

**KADAR MONOCYTE CHEMOATTRACTANT PROTEIN-1, RASIO LDL/HDL  
DAN MEAN PLATELET VOLUME SEBAGAI FAKTOR PREDIKTOR  
RISIKO MORTALITAS PADA PASIEN ST-ELEVATION MYOCARDIAL  
INFARCTION**

**ABSTRAK**

**Latar Belakang:** ST-elevation myocardial infarction (STEMI) adalah jenis sindroma koroner akut yang paling serius, yang menjadi penyebab 15% kematian pada orang dewasa di atas 35 tahun. Penggunaan skor GRACE dapat membantu memprediksi risiko mortalitas, sedangkan MCP-1 dan dislipidemia yang ditunjukkan oleh peningkatan rasio LDL/HDL berperan dalam perkembangan aterosklerosis. MPV juga menjadi petanda penting dalam penilaian risiko kardiovaskular.

**Tujuan:** Membuktikan kadar MCP-1, rasio LDL/HDL dan MPV sebagai faktor prediktor risiko mortalitas pada pasien STEMI.

**Metode:** Penelitian belah lintang dilakukan terhadap 80 pasien STEMI yang berobat ke IGD. Kadar MCP-1 diperiksa menggunakan metode *enzyme-linked immunosorbent assay* (ELISA). Kadar LDL dan HDL diperiksa menggunakan metode *homogenous enzymatic colorimetric*. Rasio LDL dan HDL dihitung dengan membagi kadar LDL dengan kadar HDL secara manual. Nilai MPV diperiksa menggunakan metode impedansi menggunakan alat *hematology analyzer*. Analisis secara bivariat untuk menghitung rasio prevalensi (RP) dengan menggunakan tabel 2x2.

**Hasil:** Rerata kadar MCP-1 adalah  $363,0 \pm 514,4$  pg/mL, rerata rasio LDL/HDL  $3,4 \pm 1,0$ , dan rerata nilai MPV  $10,0 \pm 0,8$  fL. Rasio prevalensi kadar MCP-1 terhadap risiko mortalitas STEMI 3,48 (95%CI: 1,34–9,05;  $p < 0,05$ ). Rasio prevalensi nilai rasio LDL/HDL terhadap risiko mortalitas STEMI 1,57 (95%CI: 0,65–3,80;  $p > 0,05$ ). Rasio prevalensi nilai MPV terhadap risiko mortalitas STEMI 3,15 (95%CI: 1,11 – 8,95;  $p < 0,05$ ).

**Simpulan:** Peningkatan kadar MCP-1 dan peningkatan nilai MPV merupakan faktor prediktor risiko mortalitas STEMI.

**Kata Kunci:** STEMI, MCP-1, rasio LDL/HDL, MPV

**MONOCYTE CHEMOATTRACTANT PROTEIN-1 LEVEL, LDL/HDL RATIO,  
AND MEAN PLATELET VOLUME AS PREDICTOR FACTORS OF  
MORTALITY RISK IN ST-ELEVATION MYOCARDIAL  
INFARCTION PATIENTS**

**ABSTRACT**

**Background:** ST-elevation myocardial infarction (STEMI) is the most serious type of acute coronary syndrome, accounting for 15% of deaths in adults over 35 years old. The use of the GRACE score can help predict the risk of mortality, while MCP-1 and dyslipidemia indicated by an increased LDL/HDL ratio play a role in the development of atherosclerosis. MPV is also an important marker in assessing cardiovascular risk.

**Aim:** To analyse MCP-1 levels, LDL/HDL ratio and MPV as predictors of mortality risk in STEMI patients.

**Method:** A cross-sectional study was conducted on 80 STEMI patients who sought treatment at the emergency room. MCP-1 levels were examined using the enzyme-linked immunosorbent assay (ELISA) method. LDL and HDL levels were examined using the homogenous enzymatic colorimetric method. The LDL and HDL ratio was calculated by manually dividing LDL levels by HDL levels. MPV values were examined using the impedance method using a hematology analyzer. Bivariate analysis to calculate the prevalence ratio (PR) using a 2x2 table.

**Results:** The mean MCP-1 level was  $363.0 \pm 514.4$  pg/mL, the mean LDL/HDL ratio was  $3.4 \pm 1.0$ , and the mean MPV value was  $10.0 \pm 0.8$  fL. The prevalence ratio of MCP-1 levels to the risk of STEMI mortality was 3.48 (95%CI: 1.34–9.05;  $p < 0.05$ ). The prevalence ratio of the LDL/HDL ratio value to the risk of STEMI mortality was 1.57 (95%CI: 0.65–3.80;  $p > 0.05$ ). The prevalence ratio of MPV value to STEMI mortality risk is 3.15 (95%CI: 1.11–8.95;  $p < 0.05$ ).

**Conclusion:** Increased MCP-1 levels and increased MPV values are predictors of STEMI mortality risk.

**Keywords:** STEMI, MCP-1, LDL/HDL ratio, MPV