

BRAINSTEM IN MORPHOCLINICAL ASPECT

Armasula Mihaela¹, Zorina Zinovia¹

¹Department of Human Anatomy and Clinical Anatomy, Nicolae Testemitanu State University of Medicine and Pharmacy, Chisinau, Republic of Moldova

Introduction. Morphoclinical analysis of the brainstem is essential due to its structural complexity and the severity of associated disorders. Stroke represents the main acute neurological pathology, presenting a wide range of symptoms with major implications for vital and functional prognosis. Purpose of the work: Evaluating the morphological particularities of the brainstem in patients with stroke by correlating clinical findings with imaging data.

Material and methods. The study included a total of 30 patients diagnosed with vertebrobasilar stroke and hospitalized at the Institute of Emergency Medicine, Chişinău (2020-2025). The investigation analyzed demographic characteristics, associated risk factors and comorbidities, clinical manifestations, stroke types and subtypes, brainstem lesion location and vertebrobasilar arterial variants.

Results. The study group included 63% male patients (M) and 37% female patients (F), stratified by age: 31-40 years – 9% (all F), 41-50 years – 13% (6.5% M, 6.5% F), 51-60 years – 13% (10% M, 3% F), 61-70 years – 33% (23% M, 10% F), 71-80 years – 30% (23% M, 7% F), 81-90 years – 2% (all F). Area of residence: urban – 53.5% (33.5% M, 20% F), rural – 46.5% (30% M, 16.5% F). Main risk factors: arterial hypertension – 83.5%, diabetes mellitus – 20%, smoking – 23.5%. Frequent clinical manifestations: motor deficits – 73.5% (57% M, 16.5% F), speech and swallowing disorders – 80% (63% M, 17% F), dyspeptic manifestations – 60% (27% M, 33% F). All patients underwent brain CT, 40% had CT angiography and 3.5% MRI. Stroke types: ischemic – 63.5% (40% M, 23.5% F), hemorrhagic – 36.5% (23.5% M, 13% F). Lesion location: medulla oblongata – 18% (12% M, 6% F), pons – 55% (30% M, 25% F), midbrain – 27% (20% M, 7% F). Ischemic stroke subtypes: lacunar – 26.5% (21.5% M, 5% F), silent – 5% (all M), involutive – 16% (11% M, 5% F), established – 5% (all F), progressive – 47.5% (27% M, 20.5% F). Frequent vertebrobasilar variants: unilateral vertebral artery hypoplasia (58.5%), tortuosity of the vertebrobasilar arterial system (17%).

Conclusions. Stroke is the primary acute brainstem pathology and a significant public health concern. Correlating clinical findings with brainstem lesion location highlights the importance of symptom analysis in evaluating stroke severity and neurological prognosis.

Keywords: brainstem, vertebrobasilar stroke, stroke severity, morphoclinical analysis