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Late Epileptic Syndromes in the Algerian population

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Abstract:
Background*: The concept of epileptic syndrome, defined by the "grouping of a certain number of symptoms and signs appearing together in a constant and not fortuitous manner". These symptoms are variously associated depending on the case. Correspond to the different clinical types of seizures, critical and interictal EEG data and neurological and extraneurological manifestations: age at onset of epilepsy, family and personal history, clinical history, neurological and neuropsychological status, imaging data. The objective of our study was to determine late epileptic syndromes 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. Symptomatic epilepsy is also strongly represented with high rates for the age groups (30-34 years, 35-39 years). The distribution of the different epileptic syndromes shows a predominance of symptomatic partial epilepsy in 51.5% of cases (173 cases). Our study also shows a predominance of symptomatic partial epilepsy 51.5% (173 cases), followed by cryptogenic partial epilepsy 21.7% (73 cases) and idiopathic partial epilepsy 1.5% (5 cases). The distribution by age group of partial epileptic syndromes shows high numbers of symptomatic epilepsy for the age groups (30-34 years, 35-39 years). If we take into account generalized epileptic syndromes, we find that cryptogenic epilepsy is the majority with a rate of 14.9% (50 cases). The distribution by age group of generalized epileptic syndromes shows high rates of cryptogenic epilepsy for the age groups (25-29 years, 30-34 years, 35-39 years). We note a predominance of cryptogenic generalized epilepsy (50 cases).*
Conclusion: *Epileptic syndromes were partial in 74.7% of cases, generalized in 25.3%. Symptomatic partial epilepsies were predominant in 51.5% of cases. Cryptogenic partial epilepsy represents 21.7%, idiopathic partial epilepsy 1.5%, cryptogenic generalized epilepsy 14.9%. Symptomatic generalized epilepsies 10.1%, idiopathic generalized epilepsies 0.3%. We also note a predominance of symptomatic epilepsies with the figure of 61.6%. Idiopathic epilepsies represent 1.8%, cryptogenic epilepsies 36.6%.*

Key Word*: Epileptic syndromes, Partial epilepsy, Generalized epilepsy, Symptomatic epilepsy, Cryptogenic epilepsy, Idiopathic epilepsy.*

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I. Introduction

The international classification of epilepsies and epileptic syndromes adopted in 1989 by the classification commission of the International League Against Epilepsy (ILAE) and based on the concept of epileptic syndrome, defined by the "grouping of a certain number of symptoms and signs appearing together in a constant and not fortuitous manner". These symptoms are variously associated depending on the case. Correspond to the different clinical types of seizures, critical and interictal EEG data and neurological and extraneurological manifestations: age at onset of epilepsy, family and personal history, clinical history, neurological and neuropsychological status, imaging data.

Thus, the essential principle of the classification is based on the grouping in the form of epileptic syndromes of patients whose manifestations correspond to certain criteria. This syndromic grouping should make it possible to define a strategy for complementary examinations, a therapeutic strategy and a drug sensitivity profile, to carry out a prognosis and to establish a certain homogeneity in the scientific results.

The nature of the links between the different components of a syndrome is variable. These links can be topographic, based on the succession of clinical manifestations resulting from the physical proximity of cerebral structures; etiological, resulting from the participation of cerebral structures directly involved in the determinism of the syndrome, or physiopathological, in relation to the involvement of one or more functional systems. Often, the nature of the links remains speculative, but the association of these remains constant and significant.

The bases of the classification constituted by two axes, symptomatological and etiopathogenic.

Symptom axis:
We distinguish, as for the classification of seizures:
- epilepsies related to a localization (partial or focal epilepsies) in which the seizures arise from a limited sector of the cortical structures: the epileptogenic focus. A secondary generalization is possible. Critical EEG manifestations are unilateral and focal, at least in any seizure goal.
- generalized epilepsies in which all seizures are generalized type. The motor manifestations, when they exist, are immediately bilateral. Interictal and critical EEG manifestations are characterized by bilateral, synchronous and symmetrical spike, spike-wave, or polyspike-wave discharges.

