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PERBANDINGAN HASIL PEMERIKSAAN *COMPLETE BLOOD COUNT* (CBC) BERDASARKAN VARIASI VOLUME SAMPEL DALAM TABUNG EDTA DI RSUD DR. H. ABDUL MOELOEK PROVINSI LAMPUNG

xvi + 35 halaman, 8 gambar, 5 tabel, 17 lampiran

ABSTRAK

Pengambilan sampel darah yang tepat sangat penting dalam diagnostik hematologi. Variasi volume dalam tabung EDTA dapat memengaruhi hasil pemeriksaan, dengan kesalahan praanalitik akibat volume tidak sesuai menyumbang 10–20% kesalahan laboratorium. Penelitian ini bertujuan menganalisis pengaruh variasi volume darah terhadap hasil complete blood count (CBC). Desain penelitian adalah quasy experiment komparatif laboratorik, dilakukan di UTD RSUD Dr. H. Abdul Moeloek pada Januari–Mei 2025. Sepuluh sampel darah individu sehat masing-masing dibagi ke dalam empat volume (3 mL, 2 mL, 1 mL, 0,5 mL) dan diperiksa menggunakan Hematology Analyzer Mindray BC-10. Analisis menggunakan One-Way ANOVA Repeated Measures. Hasil menunjukkan bahwa hemoglobin, hematokrit, eritrosit, leukosit, MCH, MPV, dan PDW tidak terpengaruh signifikan ($p > 0,05$). Namun, trombosit, MCV, dan MCHC menunjukkan perbedaan signifikan ($p < 0,05$). Trombosit dan MCV cenderung menurun, sedangkan MCHC meningkat seiring penurunan volume. Simpulan: konsistensi volume sampel penting untuk menjaga akurasi hasil CBC, terutama pada parameter trombosit, MCV, dan MCHC.

Kata Kunci: Volume sampel darah, *Complete Blood Count* (CBC), Kesalahan praanalitik, Trombosit.

Daftar Bacaan: 127 (2003-2025)

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**COMPARISON OF COMPLETE BLOOD COUNT (CBC) RESULTS
BASED ON BLOOD SAMPLE VOLUME VARIATIONS IN EDTA TUBES
AT DR. H. ABDUL MOELOEK HOSPITAL OF LAMPUNG PROVINCE**

xvi + 35 pages, 8 images, 5 tables, 17 appendices

ABSTRACT

Accurate blood sampling is crucial in hematological diagnostics. Variations in blood volume within EDTA tubes can significantly influence test results, with pre-analytical errors due to incorrect volumes accounting for 10-20% of laboratory errors. This study aimed to analyze the effect of blood volume variations on complete blood count (CBC) results. This research utilized a comparative laboratory quasi-experimental design and was conducted at the Blood Transfusion Unit of Dr. H. Abdul Moeloek Regional Hospital from January to May 2025. Ten blood samples from healthy individuals were each divided into four different volumes (3 mL, 2 mL, 1 mL, and 0.5 mL) and examined using a Mindray BC-10 Hematology Analyzer. Data analysis was performed using One-Way ANOVA Repeated Measures. The results indicated that hemoglobin, hematocrit, erythrocytes, leukocytes, MCH, MPV, and PDW were not significantly affected by volume variation ($p > 0.05$). However, platelets, MCV, and MCHC showed significant differences ($p < 0.05$). Platelet and MCV counts tended to decrease, while MCHC increased with decreasing blood volume. In conclusion, sample volume consistency is essential for maintaining the accuracy of CBC results, particularly for platelet, MCV, and MCHC parameters.

Keywords: Blood sample volume, Complete Blood Count (CBC), Pre-analytical error, Platelets.

References: 127 (2003-2025).