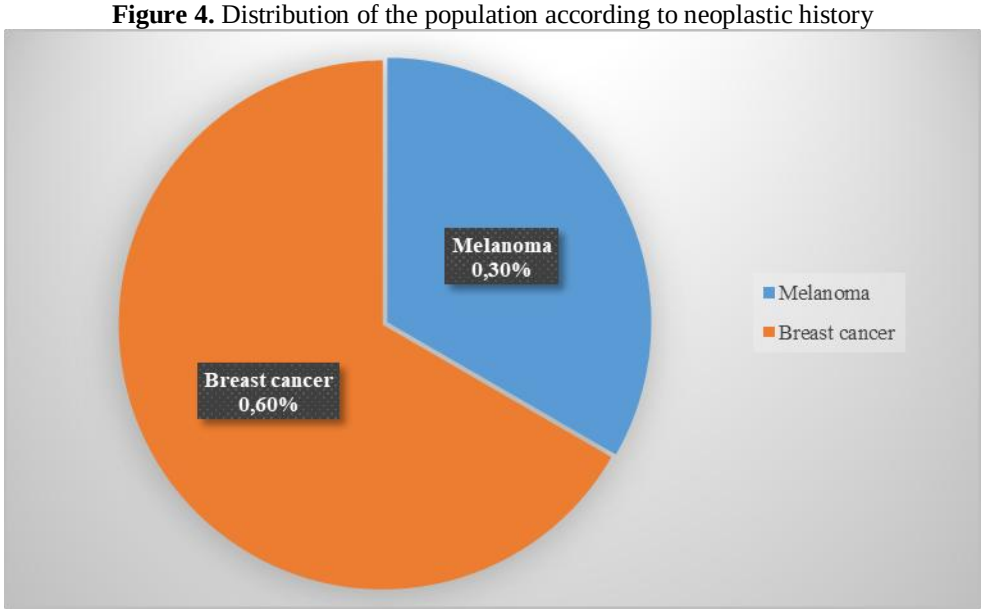


50% of patients with a cardiovascular history had arterial hypertension, approximately 21.6% type 2 diabetes. There is also 18.2% ischemic heart disease, and 4.5% hypercholesterolemia.

Table 3. Distribution of patients according to neoplastic history

	Cases	%
Neoplasia	**3**	**0,9**
Melanoma	1	0,3
Breast cancer	2	0,6
Total	**336**	**100**

Figure 4. Distribution of the population according to neoplastic history



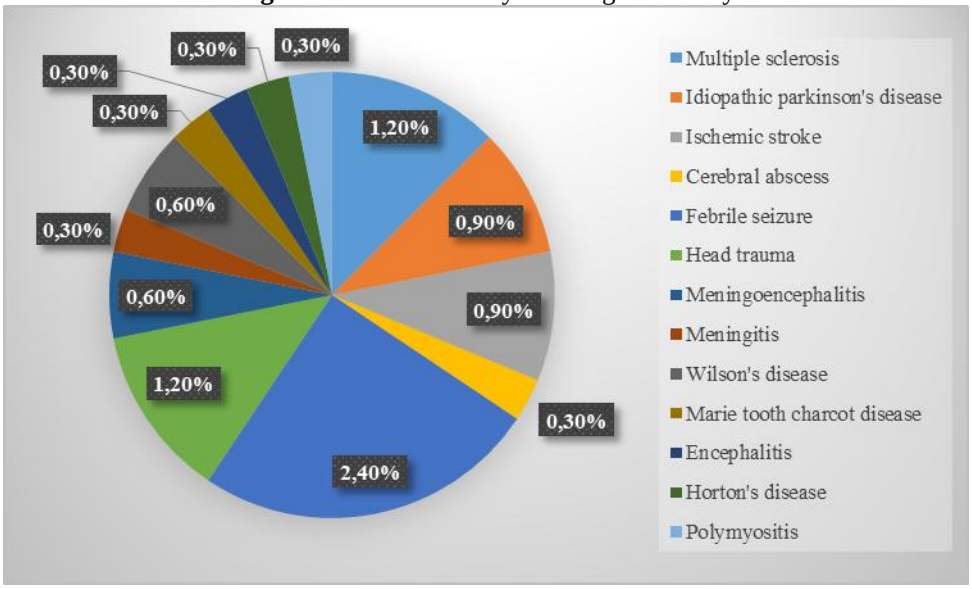
In our study, we found three cases with a history of neoplasia without brain metastasis. Breast cancer is twice as common as melanoma.