Etiopathogenic axis:
We distinguish:
- idiopathic epilepsies, which occur independently of any cerebral lesion, the main etiological factor being represented by a real or presumed hereditary predisposition.
- symptomatic epilepsies, which result from a diffuse or focal, progressive or fixed structural lesion of the central nervous system: this lesion can be objectified directly by neuroradiological explorations; if necessary, a neurological deficit or a biological anomaly testifies to its presence.
- cryptogenic epilepsies "whose cause is hidden" are presumed to be symptomatic of an occult cause which escapes our means of investigation (anamnestic, clinical or paraclinical). This category includes epilepsies occurring outside of any proven cerebral lesion but not corresponding to the criteria for idiopathic epilepsies. computed tomography is normal and may be "symptomatic" on nuclear magnetic resonance data.

Epilepsies and syndromes related to a localization (focal, partial), which can be idiopathic, symptomatic or cryptogenic, are thus defined by the conjunction of the two axes, symptomatic and etiopathogenic: generalized epilepsies and epileptic syndromes (idiopathic, symptomatic and cryptogenic), epilepsies and syndromes whose focal or generalized nature is not determined.

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.

1. Distribution of epileptic syndromes

Table 1. Breakdown of epileptic syndromes by age group

	Partial epilepsy			Generalized epilepsy			Total
	Symptomatic epilepsy	Cryptogenic epilepsy	Idiopathic epilepsy	Symptomatic epilepsy	Cryptogenic epilepsy	Idiopathic epilepsy	
25-29years	16	13	4	3	10	0	46
30-34 years	22	9	1	6	8	0	46
35-39 years	22	12	0	6	8	1	49
40-44 years	13	6	0	5	5	0	29
45-49 years	18	5	0	3	1	0	27
50-54 years	14	4	0	4	4	0	26
55-59 years	13	4	0	2	6	0	25
60-64 years	17	5	0	0	1	0	23

65-69 years	11	5	0	2	1	0	19
70-74 years	12	7	0	1	1	0	21
75-79 years	10	2	0	1	3	0	16
80 years and over	5	1	0	1	2	0	9
Total	173	73	5	34	50	1	336

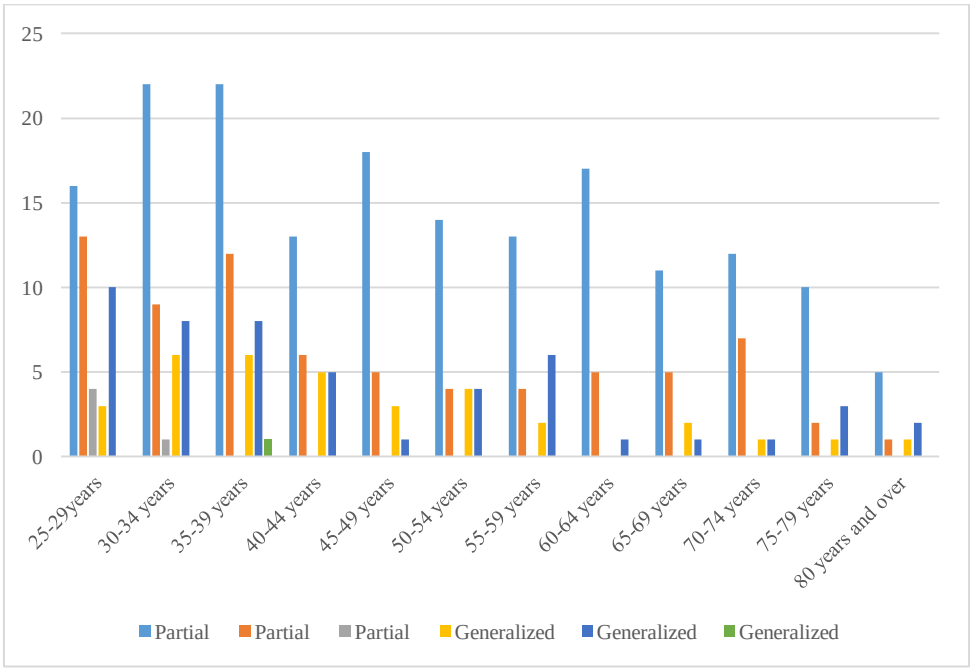

Figure 1. Distribution of epileptic syndromes according to age groups

Symptomatic epilepsy is also strongly represented with high rates for the age groups (30-34 years, 35-39 years)

Table 2. Distribution of epileptic syndromes

	Cases	**%**
Partial symptomatic epilepsy	173	51,5
Partial cryptogenic epilepsy	73	21,7
Partial idiopathic epilepsy	5	1,5
Generalized symptomatic epilepsy	34	10,1
Generalized cryptogenic epilepsy	50	14,9
Generalized idiopathic epilepsy	1	0,3
Total	336	100

The distribution of the different epileptic syndromes in our study shows a predominance of symptomatic partial epilepsy in 51.5% of cases (173 cases).

