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Assessment of the Neuroprotective Effect of Oral Hypoglycemic Agents in Patients with Acute Ischemic Stroke

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Abstract : Introduction: Diabetes is a chronic health problem and a major risk factor of stroke. A number of therapeutic modalities exist for diabetes management. It's still unknown whether the different oral hypoglycemic agents would ameliorate the detrimental effect of diabetes on stroke severity. The objective of this work is to assess the effect of pretreatment with oral hypoglycemic agents, insulin and their combination on stroke severity at presentation. Patients and Methods: Patients admitted to the King Abdullah University Hospital (KAUH)-Jordan with ischemic stroke between January 2015 and December 2016 were evaluated and their comorbid diseases, treatment on admission and their neurologic severity was assessed using the National Institute of Health Stroke Scale (NIHSS) were documented. Stroke severity was compared for non-diabetic patients and diabetic patients treated with different antidiabetic agents. Results: Data from 324 patients with acute stroke was documented. The median age of participants was 69 years. Diabetes was documented in about 50% of the patients. Multinomial regression analysis identified diabetes treatment status as an independent predictor of neurological severity of stroke ($p=0.032$). Patients treated with oral hypoglycemic agents had a significantly lower NIHSS as compared to nondiabetic patients and insulin treated patients ($p < 0.02$). The positive effect of oral hypoglycemic agents was blunted by insulin co-treatment. Insulin did not alter the severity of stroke as compared to non-diabetics. Conclusion: Oral hypoglycemic agents may reduce the severity of neurologic deficit of ischemic stroke and may have neuroprotective effect.

Keywords : diabetes, stroke, neuroprotection, oral hypoglycemic agents
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