

**11. THE IL-1b, IL-23 AND IL-20 IN PATIENTS WITH HEMORRHAGIC STROKES**  
**Ilia Nakashidze<sup>1</sup>, Shota Nakashidze, Ia Pantsulaia<sup>2</sup>, Shorena Potskhishvili<sup>2</sup>, Irina Nakashidze<sup>1</sup>**

<sup>1</sup>Batumi Shota Rustaveli State University, Batumi, Georgia

<sup>2</sup>Tbilisi State Medical University, Tbilisi, Georgia

Correspondence to: nakashidze\_ilo@bsu.edu.ge

Hemorrhagic stroke (HS) correlates with high rates of mortality and disability. According to literature patients with hemorrhagic strokes compared to ischemic strokes revealed a worse functional/clinical status during intensive rehabilitation. Notably, the studies showed that hemorrhagic stroke patients are younger, needed a longer and more intensive hospitalization, also suffered from more severe initial stroke severity compared to ischemic stroke ones. As already well known the Inflammation/host immune response has the significant contribution in the ongoing process of the hemorrhagic stroke' pathophysiology. However, the systemic immune and inflammatory reactions within hemorrhagic strokes are not fully understanding. In the present study, we aimed to investigate some cytokines within HS. In our study, we include one hundred health control and thirty patients with HS. We evaluate the following cytokines in the present work: IL-1b, IL-23 and IL-20 within both groups (patients, health control). Statistical analysis of experimental data was processed using GraphPad Prisma 9.2,  $P < 0.05$  was statistically significant. Our study revealed that levels of the levels of IL-23 were decreased within patients compared to the control group. Notably, IL-20 levels significantly decreased within HS; IL-1b level was increased within patients.

**Keywords:** Hemorrhagic stroke, Georgian Population, IL-1b, IL-23, IL-20