COGNITIVE FUNCTIONS IN ADULTS WITH NEWLY DIAGNOSED NONLESIONAL FOCAL EPILEPSY

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Introduction

Epilepsy patients are at risk of developing cognitive dysfunction. The causes of cognitive impairments are usually multifactorial and include the effects of the underlying etiology, the effects of recurrent seizures, the side effects of antiepileptic drug (AED) treatment, and psychosocial issues [1–2]. These studies have included those with severe, chronic intractable epilepsy and often of long duration.

In comparison to those with chronic, long-standing epilepsy, very little is known about the cognitive functioning of adults with new-onset epilepsy. One study included 58 patients with newly diagnosed partial epilepsy over 5 years. There were no significant declines across a comprehensive neuropsychological test battery [3].

Aim of this study was to evaluate cognitive status in adult patients with newly diagnosed non-lesional focal epilepsy comparing with healthy controls.

Methods and Materials

We conducted a battery of neuropsychological tests and techniques in order to evaluate cognitive functions in 30 consecutive adult patients (mean age 36.47±11.29) with newly diagnosed focal epilepsy prior to the administration of antiepileptic drug (experimental group, EG).

The inclusion criteria were: **i**) one or two spontaneous epileptic seizures with focal seizure semiology; **ii**) focal interictal EEG finding supporting the diagnosis of focal epilepsy; **iii**) normal or non-lesional initial brain MR imaging; **iv**) absence of any other neurological comorbidities or psychiatric disorders.

All patients were tested within 15 days of the diagnosis and compared with 30 healthy subjects (control group, CG). The subjects from both group were matched in terms of gender, age, years of education, general cognitive status, and intellectual functioning.

Results

We found that subjects from EG had significantly lower performances on tests of phonemic verbal fluency task (p=0.011) and the Ray's complex figure (RCF) copying (p=0.001), as well as in terms of the number of RCF confabulations (p=0.039) and the figure copy performance strategies (p=0.035).

There were no differences in terms of semantic fluency, neuropsychological attention (conceptual monitoring, extended attention, auditory and visual range), executive abilities (measured by the Wisconsin test), speech tests (confrontational appointment), and verbal or visual memory.

Tests with significantly lower performances in EG

Task	F	Sig.	t	Df	p
Verbal fluency	2.156	.147	-2.619	58	.011
RCF	1.286	.262	-3.649	58	.001
RCF conf	24.926	.000	2.112	58	.039
RCF strat	.146	.704	2.164	58	.035

Discussion

The results of our study suggest that adult patients with recent onset of seizure disorder and without antiepileptic medication have worse performances than controls on some cognitive tasks, especially in tests of frontal lobe functions.

Despite the fact that they lack many of the known risk factors for cognitive problems in epilepsy including visible brain lesion [4] this finding can be a surrogate marker of symptomatic but yet not proven symptomatic etiology [5].

Conclusions

Our results indicate the existing of an early frontal dysfunction in patients with newly diagnosed non-lesional focal epilepsy.

Table: Distribution of gender

		Groups		
		EG	CG	Total
Gender	Females	18	17	35
	Males	12	13	25
Total		30	30	60

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