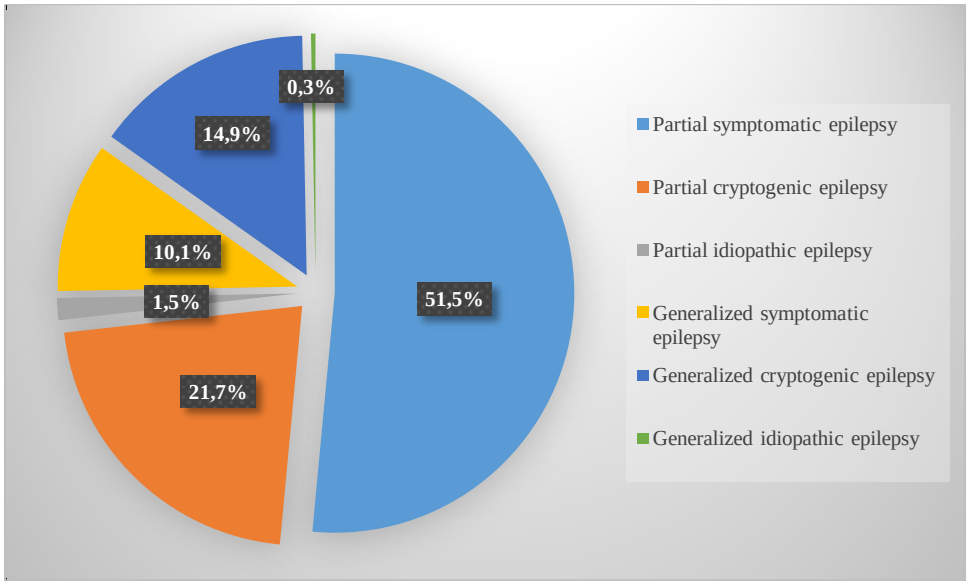

Figure 2. Frequency of epileptic syndromes

2. Distribution of partial epileptic syndromes

Table 3. Frequency of partial epileptic syndromes

		Cases	%
Partial epilepsy		251	74,7
	Symptomatic epilepsy	173	51,5
	Cryptogenic epilepsy	73	21,7
	Idiopathic epilepsy	5	1.5
Total		336	100

Our study also shows a predominance of symptomatic partial epilepsy 51.5% (173 cases), followed by cryptogenic partial epilepsy 21.7% (73 cases) and idiopathic partial epilepsy 1.5% (5 cases).

