

## ABSTRACT

**Background:** Urea level examination is one of the kidney function examinations. The examination of ureum levels uses samples in the form of serum. Sample storage is carried out due to delays in the examination. Sample storage is an important part of pre-analytical quality assurance and plays a big role in maintaining analyte stability or measurement precision.

**Objective:** To determine the difference in the results of urea levels with 3-day storage of serum stored at 2-8°C and stored frozen in the freezer compared to the results of ureum levels immediately examined.

**Methods:** The type of research is pre-experimental and the research design is the one group pre-test and post-test design. The samples used in the study were 30 samples and grouped into three treatments, namely immediately, stored for 3 days at 2-8°C and stored frozen in the freezer. The data obtained were analyzed statistically.

**Results:** The results of the calculation of the average difference between the urea levels immediately examined and the urea levels stored for 3 days at 2-8°C and the urea levels immediately examined and the urea levels stored frozen in the freezer were 1.07 mg/dL and 1.26 mg/dL, respectively. The results of Friedmann statistical analysis showed  $p = 0.000$  which means there is a difference in urea levels that are immediately examined and stored for 3 days at 2-8°C and stored frozen in the freezer.

**Conclusion:** There is a difference in urea levels that are immediately examined and stored for 3 days.

**Keywords:** Urea, storage, temperature

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**Latar Belakang:** Pemeriksaan kadar ureum merupakan salah satu pemeriksaan fungsi ginjal. Pemeriksaan kadar ureum menggunakan sampel berupa serum. Penyimpanan sampel dilakukan karena terjadi penundaan pemeriksaan. Penyimpanan sampel menjadi salah satu bagian penting dari jaminan kualitas pra-analitik dan memainkan peran besar untuk menjaga stabilitas analit atau presisi pengukuran.

**Tujuan:** Mengetahui perbedaan hasil kadar ureum dengan penyimpanan serum selama 3 hari yang disimpan pada suhu 2-8°C dan disimpan beku di *freezer* dibandingkan dengan hasil kadar ureum segera diperiksa.

**Metode:** Jenis penelitian adalah pra eksperimen dan design penelitian adalah *the one group pre-test and post-test design*. Sampel yang digunakan pada penelitian sebanyak 30 sampel dan dikelompokkan menjadi tiga perlakuan, yaitu segera, disimpan selama 3 hari pada suhu 2-8°C dan disimpan beku di *freezer*. Data yang diperoleh dianalisis secara statistik.

**Hasil:** Hasil perhitungan selisih rata-rata kadar ureum yang segera diperiksa dengan kadar ureum yang disimpan selama 3 hari pada suhu 2-8°C dan kadar ureum yang segera diperiksa dengan kadar ureum yang disimpan beku di *freezer* secara berturut-turut sebesar 1.07 mg/dL dan 1.26 mg/dL. Hasil analisis statistik *Friedmann* menunjukkan  $p = 0.000$  yang berarti ada perbedaan kadar ureum yang segera diperiksa dan disimpan selama 3 hari pada suhu 2-8°C dan disimpan beku di *freezer*.

**Kesimpulan:** Terdapat perbedaan kadar ureum yang segera diperiksa dan disimpan selama 3 hari pada suhu 2-8°C dan disimpan beku di *freezer*.

**Kata Kunci:** Ureum, penyimpanan, suhu