Table 4. Breakdown by neurological history

	Cases	%
Neurological diseases	32	9,5
Multiple sclerosis	4	1,2
Idiopathic parkinson's disease	3	0,9
Ischemic stroke	3	0,9
Cerebral abscess	1	0,3
Febrile seizure	8	2,4
Head trauma	4	1,2
Meningoencephalitis	2	0,6
Wilson's disease	2	0,6
Marie tooth charcot disease	1	0,3
Encephalitis	1	0,3
Horton's disease	1	0,3
Polymyositis	1	0,3
Total	**336**	**100**

If we take into account only the neurological history, we find a predominance of febrile seizures (8 cases), followed by head trauma (4 cases).

Figure 5. Distribution by neurological history



The study of neurological history shows that the majority of our patients had febrile seizures.

IV. Discussion

63% of patients have no history, this figure is close to the study by Andre Oun et al, 2003 [2], with a rate of 60.4%. Cardiovascular history is predominant with 27%, followed by neurological history 9.5%, neoplastic 0.9%. The cardiovascular antecedents mainly affect the age group 70-74 years (hypertension 50%, type 2 diabetes 21.6%). In addition, the neoplastic antecedents are represented by breast cancer 66.7% and melanoma 33.3%.

We observe various neurological antecedents with a predominance of febrile seizures 2.4%, followed by head trauma and multiple sclerosis with a rate of 1.2%.

The place of febrile seizures in our study should be underlined in particular. These results are consistent with those reported in the literature. Marcelo Rigatti, et al. 1999 [3], had found a rate of 5%. Anthony Hopkins et al. 1988 [7], noted a rate of 3.8%.

37% of patients had one or more associated pathologies, the distribution of comorbidity is significantly different according to sex and age group, with a high rate in the group of female subjects aged 35-39 years and

in the group of male patients aged 60-64 years. Unfortunately, we do not have data from the literature on comorbidity.

Christian Napon et al, 2009 [6], had found a rate of 16.2%, this is explained by the high number of patients with familial epilepsy.

We can also note that in the history of other pathologies bronchial asthma represents 36% of cases, hypothyroidism 20%, other causes 4%.

Table 6. Literature review of medical history and comorbidity

Study	Cardiovascular causes	Neoplasia	Febrile convulsion	Head trauma	Multiple Sclerosis	CNS infection	No medical history	Comorbidity
Marcelo Rigatti et al, 1999	ND	ND	5%	ND	ND	ND	ND	ND
Andre Oun et al, 2003	6.6%	4.8%	ND	13.4%	ND	4.3%	60.4%	ND
Christian Napan et al 2009	ND	ND	ND	4.5%	ND	18%	ND	ND
Our series	**27%**	**0.9%**	**2.4%**	**1.2%**	**1.2%**	**1.5%**	**63%**	**37%**

ND: Not Documented

V. Conclusion

Our study population includes 336 patients, recruited during the period from January 2008 to December 2016. These patients were selected according to the inclusion criteria.

During the study period, 336 cases of late epilepsy were diagnosed, representing a proportion of late epilepsy of 34% compared to all epilepsy.

The majority of our patients did not have a medical history 63%. Not surprisingly, the importance of the cardiovascular history is noted, bearing in mind that vascular causes are the main etiology of late epilepsies. The cardiovascular history is predominant with 27% of cases. We note the importance of high blood pressure and diabetes. 50% of patients with a cardiovascular history had hypertension, approximately 21.6% had type 2 diabetes. There are also 18.2% ischemic heart disease, and 4.5% hypercholesterolemia. As for vascular causes: ischemic stroke accounts for 25%, hemorrhagic stroke 1.5%, cerebral hemorrhage 4%.

The study of neurological history shows that the majority of our patients had febrile seizures. Febrile seizures were twice as common as head trauma and multiple sclerosis. We found three cases with a history of neoplasia without brain metastasis. Breast cancer is twice as common as melanoma.

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