

**ABSTRACT**

**CORRELATION BETWEEN SUBSTANCE P AND PAIN INTENSITY  
AFTER COMBINATION OF PARACETAMOL-AMITRIPTILIN  
THERAPY ON CHRONIC LOW BACK PAIN PATIENTS  
(Study Conducted at Neurology Outpatient Unit  
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**Background** – Substance P is a neuropeptide involved in pathophysiology of chronic low back pain. The widely used paracetamol as a first line therapy in many guideline in chronic low back pain patients and amitriptilin as a first line therapy in neuropatic pain, but evidence base that use both of them still lacking.

**Objective** – The aim of this study was to analyze the correlation between substance P and pain intensity in chronic low back pain patient using combination of paracetamol-amitriptilin therapy.

**Method** – This observational study was approved by the Ethics Committee of Dr Soetomo Teaching Hospital. Blood samples were obtained from patients who visit Neurology Outpatient Unit from July to November 2019 and substance p levels were assessed by using ELISA (Enzyme-Linked Immunosorbent Assay). The correlation between substance P and pain intensity measure by VAS(Visual Analog Scale) and SF-MPQ (Short Form-McGill Pain Questionnaire).Correlation were analyzed using Spearman test as it was non parametric data.

**Result** – 23 patients were included in this study. There is negative weak correlation between substance p and pain intensity VAS ( $r = -0,2885$ ) and SF-MPQ ( $r = 0,2485$ ) before combination paracetamol-amitriptilin therapy. However, there is no correlation between substance p and pain intensity VAS ( $r = -0,0864$ ) and SF-MPQ ( $r = -0,01832$ ) after combination paracetamol-amitriptilin therapy. The use of paracetamol-amitriptilin as an analgesic is effective to reduce pain show by decrease of pain intensity VAS ( $p = 0,001$ ) and SF-MPQ ( $0,012$ ).

**Conclusion** – There was weak correlation between substance P and pain intensity before therapy. The use of paracetamol-amitriptilin as an analgesic is effective to reduce pain show by decrease of pain intensity

**Keywords:** *substance p, chronic low back pain, paracetamol, amitriptilin, visual analog scale, short form McGill pain quistionare*