

## ABSTRACT

**Background:** Total cholesterol testing is essential for the early detection of cardiovascular diseases. The CHOD-PAP method is commonly used in clinical laboratories. However, the efficiency of reagent use needs to be evaluated, especially in limited resource settings.

**Objective:** To determine whether there is a significant difference in total cholesterol levels tested using the CHOD-PAP method between one-recipe and half-recipe reagent and sample volumes.

**Methods:** This research employed a **pre-experimental** design with a **Static Group Comparison** approach. A total of 20 pooled serum samples from patients at Dr. Sardjito General Hospital were tested using both one-recipe and half-recipe procedures. The data were analyzed using the Shapiro-Wilk normality test and Paired Sample T-Test.

**Results:** The average total cholesterol level with one prescription was 173.85 mg/dL and with half a prescription was 173.2 mg/dL. The results of the statistical test showed a significance value of 0.782 ( $p \geq 0.05$ ), indicating that there was no significant difference between the two methods. The mean difference of -0.6 mg/dL was within the deviation limit of  $\pm 10\%$  determined by the CLIA and the percent desirable bias of 4% by the Westgard Rule, which means there is no clinically significant difference.

**Conclusion:** Total cholesterol testing using the CHOD-PAP method with a half-recipe provides comparable results to the standard one-recipe method and can be used as a more efficient alternative in clinical laboratories.

**Keywords:** Total cholesterol, CHOD-PAP, one-recipe, half-recipe, reagent efficiency.

## ABSTRAK

**Latar Belakang:** Pemeriksaan kolesterol total sangat penting dalam deteksi dini penyakit kardiovaskular. Metode CHOD-PAP umum digunakan di laboratorium klinik. Namun, efisiensi penggunaan reagen perlu dikaji, khususnya dalam situasi terbatasnya sumber daya.

**Tujuan:** Mengetahui apakah terdapat perbedaan hasil pemeriksaan kadar kolesterol total menggunakan metode CHOD-PAP satu resep dengan setengah resep reagen dan sampel.

**Metode:** Penelitian ini menggunakan desain pre-eksperimental dengan pendekatan Static Group Comparison. Sampel berupa pooled serum dari 20 pasien di RSUP Dr. Sardjito diperiksa kadar kolesterol totalnya dengan dua prosedur berbeda: satu resep dan setengah resep. Data dianalisis menggunakan uji normalitas *Shapiro-Wilk* dan uji beda *Paired Sample T-Test*.

**Hasil:** Rata-rata kadar kolesterol total dengan satu resep adalah 173,85 mg/dL dan dengan setengah resep adalah 173,2 mg/dL. Hasil uji statistik menunjukkan nilai signifikansi 0,782 ( $p \geq 0,05$ ), menandakan tidak terdapat perbedaan signifikan antara kedua metode. Selisih rerata -0,6 mg/dL berada dalam batas deviasi  $\pm 10\%$  yang ditentukan oleh CLIA dan persen desirable bias sebesar 4% oleh *Westgard Rule*, yang artinya berarti tidak ada beda secara klinis.

**Kesimpulan:** Pemeriksaan kolesterol total dengan metode CHOD-PAP menggunakan setengah resep memberikan hasil yang sebanding dengan satu resep dan dapat digunakan sebagai alternatif yang lebih efisien di laboratorium klinik.

**Kata Kunci:** Kolesterol total, CHOD-PAP, satu resep, setengah resep, efisiensi reagen.