

ABSTRAK

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AKURASI PEMERIKSAAN PROFIL *LIPID* METODE *POINT OF CARE TESTING* (POCT) TERHADAP METODE ENZIMATIK KOLORIMETRI

1x + 110 Halaman + 18 Tabel + 10 Lampiran

Pemantapan mutu laboratorium merupakan aspek penting dalam menjamin keandalan hasil pemeriksaan, termasuk pada pemeriksaan profil lipid yang meliputi kolesterol total, trigliserida, LDL, dan HDL. Metode yang digunakan meliputi *Point-of Care Testing* (POCT) yang menawarkan kecepatan dan kemudahan penggunaan, serta metode enzimatik kolorimetri sebagai standar dengan akurasi dan presisi tinggi. Meskipun POCT semakin banyak digunakan, metode ini masih memiliki keterbatasan dalam hal akurasi dan pengendalian mutu. Penelitian ini bertujuan untuk mengetahui tingkat akurasi pemeriksaan profil lipid metode *Point of Care Testing* (POCT) yang dibandingkan dengan metode enzimatik kolorimetri sebagai metode standar.

Jenis penelitian ini merupakan deskriptif analitik dengan desain *cross sectional*. Sampel sebanyak 40 responden diambil secara *consecutive sampling* dari seluruh pasien di Laboratorium Farmalab Bangkalan yang melakukan pemeriksaan kolesterol total, trigliserida, LDL, dan HDL. Penelitian dilakukan dari bulan Oktober 2025 hingga Mei 2026. Analisis data dilakukan berdasarkan perhitungan nilai bias dan nilai recovery. Selanjutnya, dilakukan juga uji statistik untuk menilai perbedaan hasil pemeriksaan profil lipid metode POCT dengan metode enzimatik kolorimetri.

Hasil penelitian menunjukkan akurasi kolesterol total memperoleh nilai bias sebesar -15% dan nilai recovery sebesar 84%. Akurasi trigliserida menunjukkan nilai bias sebesar 16% dan nilai recovery 116%. Akurasi LDL menunjukkan nilai bias -22% dan nilai recovery sebesar 77%. Akurasi HDL menunjukkan nilai bias 7% dan nilai recovery sebesar 107%. Uji perbedaan menunjukkan terdapat perbedaan signifikan antara metode POCT dengan metode enzimatik kolorimetri pada parameter kolesterol total ($p = 0,000$), trigliserida ($p = 0,011$), dan LDL ($p = 0,000$). Tidak terdapat perbedaan hasil pemeriksaan HDL ($p = 0,333$) antara metode POCT dengan metode enzimatik kolorimetri. Kesimpulan penelitian ini yaitu akurasi pemeriksaan profil *lipid* metode POCT dibandingkan dengan metode enzimatik kolorimetri masih menunjukkan variasi bias antar parameter. Kolesterol total, trigliserida, dan LDL memiliki nilai bias yang melebihi batas bias, sedangkan HDL masih dalam batas bias yang dapat diterima. Oleh karena itu, diperlukan evaluasi kinerja dan pengendalian mutu metode POCT untuk meningkatkan keandalan hasil pemeriksaan sebelum digunakan dalam pelayanan laboratorium.

Kata kunci: Akurasi, Kolesterol Total, Trigliserida, LDL, HDL, POCT, Enzimatis Kolorimetri

Daftar bacaan: 10 buku (2017-2025)

ABSTRACT

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ACCURACY OF POINT-OF-CARE TESTING (POCT) LIPID PROFILE EXAMINATION VS ENZYMATIC COLORIMETRIC METHOD

1x + 110 Pages + 18 Tables + 10 Appendices

Laboratory quality assurance is a crucial aspect in ensuring the reliability of test results, including lipid profiles, which include total cholesterol, triglycerides, LDL, and HDL. Methods used include Point-of-Care Testing (POCT), which offers speed and ease of use, and enzymatic colorimetry, the standard method with high accuracy and precision. Although POCT is increasingly used, it still has limitations in terms of accuracy and quality control. This study aimed to determine the accuracy of the Point-of-Care Testing (POCT) lipid profile test compared to the enzymatic colorimetry method, the standard method.

This was a descriptive analytical study with a cross-sectional design. A sample of 40 respondents was drawn using consecutive sampling from all patients at the Bangkalan Farmalab Laboratory who underwent total cholesterol, triglycerides, LDL, and HDL tests. The study was conducted from October 2025 to May 2026. Data analysis was based on the calculation of bias and recovery values. Furthermore, statistical tests were conducted to assess differences in lipid profile test results between the POCT and enzymatic colorimetry methods.

The results showed that the accuracy of total cholesterol obtained a bias of -15% and a recovery of 84%. The accuracy of triglycerides showed a bias of 16% and a recovery of 116%. The accuracy of LDL showed a bias of -22% and a recovery of 77%. The accuracy of HDL showed a bias of 7% and a recovery of 107%. The difference test showed significant differences between the POCT method and the enzymatic colorimetric method in total cholesterol ($p = 0,000$), triglycerides ($p = 0,011$), and LDL ($p = 0,000$). There was no difference in HDL test results ($p = 0,333$) between the POCT method and the enzymatic colorimetric method. The conclusion of this study is that the accuracy of the POCT lipid profile examination compared to the enzymatic colorimetric method still shows variations in bias between parameters. Total cholesterol, triglycerides, and LDL had bias values exceeding the bias limits, while HDL remained within acceptable limits. Therefore, performance evaluation and quality control of the POCT method are needed to improve the reliability of examination results before use in laboratory services.

Keywords: Accuracy, Total Cholesterol, Triglycerides, LDL, HDL, POCT, Enzymatic Colorimetric

Reference: 10 books (2017-2025)