



Convulsive and non convulsive focal status epilepticus

Ibarra Viviana, Jaureguiberry Anabel, Salgado Pablo, Torres Carlos, Rodriguez-Perez Soledad, Vasallo Silvia, Oliva Liliana, Reich Edgardo

Hospital Dr. Julio Méndez. Department of Neurology. Buenos Aires. Argentina

INTRODUCTION

Status epilepticus is a condition resulting either from the mechanism responsible of seizure termination or from initiation of mechanisms, which lead abnormal prolonged seizures (Time1). It is a condition which can have long-term consequences (Time2) such as neuronal death, neuronal injury, alteration of neuronal networks depending of the type and duration of seizure.

Every type of status has an specific T1 and T2.

However, there is limited information to define T1 and T2 in focal status. The T1 in focal status with impaired consciousness, is 10 minutes, and T2 is > 60 minutes.

Focal status, convulsive and non convulsive, is a frequently underdiagnosed condition and enough data of clinical research is not yet available about the most frequent focal status, risk factors associated to drug resistance and morbimortality.

METHODOLOGY

This is a retrospective study based on the analysis of medical records from patients admitted in our hospital in Department of Internal Medicine with focal status between December 2013 and April 2017.

All patients were evaluated with clinical examination, electroencephalogram, and MRI.

We considered T1 at 10 minutes and T2 at 60 minutes for all types of focal status.

We have analyzed demographic characteristics, different types of focal status, morbimortality and risk factors related to refractory condition.

For qualitative variables we described frequencies and percentage, and for quantitative, average, standard deviation, minimal and maximum. To compare frequencies we used Chi² test, and for average, Student Test for independent samples. All tests were two-sided, and a P value of 0.05 was considered to indicate statistical significance.

RESULTS

We included 27 patients, 15 women and 12 men, with age range between 35 and 83 years old. (Table 1)

We didn't find any relationship between age or sex with the outcome of status.

The most frequent etiologies were vascular disease (29,6%), infectious disease (18,5%), and brain tumors (18,5 %). Other etiologies associated were trauma, history of epilepsy, and autoimmune disease (33.3).

The 59,3 % of focal status was related with non motor focal crisis (51,9 % with impaired consciousness, and 7,4 % without impaired consciousness). The 40,7 % had motor focal status, and the adversive seizure was the most frequent motor crisis.

The outcome was good with monotherapy in 15 patients (55,6 %) while 12 patients required politherapy.

The mean factor related to refractory condition was evolution time before starting the treatment. The patients with T1 between 10 minutes to 60 minutes, had good outcome with monotherapy in 85,7 %, while those patients that received treatment after 4 days, required politherapy and had poor outcome. We found statistical significance with these data which were analyzed with Chi-square test. (Table 2)

On the other hand, we found the delay to start treatment was closely related to poor recognition of focal crisis.

In the same way, morbimortality were significantly related to the evolution time of symptoms. We found associated morbidity in five patients. It were related to hyponatremia, cognitive decline, and Todd's paralysis.

When we analyzed morbidity with T1, we found that patients with a time evolution less 45 hours, had good outcome without morbidity. (table 3) It's statistical significance information with Chi-square test. (Table 3)

Mortality was also associated with the severity of the underlying disease.

Sex	Mean (age)	Median	Standard Deviation	Mínimum	Máximum	% of N total	N
Male	68,4	71,5	11,9	43	80	44,4%	12
Female	62,1	65,0	15,7	35	83	55,6%	15
Total	64,9	67,0	14,2	35	83	100,0%	27

Table 1: Statistical distribution of sex and age

Time of status Before treatment (T1)	Outcome of Status		Total	
	Good	Poor		
10- 60 min	Frequency	6	1	7
	%	85,7%	14,3%	100,0%
1 h to 4 days	Frequency	9	6	15
	%	60,0%	40,0%	100,0%
More than 4 days	Frequency	0	5	5
	%	0,0%	100,0%	100,0%
Total	Frequency	15	12	27
	%	55,6%	44,4%	100,0%

Table 2: Relationship between the time of status and the outcome. Chi-square test p = 0,04

Morbidity	Mean (Day)	Median	Stándard Deviation	% of N total	N
Yes	245,3	48,0	327,1	18,5%	5
No	45,6	24,0	59,1	81,5%	22
Total	82,5	24,0	159,8	100,0%	27

Table 3: Relationship between morbidity and T1. Chi square test : p < 0,001

CONCLUSION

- Focal status is frequently an underdiagnosed condition. It's consequence of poor recognition of focal seizures.
- We didn't find relationship between age or sex and outcome of status.
- The most frequent etiology was vascular disease.
- The evolution time of symptoms is the most important risk factor for outcome and morbidity.
- Morbidity was closely related with severity of underlying disease
- The prompt recognition of symptoms and an adequate interpretation of electroencephalogram, are basic for an early diagnosis and treatment, and also to improve the outcome and to decrease the morbimortality associated.

References:

- 1-Trinka E, Cock H, Hesdorffer D, Rossetti A, Scheffer I, Shinnar S, et al. A definition and classification of status epilepticus. Report of the ILAE Task Force on Classification of Status Epilepticus. *Epilepsia*. 2015; 56 (10), 1515-1523.
- 2- Trinka E, Hofler J, Zerbs A. Causes of status epilepticus. *Epilepsia* 2012. 53 (4), 127-138.
- 3- Rohrachner A, Reiter DP, Brigo F, Kalss G, Thomschewski A, Novak H, et al. Status epilepticus in the elderly-A retrospective study on 120 patients. *Epilepsy Res*. 2016; 127: 317-323.
- 4- Shorvon,S. What is nonconvulsive status epilepticus, and what are its subtypes? *Epilepsia*, 2007; 48 (8): 35-38.
- 5-Beniczy S, Hirsch L,Kaplan L, Pressler R, Bauer G, Aurlen H et al. Unified EEG terminology and criteria for nonconvulsive status epilepticus. *Epilepsia*, 2013; 54(6): 26-29.
- 6-Leitinger M, Beniczky S, Rohrachner A, Gardella E, Kalss G, QeramaE, et al. Salzburg Consensus Criteria for Non-Convulsive Status Epilepticus – approach to clinical application. *Epilepsy & Behavior*. 2015; 49: 158-163.
- 7-Sutter R, Kaplan P. Electroencephalographic criteria for nonconvulsive status epilepticus: synopsis and comprehensive survey. *Epilepsia*, 2012. 53 (3) 1-51.