

**DIFFERENCES IN ELECTROLYTE LEVELS IN BLOOD SAMPLES
DELIVERED MANUALLY, USING PNEUMATIC TUBE SYSTEM
IMMEDIATELY AND DELAYED FOR 30 MINUTES AT SLEMAN
REGIONAL GENERAL HOSPITAL**

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ABSTRACT

Background : The use of the Pneumatic Tube System in sending blood samples can save delivery time and effort, as well as achieve turn around time for laboratory examinations. But it also has an influence on the quality of the sample. Hemolysis in samples due to vibration during shipping using the Pneumatic Tube System can result in misinterpretation of laboratory test results.

Research Objectives : To determine whether there are differences in electrolyte levels (Sodium, Potassium, Chloride) in blood samples sent manually, using the Pneumatic Tube System immediately and delayed 30 minutes.

Research Method : This type of research is a pre-experimental with a Static Group Comparison design. The sample used was 15 venous blood taken from outpatients at Sleman Hospital using accidental sampling technique. This research was conducted on November 11-15 2022. Electrolyte levels were measured using a Cobas c311 Analyzer with the Ion Selective Electrode method. The data obtained is primary data which was statistically analyzed using the One Way Anova Test for Sodium and Potassium and Kruskal Wallis H Test for Chloride with a 95% confidence level.

Results: The results showed a significance value of 0.915 for Sodium, 0.981 for Potassium and 0.896 for Chloride.

Conclusion : There is no significant difference in electrolyte levels (Sodium, Potassium, Chloride) in blood samples sent manually, using the Pneumatic Tube System immediately and delayed 30 minutes.

Keywords : Sodium, Potassium, Chloride, Manual, Pneumatic Tube System

**PERBEDAAN KADAR ELEKTROLIT PADA SAMPEL DARAH YANG
DIKIRIM SECARA MANUAL, MENGGUNAKAN PNEUMATIC TUBE
SYSTEM SEGERA DAN DITUNDA 30 MENIT DI RUMAH SAKIT
UMUM DAERAH SLEMAN**

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ABSTRAK

Latar Belakang : Penggunaan *Pneumatic Tube System* dalam pengiriman sampel darah dapat menghemat waktu dan tenaga pengantar, serta tercapainya *turn around time* pemeriksaan laboratorium. Namun juga memberikan pengaruh pada kualitas sampel. Hemolisis pada sampel akibat getaran selama pengiriman menggunakan *Pneumatic Tube System* dapat mengakibatkan kesalahan interpretasi hasil pemeriksaan laboratorium.

Tujuan Penelitian : Mengetahui ada tidaknya perbedaan kadar elektrolit (Natrium, Kalium dan Klorida) pada sampel darah yang dikirim secara manual, menggunakan *Pneumatic Tube System* segera dan ditunda 30 menit.

Metode Penelitian : Jenis penelitian pra-eksperimen dengan desain *Static Group Comparison*. Sampel yang digunakan berjumlah 15 darah vena yang diambil dari pasien rawat jalan di RSUD Sleman dengan teknik *accidental sampling*. Penelitian ini dilaksanakan pada tanggal 11-15 November 2022. Pengukuran kadar elektrolit menggunakan alat Cobas c311 *Analyzer* dengan metode *Ion Selective Electrode* (ISE). Data yang diperoleh merupakan data primer yang dianalisis statistik menggunakan Uji *One Way Anova* untuk Natrium dan Kalium, serta Uji *Kruskal Wallis H* untuk Klorida dengan tingkat kepercayaan 95%.

Hasil : Hasil penelitian menunjukkan nilai signifikansi pada rerata kadar Natrium sebesar 0,915, Kalium sebesar 0,981 dan Klorida sebesar 0,943.

Kesimpulan : Tidak ada perbedaan kadar elektrolit (Natrium, Kalium dan Klorida) pada sampel darah yang dikirim secara manual, menggunakan *Pneumatic Tube System* segera dan ditunda 30 menit.

Kata Kunci : Natrium, Kalium, Klorida, Manual, *Pneumatic Tube System*