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Poster presentation

Correlation between clinical and imaging findings concerning cognitive dysfunction in after stroke hypertensive patients with type 2 diabetes mellitus

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Background

Previous studies have suggested that hypertensive patients with type 2 diabetes mellitus could lead to learning and memory deficits especially after stroke. Mini Mental State Examination (MMSE) is the most common cognitive function test which has been used to evaluate the degree of cognitive dysfunction. The subjects diagnosed with stroke are usually submitted to brain CT. The aim of our study was to correlate clinical and imaging findings in after stroke patients.

Materials and methods

22 patients mean age 77 ± 5 years old, having history of arterial hypertension and type 2 diabetes mellitus were admitted to our clinic for an ischemic stroke. According to MMSE scores patients were classified to four categories: A) 0–10: severe cognitive dysfunction, B) 11–20: moderate cognitive dysfunction, C) 21–27: mild to possible, D) 28–30: absence of cognitive dysfunction. Radiological criteria of dementia such as brain atrophy, dilatation of the ventricles, porencephalia and enlargement of scissures were searched. Arterial blood pressure, blood glucose levels, cholesterol, triglyceride, HDL and uric acid were measured.

Results

1. See Table 1.

2. See Table 2.

3. a. Mean arterial blood pressure: SBP: 169.6 ± 22.9, DBP: 85.3 ± 22.8, b. Uric acid: 5.49 ± 2 mg/dl, c. total cholesterol: 201.4 ± 48.7 mg/dl, d. HDL: 50.6 ± 17.2 mg/dl, triglycerides: 144.2 ± 59 mg/dl, e. glucose: 140.7 ± 57, 3 mg/dl.

Discussion

1) The cognitive dysfunction even dementia is correlated with findings of brain atrophy while only the later can not constitute a safe indicator for the diagnosis of dementia. 2) The possibility of CT findings of brain atrophy increases significantly when the MMSE score decreases. 3) Arterial hypertension and diabetes mellitus seem to remain the main risk factors even under medications while the new ones such as elevated uric acid and triglycerides, as constituents of the metabolic syndrome, are found within the normal limits.

Table 1: Classification of patients according to MMSE score

MMSE score	Patients (n)
0–10	3
11–20	9
21–24	3
25–27	5
28–30	2

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Table 2: CT results in each group

MMSE score	Patients	Findings in CT-scan	
		Brain atrophy	Without Brain Atrophy
0–10	3	3 i.i.*	0 i.i.
11–20	9	8 i.i.	1 i.i.
21–24	3	2 i.i.	1 i.i.
25–27	5	2 i i.	1 i.i.
28–30	2	2 i.i.	0 i.i.

*i.i. = ischemic infarct