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**POLYMORPHISM OF NATURAL-RESISTANCE-ASSOCIATED MACROPHAGE PROTEIN 1 (NRAMP1) D543N GENE AND EXPRESSION OF NRAMP1 ON LUNG TUBERCULOSIS PATIENTS AND NURSES IN SURABAYA**  
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## **BLOOD SEROTONIN LEVEL WITH DEPRESSION SITUATION AND NEUROCOGNITIVE AS A REFLECTION OF NEURON CONDITION IN SIX MONTHS AFTER MODERATE BRAIN INJURY**

## **BLOOD SEROTONIN LEVEL WITH DEPRESSION SITUATION AND NEUROCOGNITIVE AS A REFLECTION OF NEURON CONDITION IN SIX MONTHS AFTER MODERATE BRAIN INJURY**

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### **Abstract**

*Brain injury is still a public health problem that causes a very serious long-term disability and death especially in children and young adults. Of all the events brain injury, in the 70-85% estimate is a moderate brain injury. Neurocognitive deficits that occur after brain injury would be to show an improvement in the first six months and a relative improvement will be slow and almost not visible in six to 12 months after brain injury. Serotonin is the neurotransmitter most often associated with depression and also a key to neurogenesis. This study is an observational analytic study using cross sectional study of patients who had suffered a brain injury six months ago and treated in Dr. Soetomo hospital Surabaya. The result is there is significant correlation between blood serotonin levels in patients with depression situation in six months after brain injury ( $p = 0.00$ ). There is also significant correlation between blood serotonin levels with some neurocognitive parameters in patients six months after brain injury, namely verbal fluency are examined with the Verbal Fluency Test parameters / VFT ( $p = 0.015$ ). But serotonin concentration has no significant relationships with several other neurocognitive parameters, namely the accuracy and speed of information processing or reaction time, working memory and the ability to interpret visual information, each of which is checked by using the parameters of Inspection Time Task (ITT,  $p = 0.083$ ), Continuous Performance Task-identical pairs (CPT-IP,  $p = 0.071$ ) and the Continuous Performance Task-Degraded Stimuli (CPT-DS,  $p = 0.242$ ).*

Keyword : serotonin, depression, neurocognitive, moderate, brain, injury,

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