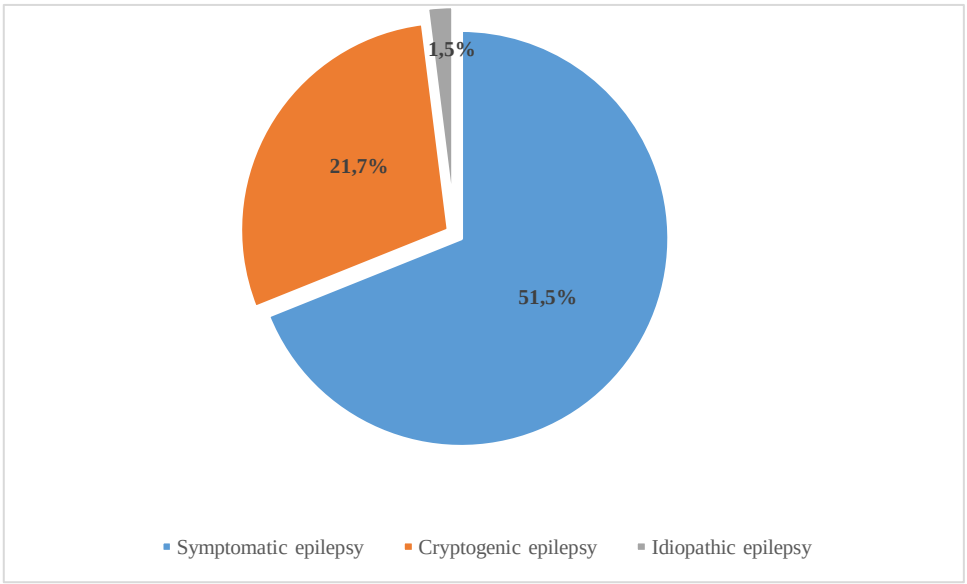

Figure 3. Frequency of partial epileptic syndromes

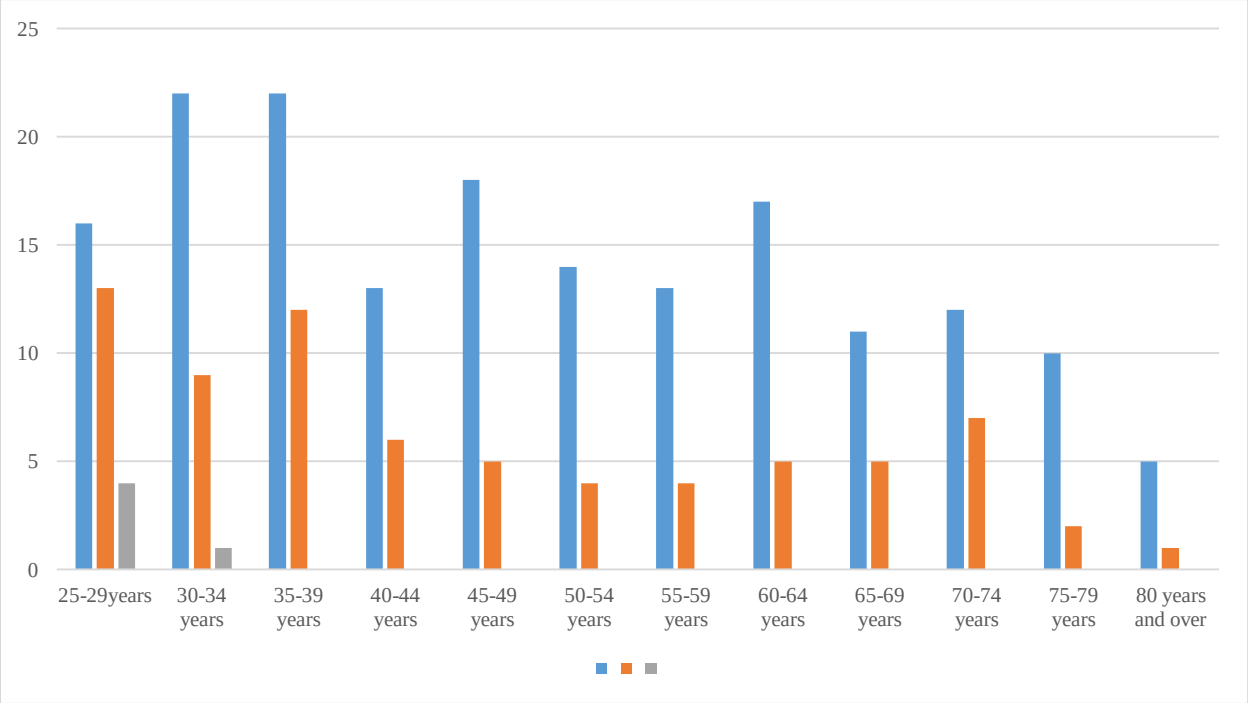

Figure 4. Distribution of partial epileptic syndromes by age group

The distribution by age group of partial epileptic syndromes shows high numbers of symptomatic epilepsy for the age groups (30-34 years, 35-39 years).

3. Distribution of generalized epileptic syndromes

Table 4. Frequency of generalized epileptic syndromes

		Cases	%
Generalized epilepsy		85	25,3
	Symptomatic epilepsy	34	10,1
	Cryptogenic epilepsy	50	14,9
	Idiopathic epilepsy	1	0,3
Total		336	100

If we take into account generalized epileptic syndromes, we find that cryptogenic epilepsy is the majority with a rate of 14.9% (50 cases).

