

Tesis

**KORELASI NILAI *MEAN PLATELET VOLUME* DENGAN
KADAR *HIGH SENSITIVE TROPONIN I*
PADA SINDROM KORONER AKUT**



Oleh

**Risma Isti
1550307203**

**PROGRAM PENDIDIKAN DOKTER SPESIALIS I
PATOLOGI KLINIK FK UNAND
RSUP. DR. M. DJAMIL
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ABSTRAK

Latar Belakang: Sindrom koroner akut (SKA) merupakan kumpulan proses penyakit yang disebabkan ruptur plak aterosklerosis. Ruptur plak diikuti proses aktivasi trombosit. Trombosit teraktivasi berukuran besar, sehingga terjadi peningkatan rerata ukuran trombosit yang dinilai dengan *mean platelet volume* (MPV). Trombosit teraktivasi bersifat lebih adhesif dan mudah beragregasi, sehingga merangsang pembentukan trombus. Trombus menyebabkan oklusi arteri koroner, yang berakibat nekrosis miokard. Penanda nekrosis miokard yang sering digunakan adalah *high sensitive troponin I* (hsTnI). Tujuan penelitian adalah mengetahui korelasi nilai MPV dengan kadar hsTnI pada SKA.

Metode: Penelitian analitik rancangan potong lintang dilakukan terhadap 70 pasien SKA yang memenuhi kriteria inklusi dan eksklusi. Penelitian dilakukan dari November 2017 sampai November 2018. Pemeriksaan MPV menggunakan spesimen *whole blood* dengan antikoagulan K₂EDTA, dan dinilai berdasarkan rumus oleh alat. Pemeriksaan hsTnI menggunakan serum dan diukur dengan metode *enzyme linked fluorescent assay*. Data dianalisis menggunakan uji korelasi Spearman. Korelasi dinyatakan bermakna jika nilai $p < 0,05$.

Hasil: Sampel penelitian terdiri dari 52 laki-laki (74,3%) dan 18 perempuan (25,7%). Rerata umur sampel penelitian adalah 54,69 (13,09) tahun dengan rentang umur 19-80 tahun. Rerata nilai MPV sampel penelitian adalah 9,65(0,76) fL. Rerata kadar hsTnI sampel penelitian adalah 1944,55 (1565,84) ng/L. Analisis dengan uji korelasi Spearman mendapatkan hasil korelasi positif lemah dan bermakna antara nilai MPV dengan kadar hsTnI pada SKA ($r=0,237$, $p=0,048$).

Simpulan: Penelitian membuktikan terdapat korelasi antara nilai MPV dengan hsTnI pada SKA.

Kata kunci: *high sensitive troponin I*, korelasi, *mean platelet volume*, sindrom koroner akut

CORRELATION BETWEEN MEAN PLATELET VOLUME AND HIGH SENSITIVE TROPONIN I IN ACUTE CORONARY SYNDROME

ABSTRACT

Background: Acute coronary syndrome (ACS) is a set of signs caused by ruptured atherosclerotic plaques. Plaque rupture is followed by platelet activation. Activated platelets are large so that the average size of platelets also increase, which can be measured by the mean platelet volume (MPV). Activated platelets are more adhesive and easy to aggregate, thus stimulating thrombus formation. Thrombus causes occlusion of coronary arteries and followed by myocardial necrosis. Cardiac marker for myocardial necrosis which frequently used is high sensitive troponin I (hsTnI). The aim of the study was to determine correlation of MPV and hstnI in ACS.

Method: This cross-sectional analytic study was conducted on 70 ACS patients who fulfilled inclusion and exclusion criteria. The study was conducted from November 2017 to November 2018. Whole blood with K₂EDTA anticoagulants were used to measure MPV with calculation formula by analyzer. Serum were measured by the enzyme linked flourescent assay method to access hsTnI. Data were analyzed using the Spearman correlation test and considered significance if $p < 0.05$.

Result: This study included 52 men (74.3%) and 18 women (25.7%). The average age was 54.69 (13.09) years and ranged from 19-80 years. The mean of MPV is 9.65 (0.76) fL. The mean of hsTnI is 1944.55 (1565.84) ng/L. Analysis with Spearman correlation test showed a weak positive correlation and significant between MPV and hsTnI ($r = 0.237, p = 0.048$).

Conclusion: This study showed a correlation between MPV and hstnI in ACS.

Keywords: acute coronary syndrome, correlation, high sensitive troponin I, mean platelet volume