ACUTE HYPERGLICEMIA AND COGNITIVE IMPAIRMENT AFTER STROKE IN NON-DIABETIC PATIENTS

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Backgrounds and aims: To determine the association between acute hyperglycemia (AH) and cognitive impairment after stroke in non-diabetic patients. 35 patients (aged 58.7±1.66 years) with first hemispheric ischemic stroke were examined within 3-4 weeks after onset with clinical and neuropsychological methods: NIHSS, MMSE, FAB, Clock Drawing Test (CDT), Attention Assessment Test (AAT), Five Words Remembering Test (FWT) and Verbal Fluency Test (VFT). The patients had serum glucose measurement at baseline. Control group consisted of 21 elderly persons.

Results: Average result of NIHSS was equal to 4.5±0.53. We noted differences in stroke patients and control group in results of MMSE (p=0.04), FAB (p< 0.01), AAT (p< 0.01), FWT (p=0.02) and VFT (p< 0.01). 13 patients had hyperglycemia, i.e., glucose ≥ 7.1 mmol/L, 7 of them were suffering from diabetes type 2. AH in non-diabetic patients was associated with greater neurological deficit (p< 0.01). Those patients had poorer results of MMSE (p=0.03) (especially “orientation” and “copying” subtest (p=0.01)), FAB subtest “go-no-go” (inhibitory control) (p=0.02) and CDT (p=0.01). The results of other tests were not interacted with glucose level, but had strong correlations with the neurological deficit level.

Conclusion: AH in non-diabetic patients contributes to the poor outcome of acute stroke as an independent factor or it is just a marker of the disease severity. AH in non-diabetic patients appears to be independently associated with cognitive impairment after stroke and particularly leads to executive and visuospatial dysfunction.