

ABSTRACT**CORRELATION BETWEEN BRAIN-DERIVED NEUROTHROPIC FACTOR (BDNF) LEVELS AND PAIN INTENSITY AFTER PARACETAMOL-AMITRIPTYLINE TREATMENT IN PATIENTS WITH CHRONIC LOW BACK PAIN**

(Study Conducted in Neurology Outpatient Unit Dr. Soetomo General Hospital Surabaya)

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Background — Chronic low back pain is a musculoskeletal condition in adults with incidence approximately 84% worldwide. Previous studies suggested that Brain-Derived Neurothropic Factor (BDNF) involved in central sensitization induction by increasing hyperexcitability in spinal neuron. Paracetamol and amitriptyline are widely used in chronic low back pain, however, the evidence related to the use of these drugs is limited.

Objective — The purpose of this study is to investigate the correlation between BDNF levels and pain intensity after paracetamol-amitriptyline treatment in patient with chronic low back pain.

Method — Blood samples, Visual Analogue Scale (VAS) score, and Pain Rating Index (PRI) of Short-Form McGill Pain Questionnaire (SF-MPQ) were obtained from patient who visited Neurology Outpatient Unit from July – November 2019 at day 0 and day 14 after paracetamol 500 mg/8 hours and amitriptyline 10 mg/24 hours treatment. Enzyme Linked Immunosorbent Assay (ELISA) used to measure BDNF levels in patient. VAS and PRI score of SF-MPQ obtained by direct interview with the subjects.

Results — 23 patients included in this study. Spearman Correlation shows no correlation between VAS score and BDNF levels after intervention ($r = -0,029$; $p=0,895$). PRI score after treatment shows no correlation with BDNF levels ($r=0,406$; $p=0,055$). There is a significant difference between VAS ($p=0,02$) and PRI score ($p=0,01$) before and after treatment.

Conclusion — There was no correlation between BDNF levels and pain intensity after paracetamol-amitriptyline treatment. This combination proven effective in reducing pain intensity in patient with chronic low back pain.

Keywords: *BDNF, Chronic Low Back Pain, Pain Intensity, Visual Analogue Scale (VAS), Pain Rating Index (PRI)*