

PERBEDAAN KADAR GLUKOSA DARAH PUASA MENGGUNAKAN SERUM DAN PLASMA EDTA

Differences in Fasting Blood Glucose Levels Using Serum and EDTA Plasma

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ABSTRAK

Latar Belakang: Pemeriksaan glukosa darah dipengaruhi oleh jenis spesimen yang digunakan. Serum lazim digunakan dalam pemeriksaan kimia klinik, sedangkan plasma EDTA lebih jarang digunakan dan umumnya terbatas pada kondisi tertentu. Penelitian sebelumnya lebih banyak membandingkan kadar glukosa darah sewaktu, sehingga diperlukan kajian khusus pada glukosa darah puasa. **Tujuan:** Mengetahui perbedaan kadar glukosa darah puasa menggunakan serum dan plasma EDTA. **Metode:** Penelitian kuantitatif dengan desain observasional analitik dan pendekatan potong lintang dilaksanakan di Laboratorium Klinik Prameka pada November 2025–Maret 2026, dengan pengambilan sampel pada Februari–Maret 2026. Sampel terdiri atas 30 pasien dewasa berusia 18–59 tahun yang dipilih menggunakan purposive sampling. Dari setiap responden diperoleh spesimen serum dan plasma EDTA. Pemeriksaan glukosa dilakukan dengan metode GOD-PAP menggunakan alat Dirui CS-T180. Data dianalisis menggunakan SPSS versi 26 melalui uji *Shapiro–Wilk* dan *Paired Sample T-Test*. **Hasil:** Rata-rata kadar glukosa darah puasa pada serum sebesar 105,120 mg/dL, sedangkan pada plasma EDTA sebesar 110,993 mg/dL. Uji *Paired Sample T-Test* menunjukkan nilai *t* sebesar –13,839 dan *p*=0,000, sehingga terdapat perbedaan yang signifikan antara kedua jenis spesimen. **Kesimpulan:** Kadar glukosa darah puasa pada plasma EDTA cenderung lebih tinggi dibandingkan serum. Konsistensi penggunaan jenis spesimen diperlukan untuk menghindari perbedaan interpretasi hasil laboratorium dan mendukung ketepatan pemantauan klinis.

Kata kunci: glukosa darah puasa, serum, plasma EDTA, metode GOD-PAP, jenis spesimen

ABSTRACT

Background: Blood glucose testing is influenced by the type of specimen used. Serum is commonly used in clinical chemistry testing, whereas EDTA plasma is used less frequently and is generally limited to specific conditions. Previous studies have primarily compared random blood glucose levels; therefore, a specific study on fasting blood glucose is needed. **Objective:** To determine the difference in fasting blood glucose levels between serum and EDTA plasma. **Methods:** A quantitative study with an analytical observational design and a cross-sectional approach was conducted at the Prameka Clinical Laboratory from November 2025 to March 2026, with data collection taking place in February–March 2026. The sample consisted of 30 adult patients aged 18–59 years who were selected using purposive sampling. Serum and EDTA plasma specimens were collected from each participant. Glucose testing was performed using the GOD-PAP method with a Dirui CS-T180 analyzer. The data were analyzed using SPSS version 26 via the *Shapiro–Wilk* test and the *Paired Sample T-test*. **Results:** The mean fasting blood glucose level in serum was 105.120 mg/dL, while in EDTA plasma it was 110.993 mg/dL. The *Paired-Sample t-test* yielded a *t*-value of –13.839 and a *p*-value of 0.000, indicating a statistically significant difference between the two types of specimens. **Conclusion:** Fasting blood glucose levels in EDTA plasma tend to be higher than those in serum. Consistency in the use of specimen types is necessary to avoid discrepancies in the interpretation of laboratory results and to support the accuracy of clinical monitoring.

Keywords: fasting blood glucose, serum, EDTA plasma, GOD-PAP method, specimen type