Obtaining Doctoral Title After Conducting Research on Biomarkers for Early Detection of Ischemic Stroke Incidents

Tuesday, 24 November 2020 WIB, By: Natasa Adelayanti

Researchers in the medical environment are currently developing various types of biomarker tests contained within the blood that can detect disability due to stroke. The condition of impaired angiogenesis and neurogenesis that occurred after a stroke would also determine the disability in stroke patients. Cognitive disability as one of the effects of ischemic stroke has a more severe result than physical disabilities. Hence, there should be a good diagnostic and prognostic tool to discover an initial diagnosis and determine the prognosis of ischemic stroke patients.

"It will have difficult treatment in dementia, the prognosis is worse, there would be a more comprehensive disability, and the costs that must be borne are very expensive," said Dr. Sardjito Hospital, Yogyakarta Neurologist, dr. Astuti Sp.S (K). A public examination to obtain a doctorate in Medical and Health Sciences (FKKMK) Universitas Gadjah Mada on Tuesday (24/11).

In her research, she explained the early detection in stroke patients using these biomarkers, especially in the connection between vascular endothelial growth factor levels and cognitive function in ischemic conditions. These actions served as an early intervention to prevent Vascular Cognitive Impairment (VCI) incidence and progression. According to him, vascular endothelial growth factor (VEGF) biomarkers confirmed angiogenesis, and brain-derived neurotrophic factor (BDNF) indicates post-stroke neurogenesis.

She conducted the observational analysis at 13 hospitals in Yogyakarta by taking samples of the first ischemic stroke patients to determine the role of VEGF and BDNF as protective factors for VCI. Furthermore, she also examined the VEGF and BDNF biomarkers using the ELISA method in the acute phase (day 5-7 from the onset of stroke) and post-acute (day 30). "The results confirmed that lower acute and post-acute phase VEGF and high post-acute BDNF had a protective effect against the occurrence of VCI," she said.

Nevertheless, according to her, this research is still preliminary research on examining VEGF and BDNF biomarkers. Hence, it has not yet evaluated the precision and accuracy of the examination of the two biomarkers. Besides, this study still utilizes blood serum samples that have not been specific to determine the central nervous system's conditions. There is still a possibility of a systemic effect on the level of biomarkers being examined.

Author: Gusti Grehenson
Translator: Natasa A

Related News

- Calculations on Breast Cancer Risk Factor Is Necessary
- Gaining Doctorate for Researching Utterance Production in Aphasia Patients
- Stroke Patients in Hospital Increases
- To Prevent Thalassemia by Early Detection
- UGM Researcher Creates Detection Tool for Dengue Virus