

## Acute stroke and cardiovascular system. Assessment of myocardial injury with impact on patients outcome.

### *Abstract:*

Acute stroke can trigger various cardiac abnormalities, including arrhythmias, ventricular dysfunction, myocardial infarction, or sudden cardiac death. These issues often stem from disruptions in the autonomic nervous system (ANS). These conditions exhibit similar electrocardiogram (ECG) changes, cardiac function alterations, and elevated or decreased biomarkers.

Our study focused on the interplay between the cardiovascular and the nervous system in acute stroke. In first part of the study we analysed dynamic changes of specific selected biochemical markers including hs-cTnI, NT-proBNP, Copeptin, GDF-15, TRAIL in patients after acute stroke and its association with stroke severity, impact on the short-term outcome, and prevalence of cardiovascular involvement. In second part we evaluated subclinical electrocardiographic and echocardiographic changes, prevalence and impact on outcome. Results showed that changes in some biomarkers were associated with higher mortality, functional disability and stroke severity. Moreover, ECG changes were associated with subclinical myocardial injury. Regarding echocardiography, in global longitudinal strain analysis, lower strain was associated with higher mortality and disability.

Results show that patients with subclinical myocardial impairment are at higher risk after stroke. This could help us identify these patients to offer them throughout cardiologic examination.