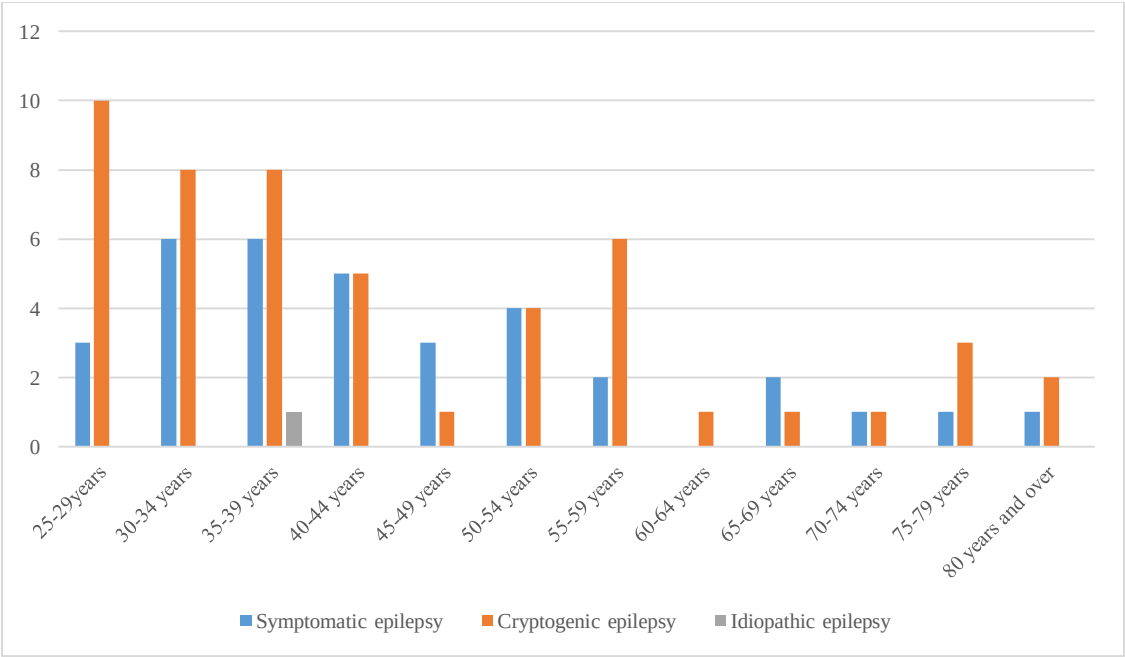

Figure 5. Distribution of generalized epileptic syndromes by age group

The distribution by age group of generalized epileptic syndromes shows high rates of cryptogenic epilepsy for the age groups (25-29 years, 30-34 years, 35-39 years).

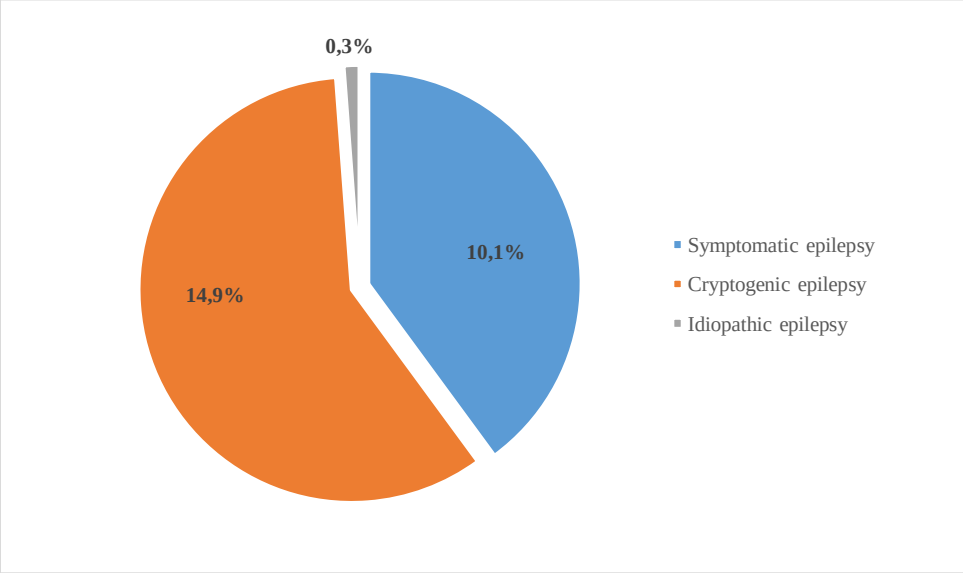

Figure 6. Frequency of generalized epileptic syndromes
We note a predominance of cryptogenic generalized epilepsy (50 cases).

