

ABSTRAK

Latar Belakang: Gagal ginjal kronik (GGK) adalah penurunan fungsi ginjal selama lebih dari tiga bulan dan sering disertai anemia. Pemeriksaan kadar hemoglobin penting dalam penatalaksanaan GGK, terutama pada pasien hemodialisis. Pemeriksaan ini dapat dilakukan menggunakan metode HemoCue dan Hematology Analyzer. Karena masing-masing memiliki kelebihan dan keterbatasan, diperlukan studi untuk membandingkan hasil keduanya guna menjamin akurasi pemeriksaan laboratorium.

Tujuan Penelitian: Mengetahui kesesuaian metode HemoCue dan Hematology Analyzer dalam pemeriksaan kadar hemoglobin pada pasien GGK.

Metode Penelitian: Penelitian ini merupakan studi observasional analitik yang membandingkan hasil pemeriksaan kadar hemoglobin dengan metode HemoCue dan Hematology Analyzer. Sampel terdiri dari 40 pasien GGK. Data dianalisis secara deskriptif dan dengan uji Bland-Altman.

Hasil: Rata-rata hasil hemoglobin dari metode HemoCue adalah 7,7 g/dL dan Hematology Analyzer 7,8 g/dL. Analisis Bland-Altman menunjukkan selisih rerata -0,045 g/dL (0,58%) dengan batas kesepakatan 0,34 hingga -0,43 g/dL, masih dalam batas toleransi klinis $\pm 0,5$ g/dL. Koefisien variasi (CV) kedua metode di bawah 15%, menandakan presisi yang baik. Berdasarkan hasil analisis, kedua metode terbukti memiliki akurasi dan presisi tinggi, sehingga dapat saling menggantikan dalam pelaksanaan pemeriksaan laboratorium.

Kesimpulan: Metode HemoCue dan Hematology Analyzer menunjukkan kesesuaian yang baik dan dapat digunakan bergantian dalam pemeriksaan hemoglobin pada pasien GGK.

Kata Kunci: HemoCue, Hematology Analyzer, Hemoglobin, Gagal Ginjal Kronik, Bland-Altman.

ABSTRACT

Background: Chronic kidney disease (CKD) is a decline in kidney function lasting more than three months and is often accompanied by anemia. Hemoglobin level testing is essential in the management of CKD, especially in patients undergoing hemodialysis. This test can be performed using the HemoCue and Hematology Analyzer methods. Since each method has its own advantages and limitations, a comparative study was needed to ensure laboratory testing accuracy.

Objective: To determine the agreement between the HemoCue and Hematology Analyzer methods in measuring hemoglobin levels in CKD patients.

Methods: This study was an observational analytic research that compared hemoglobin examination results using the HemoCue and Hematology Analyzer methods. The sample consisted of 40 CKD patients. The data were analyzed descriptively and using the Bland-Altman test.

Results: The average hemoglobin result using the HemoCue method was 7.7 g/dL, while the Hematology Analyzer showed 7.8 g/dL. The Bland-Altman analysis showed a mean difference of -0.045 g/dL (0.58%) with limits of agreement ranging from 0.34 to -0.43 g/dL, which were within the clinical tolerance limit of ± 0.5 g/dL. The coefficient of variation (CV) for both methods was below 15%, indicating good precision. Based on the analysis, both methods were proven to have high accuracy and precision, making them interchangeable for laboratory use.

Conclusion: The HemoCue and Hematology Analyzer methods showed good agreement and could be used interchangeably in measuring hemoglobin levels in CKD patients.

Keywords: HemoCue, Hematology Analyzer, Hemoglobin, Chronic Kidney Disease, Bland-Altman.