**Assessment of carotid stiffness indices in patients with ischemic stroke**

**Background:** Arterial stiffness is considered as an emerging new important risk factor for stoke development. Measuring carotid stiffness is easy and non-invasive and thus can be widely applicable.

**Purpose:** To evaluate the carotid stiffness indices in patients with ischemic stroke compared to normal healthy subjects.

**Methods:** Included in this study are 60 patients (group 1) with ischemic stroke and 60 healthy control subjects (group 2). Participants were exposed to routine clinical examination and Duplex assessment of both carotid arteries. A specific wall tracking system was used for the semiautomatic calculation of the carotid stiffness indices, which included; compliance coefficient (CC), distensibility coefficient (DC), carotid pulse wave velocity (PWV) and carotid intima media thickness (IMT). Results from both carotid arteries were averaged and data from group 1 patients were compared to group 2 subjects.

**Results:** The mean age was (60.1±6.9 years) in group 1 compared to (60.1±6.6 years) in group 2 (p=0.9). A significant difference was found between both groups in all carotid stiffness indices; including average CC (0.64± 0.29 vs 0.82± 0.36 m²/kpa, p=0.004); average DC (11.69± 5.42 vs 18.61± 11.87 1/kpa, p<0.001); average PWV (16.5±0.6 vs 12.5±3.7 m/s, p<0.001) and average IMT (0.78± 0.13 vs 0.68± 0.18 mm, p=0.001). Only the carotid PWV was found to be a predictor of vascular stroke (p=0.001)

**Conclusion:** Patients with vascular stroke have higher carotid stiffness indices than age matched control subjects. Measuring carotid stiffness indices in patients who have atherosclerotic risk factors may help predict those at risk of vascular stroke and thus guide a tighter and a more efficient risk factors control.

**Keywords:** Stroke, Vascular stiffness, Carotid arteries, Pulse wave analysis.