

KADAR HEMOGLOBIN PADA DARAH EDTA PASIEN HIPERTENSI YANG DIPERIKSA SEGERA, 4 JAM DAN 8 JAM PADA SUHU 20-25°C

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ABSTRAK

Latar Belakang: Hipertensi sering disebut sebagai pembunuh diam-diam (*Silent Killer*), karena termasuk penyakit yang mematikan tanpa disertai dengan gejala terlebih dahulu. Hemoglobin adalah komponen utama sel darah merah atau eritrosit yang terbentuk dari heme yang terdiri dari cincin porfirin dengan 1 atom besi (ferro) dan globin terdiri atas 4 rantai polipeptida yaitu 2 rantai polipeptida alfa dan 2 rantai polipeptida beta. antikoagulan yang digunakan untuk pemeriksaan kadar hemoglobin adalah *Ethylene Diamine Tetra Acetate* (EDTA). sampel darah EDTA sering disimpan pada suhu ruang, penyimpanan sampel ini biasa terjadi karena adanya permintaan pemeriksaan ulang ataupun penambahan parameter pemeriksaan oleh klinisi, pergantian *shift*, dan listrik yang padam secara mendadak.

Tujuan: Mengetahui perbedaan kadar hemoglobin pada darah EDTA pasien hipertensi yang diperiksa segera, 4 jam dan 8 jam pada 20-25°C.

Metode: Jenis Penelitian ini adalah pra eksperimen dengan desain *one group pretest posttest design*. Subjek penelitian adalah pasien penderita hipertensi Puskesmas Gondokusuman II sebanyak 40 orang dengan teknik pengambilan sampel *purposive sampling*. Penelitian dilakukan pada bulan oktober 2023. Pemeriksaan kadar hemoglobin menggunakan *Hematology Analyzer Sysmex XN 1000* dengan metode *Sodium Lauryl Sulfate* (SLS).

Hasil: Rerata kadar hemoglobin yang diperiksa segera (14,16 g/dl), rerata kadar hemoglobin yang disimpan 4 jam (14,10 g/dl), rerata kadar hemoglobin yang disimpan 8 jam (14,13 g/dl). Selisih hasil pemeriksaan kadar hemoglobin yang diperiksa segera dan kadar hemoglobin yang disimpan 4 jam sebesar 0,42%, sedangkan selisih hasil pemeriksaan kadar hemoglobin yang diperiksa segera dan kadar hemoglobin yang disimpan 8 jam sebesar 0,21%. Kadar hemoglobin dianalisis statistik dengan uji *Repeated Measure Anova* dengan tingkat kepercayaan 95% didapatkan nilai signifikan 0,169 ($p \geq 0,05$).

Kesimpulan: Tidak terdapat perbedaan yang signifikan terhadap pemeriksaan kadar hemoglobin pada sampel darah EDTA pasien hipertensi yang diperiksa segera dengan disimpan selama 4 jam dan 8 jam pada suhu 20-25°C.

Kata kunci: Hemoglobin, Hipertensi, Waktu Simpan, Suhu

HEMOGLOBIN LEVELS IN EDTA BLOOD OF HYPERTENSIVE PATIENTS ARE EXAMINED IMMEDIATELY, 4 HOURS AND 8 HOURS

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ABSTRACT

Background: Hypertension is often referred to as the silent killer, because it is a deadly disease without being accompanied by symptoms first. Hemoglobin is the main component of red blood cells or erythrocytes formed from heme consisting of a porphyrin ring with 1 iron atom (ferrous) and globin consisting of 4 polypeptide chains namely 2 alpha polypeptide chains and 2 beta polypeptide chains. The anticoagulant used for hemoglobin level examination is Ethylene Diamine Tetra Acetate (EDTA). EDTA blood samples are often stored at room temperature, this sample storage is common due to requests for re-examination or addition of examination parameters by the clinician, shift changes, and sudden power outages.

Objective: Knowing the difference in hemoglobin levels in EDTA blood of hypertensive patients who are examined immediately, 4 hours and 8 hours at 20-25°C.

Method: This type of research is pre-experiment with one group pretest posttest design. The subjects of the study were 40 patients with hypertension at the Gondokusuman II Health Center with purposive sampling techniques. The study was conducted in October 2023. Hemoglobin level examination using Hematology Analyzer Sysmex XN 1000 with Sodium Lauryl Sulfate (SLS) method.

Results: Average hemoglobin levels examined immediately (14.16 g/dl), average hemoglobin levels stored 4 hours (14.10 g/dl), average hemoglobin levels stored 8 hours (14.13 g/dl). The difference between the results of the hemoglobin level examination that was checked immediately and the hemoglobin level that was stored for 4 hours was 0.42%, while the difference in the results of the hemoglobin level examination that was checked immediately and the hemoglobin level that was stored for 8 hours was 0.21%. Hemoglobin levels were analyzed statistically with the Repeated Measure Anova test with a confidence level of 95% obtained a significant value of 0.169 ($p \geq 0.05$).

Conclusion: There was no significant difference in hemoglobin level examination in EDTA blood samples of hypertensive patients who were examined immediately by being stored for 4 hours and 8 hours at a temperature of 20-25°C.

Keywords: Hemoglobin, Hypertension, Shelf Time, Temperature