

**HUBUNGAN KADAR *LOW-DENSITY LIPOPROTEIN* (LDL) DAN
HIGH-DENSITY LIPOPROTEIN (HDL) DENGAN KEJADIAN
PENYAKIT SINDROM KORONER AKUT DI RSUD BULELENG
TAHUN 2023 – 2024**

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ABSTRAK

Sindrom Koroner Akut (SKA) merupakan salah satu penyebab utama morbiditas dan mortalitas kardiovaskular serta masih menjadi masalah kesehatan prioritas di Indonesia. Peningkatan kadar Low-Density Lipoprotein (LDL) dan penurunan kadar High-Density Lipoprotein (HDL) berperan dalam mempercepat proses aterosklerosis yang mendasari SKA. LDL tinggi rentan mengalami oksidasi dan memicu respons inflamasi di dinding pembuluh darah, sedangkan HDL rendah mengurangi kemampuan reverse cholesterol transport sehingga melemahkan efek protektif terhadap pembentukan plak. Penelitian ini bertujuan mengetahui hubungan kadar LDL dan HDL dengan kejadian SKA pada pasien di RSUD Buleleng. Penelitian ini menggunakan desain analitik observasional dengan pendekatan potong lintang berdasarkan data rekam medis periode 2023–2024. Sebanyak 122 pasien memenuhi kriteria inklusi dan eksklusi, terdiri atas 64 pasien (52,5%) kelompok SKA—meliputi STEMI, NSTEMI, dan UAP—serta 58 pasien (47,5%) kelompok non-SKA. Pada kelompok SKA, sebagian besar pasien memiliki kadar LDL kategori sedikit tinggi (75%), lebih tinggi dibandingkan kelompok non-SKA (29,3%). Sebaliknya, kadar HDL rendah lebih dominan pada kelompok SKA (60,9%), sedangkan kelompok non-SKA didominasi oleh kadar HDL tinggi (69%). Hasil analisis regresi logistik multivariat menunjukkan bahwa kadar LDL dan HDL secara parsial maupun simultan berhubungan signifikan dengan kejadian SKA. Setelah dikontrol secara simultan, individu dengan kadar LDL tinggi memiliki odds mengalami SKA sebesar 6,05 kali dibandingkan individu dengan kadar LDL normal (AOR = 6,052; 95% CI: 2,676–13,687; $p < 0,001$). Selain itu, individu dengan kadar HDL rendah memiliki odds mengalami SKA sebesar 2,97 kali dibandingkan individu dengan kadar HDL tinggi (AOR = 2,969; 95% CI: 1,307–6,743; $p = 0,009$). Dengan demikian, penelitian ini menyimpulkan bahwa kadar LDL dan HDL berhubungan signifikan secara independen dan simultan dengan kejadian SKA, sehingga pemantauan profil lipid dan intervensi dini penting dalam upaya pencegahan SKA.

Kata kunci: LDL, HDL, Sindrom Koroner Akut, RSUD Buleleng.

The Relationship between Low-Density Lipoprotein (LDL) and High-Density Lipoprotein (HDL) Levels and the Incidence of Acute Coronary Syndrome at RSUD Buleleng in 2023–2024

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ABSTRACT

Acute Coronary Syndrome (ACS) remains one of the leading causes of cardiovascular morbidity and mortality and is a major public health concern in Indonesia. Elevated low-density lipoprotein (LDL) and decreased high-density lipoprotein (HDL) accelerate atherosclerosis, which underlies ACS. High LDL is susceptible to oxidation, triggering inflammatory responses in the vascular wall, while low HDL reduces reverse cholesterol transport, weakening its protective effect against plaque formation. This cross-sectional observational study examined the relationship between LDL and HDL levels and the incidence of ACS among 122 patients at RSUD Buleleng during 2023–2024. Of these, 64 patients (52.5%) were classified in the ACS group—including STEMI, NSTEMI, and unstable angina pectoris (UAP)—and 58 patients (47.5%) in the non-ACS group. Slightly elevated LDL levels were observed in 75% of ACS patients compared to 29.3% of non-ACS patients, whereas low HDL levels were more prevalent in ACS patients (60.9%) and high HDL levels dominated the non-ACS group (69%). Multivariate logistic regression indicated that both LDL and HDL levels were significantly associated with ACS, both independently and simultaneously. After adjustment, patients with high LDL had 6.05 times higher odds of developing ACS than those with normal LDL levels (AOR = 6.052; 95% CI: 2.676–13.687; $p < 0.001$), and patients with low HDL had 2.97 times higher odds than those with high HDL levels (AOR = 2.969; 95% CI: 1.307–6.743; $p = 0.009$). These findings suggest that monitoring lipid profiles and early interventions are essential to prevent ACS, as LDL and HDL levels significantly influence its occurrence both independently and in combination.

Keywords: LDL, HDL, Acute Coronary Syndrome, RSUD Buleleng