IV. Discussion

Our study shows a predominance of symptomatic partial epilepsies 51.5% (173 cases), knowing that partial epilepsies are also dominant and represent 74.7% of cases (251 patients). Cryptogenic partial epilepsy represents 21.7% (73 patients), idiopathic partial epilepsy 1.5% (5 patients). Generalized epileptic syndromes represent 25.3% of cases including 14.9% (50 cases) cryptogenic epilepsy, symptomatic epilepsy 10.1% (34 cases), idiopathic epilepsy 0.3% (1 case).

We also note a predominance of symptomatic epilepsies with the figure of 61.6% (207 cases), idiopathic epilepsies represent 1.8% (6 cases) and cryptogenic epilepsies 36.6% (123 cases).

The predominance of symptomatic epilepsies is explained by the presence of a high rate of focal lesions on brain imaging.

The distribution by age group of symptomatic partial epileptic syndromes shows a decrease with age, with high rates for age groups (25-29 years, 30-34 years, 35-39 years, 45-49 years, 60-64 years).

Our results contradict the literature data. Agnete Mouritzen Dam et al, 1985 [1], had shown the predominance of symptomatic epilepsies with a rate of 62%, against 38% represented by cryptogenic epilepsies.

In the study by Andre Oun et al, 2003 [2], the distribution by age group shows a high percentage for symptomatic epilepsy 37.6% and cryptogenic 36.6%. The frequency of idiopathic generalized epilepsies is around 5.8%.

Marie-Christine Picot et al, 2008 [3], had found a high percentage for symptomatic epilepsies 60.7%, against 25.30% for cryptogenic epilepsies.

However, our results are different from some studies. For some authors, idiopathic epilepsies are predominant. R.Sridharan et al, 1986 [4] found that idiopathic epilepsies are the majority with 82.5% of cases. Hamdy.N.EL-Tallawy et al, 2012 [5], had shown a predominance of idiopathic epilepsies in 56% of cases, symptomatic epilepsies in 35% of cases, cryptogenic epilepsies in 9% of cases. Belaidi et al, 1986 [6], had found that cryptogenic epilepsy is the majority with a percentage of 56.8%, symptomatic epilepsy 43.2%.

GCY. Fong et al, 2003 [7], found that there was no significant difference between symptomatic epilepsies 38.7% and idiopathic epilepsies 38.7%. The percentage of cryptogenic epilepsies is around 13.6%.

Table 5. Literature review of epileptic syndromes

Study	Country	Symptomatic Epilepsies (%)	Idiopathic Epilepsies (%)	Cryptogenic Epilepsies (%)
Agnete Mouritzen Dam et al, 1985	Denmark	62%	ND	38%
Andre Oun et al, 2003	Estonia	37.6%	ND	36.6%
Marie-Christine Picot	France	66.7%	ND	25.30%

et al, 2008				
R.Sridharan et al, 1986	Libya	ND	82.5%	ND
Hamdy N. EL-Tallawy et al, 2012	Egypt	35%	56%	9%
Belaidi et al, 1986	France	43.2%	ND	56.8%
GCY. Fong et al, 2003	Hong Kong	38.7%	38.7%	13.6
Our study	**Algeria**	**61.6%**	**1.8%**	**36.6%**

ND: Not Documented

V. Conclusion

The various epileptic syndromes presented by our patients were partial in 74.7% of cases, generalized in 25.3%. Symptomatic partial epilepsies were predominant in 51.5% of cases.

Cryptogenic partial epilepsy represents 21.7%, idiopathic partial epilepsy 1.5%, cryptogenic generalized epilepsy 14.9%. Symptomatic generalized epilepsies 10.1%, idiopathic generalized epilepsies 0.3%.

We also note a predominance of symptomatic epilepsies with the figure of 61.6%. Idiopathic epilepsies represent 1.8%, cryptogenic epilepsies 36.6%.

The distribution by age group of symptomatic partial epileptic syndromes shows a decrease with age, with high rates for the age groups (25-29 years, 30-34 years, 35-39 years, 45-49 years, 60-64 years).

The distribution by age group of generalized epileptic syndromes shows high rates of cryptogenic generalized epilepsy for the age groups (25-29 years, 30-34 years, 35-39 years).

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