

ABSTRAK

Pengaruh Suhu Penyimpanan Terhadap Kadar Ureum Dengan Penundaan 24 Jam Di RSUD Kabupaten Buleleng

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Pemeriksaan ureum merupakan salah satu pemeriksaan kimia klinik yang digunakan untuk menilai fungsi ginjal. Keakuratan hasil pemeriksaan dipengaruhi oleh tahap pra-analitik, salah satunya suhu penyimpanan serum ketika terjadi penundaan pemeriksaan. Penelitian ini bertujuan mengetahui pengaruh variasi suhu penyimpanan terhadap kadar ureum serum dengan penundaan pemeriksaan selama 24 jam di Laboratorium Patologi Klinik RSUD Kabupaten Buleleng. Penelitian menggunakan desain true experimental dengan pendekatan posttest-only control group design. Sampel penelitian berjumlah 30 serum pasien poli geriatri yang dipilih menggunakan teknik total sampling. Setiap sampel dibagi menjadi empat aliquot, yaitu diperiksa segera (0 jam), disimpan pada suhu ruang ($\pm 25-28^{\circ}\text{C}$), kulkas ($2-8^{\circ}\text{C}$), dan freezer (-20°C) selama 24 jam. Pemeriksaan kadar ureum dilakukan menggunakan metode enzimatis Urease-UV pada Automatic Chemistry Analyzer. Data dianalisis menggunakan uji Shapiro-Wilk dan dilanjutkan dengan uji Friedman karena data tidak berdistribusi normal. Hasil penelitian menunjukkan rata-rata kadar ureum sebesar 63,27 mg/dL pada pemeriksaan segera, 63,03 mg/dL pada suhu ruang, 62,42 mg/dL pada suhu kulkas, dan 62,77 mg/dL pada suhu freezer. Uji Friedman menunjukkan nilai Asymp. Sig. = 0,414 ($p > 0,05$), sehingga tidak terdapat perbedaan bermakna kadar ureum serum pada keempat kondisi penyimpanan selama 24 jam. Hasil tersebut menunjukkan bahwa serum tetap stabil pada suhu ruang, kulkas, maupun freezer selama penundaan pemeriksaan 24 jam.

Kata kunci : penundaan pemeriksaan, pra-analitik, stabilitas serum, suhu penyimpanan.

ABSTRACT

The Effect of Storage Temperature Variations on Urea Levels After A 24-Hour Delay in Examination at Buleleng Regency Hospital

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Urea testing is one of the clinical chemistry examinations used to assess kidney function. The accuracy of test results can be affected by pre-analytical factors, including serum storage temperature when testing is delayed. This study aimed to determine the effect of variations in storage temperature on serum urea levels following a 24-hour testing delay at the Clinical Pathology Laboratory of Buleleng Regional General Hospital. This study employed a true experimental design with a posttest-only control group approach. The sample consisted of 30 serum specimens from geriatric outpatients selected using total sampling. Each sample was divided into four aliquots: immediate testing (0 hours), storage at room temperature (approximately 25–28°C), refrigerator temperature (2–8°C), and freezer temperature (-20°C) for 24 hours. Serum urea levels were measured using the enzymatic Urease-UV method with an Automatic Chemistry Analyzer. Data were analyzed using the Shapiro-Wilk test for normality and subsequently using the Friedman test because the data were not normally distributed. The results showed that the mean serum urea levels were 63.27 mg/dL for immediate testing, 63.03 mg/dL after storage at room temperature, 62.42 mg/dL after refrigerator storage, and 62.77 mg/dL after freezer storage. The Friedman test showed an Asymp. Sig. value of 0.414 ($p > 0.05$), indicating no significant difference in serum urea levels among the four storage conditions over 24 hours. These findings indicate that serum remained stable at room temperature, refrigerator temperature, and freezer temperature during a 24-hour testing delay.

Keywords : *pre-analytical, serum stability, storage temperature, testing delay.*