

ABSTRACT

CORRELATION BETWEEN SERUM NERVE GROWTH FACTOR (NGF) LEVELS AND PAIN INTENSITY AFTER THE ADMINISTRATION OF PARACETAMOL-AMITRIPTYLINE COMBINATION IN CHRONIC LOW BACK PAIN PATIENTS

(The Study is conducted in Neurology Outpatient Unit Dr. Soetomo General Hospital Surabaya)

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Background - The effectiveness of paracetamol-amitriptyline combination therapy had not been proved yet. *Nerve Growth Factor* (NGF) is a neurotrophin involved in the pathophysiology of chronic low back pain (LBP). The previous study had proven the correlation of NGF and pain intensity in chronic migraine but similar study had never been conducted in chronic LBP.

Objective – This study was aimed to analyze the correlation between serum NGF levels and pain intensity after the administration of paracetamol-amitriptyline combination in chronic LBP patients.

Method – Serum NGF levels and pain intensity data were collected before and after chronic low back pain patients had been using therapy consists of the combination of paracetamol 500 mg thrice daily and amitriptyline 10 mg once daily as needed. Pain intensity was assessed with the visual analog scale (VAS) and pain rating index (PRI) of the short form - McGill pain questionnaire (SF-MPQ).

Results – The positive correlation between VAS and serum NGF levels after therapy was negligible ($r = 0.093$). The positive correlation between PRI SF-MPQ and serum NGF levels after therapy was weak ($r = 0.145$). The positive correlation between the change of PRI SF-MPQ and serum NGF levels was weak ($r = 0.239$). Paracetamol-amitriptyline combination could decrease pain intensity VAS ($p = 0.001$) and PRI SF-MPQ ($p = 0.012$) significantly.

Conclusion – There was no correlation between serum NGF levels and VAS pain intensity, but there was a weak positive correlation between serum NGF levels and PRI SF-MPQ after the administration of paracetamol-amitriptyline combination in chronic LBP patients.

Keywords: *chronic low back pain, nerve growth factor, pain rating index, paracetamol-amitriptyline combination, visual analog scale*