PENGARUH LAMA PENYIMPANAN *PACKED RED CELL* TERHADAP KADAR HEMOGLOBIN DI UDD PMI YOGYAKARTA TAHUN 2022

Nesya Amania Mohune[1], Dyah Artini[2], Arum Margi Kusumawardani[3]

INTISARI

Latar Belakang: Selama penyimpanan darah, terjadi beberapa perubahan komponen darah seperti perubahan morfologi sel darah merah, melambatnya metabolisme, turunnya kadar ATP, fungsi pompa kation hilang dan hemolisis. Situasi ini membuat resiko keamanan dan mengurangi kemanjuran PRC yang disimpan dalam jangka panjang. Kebutuhan darah dan produksi darah mayoritas secara global adalah PRC. PRC dengan volume 350-450 mL yang digunakan selama 2-4 jam dapat menaikkan kadar hemoglobin sampai 1 g/dL, namun tidak terlepas dari fakta bahwa PRC terus mengalami penurunan kualitas selama masa penyimpanan.

Tujuan Penelitian: Tujuan penelitian ini untuk mengetahui pengaruh lama penyimpanan *Packed Red Ce*ll (PRC) terhadap kadar hemoglobin di UDD PMI Yogyakarta tahun 2022.

Metode Penelitian: Penelitian ini merupakan jenis penelitian *Quasi Eksperimental*/percobaan semu dengan desain penelitian *Time Series Design.* Pengambilan sampel menggunakan teknik Quota Sampling. Sampel yang digunakan adalah komponen darah *Packed Red Cell* sebanyak empat kantong.

Hasil: Hasil pemeriksaan kadar hemoglobin dari keempat kantong menunjukkan penurunan selama penyimpanan dari hari ke 0-hari ke 3. Hasil uji *Anova* nilai signifikan sebesar 0,378 berarti > dari 0,05, artinya tidak ada perbedaan kadar hemoglobin pada kantong darah PRC pada masa simpan hari ke-0 dan hari-3.

Kesimpulan: Kadar hemoglobin PRC pada penyimpanan hari ke-0 dan hari ke-3 mengalami penurunan namun tidak bermakna secara statistik dengan p-value 0,378.

Kata Kunci: Kadar Hemoglobin, *Packed Red Cell*, Penyimpanan Darah

---

[1]Mahasiswa TBD Universitas Jenderal Achmad Yani Yogyakarta
[2]Dosen TBD Univesitas Jenderal Achmad Yani Yogyakarta
[3]Dosen TBD Univesitas Jenderal Achmad Yani Yogyakarta

THE EFFECT OF LONG PACKED RED CELL STORAGE ON HEMOGLOBIN LEVEL IN UDD PMI YOGYAKARTA IN 2022

Nesya Amania Mohune[1], Dyah Artini[2], Arum Margi Kusumawardani[3]

ABSTRACT

Background: During blood storage, there are several changes in blood components such as changes in red blood cell morphology, slowing of metabolism, decreased levels of ATP, loss of cation pump function and hemolysis. This situation creates a security risk and reduces the efficacy of PRC stored in the long term. The need for blood and the majority of blood production globally is PRC. PRC with a volume of 350-450 mL used for 2-4 hours can increase hemoglobin levels up to 1 g/dL, but it is inseparable from the fact that PRC continues to decrease in quality during storage.

Objectives: The purpose of this study was to determine the effect of storage time of Packed Red Cell (PRC) on hemoglobin levels in UDD PMI Yogyakarta in 2022.

Methods: This research is a quasi-experimental/quasi-experimental type of research with a Time Series Design research design. Sampling using the Quota Sampling technique. The samples used were four bags of Packed Red Cell blood components.

Results: The results of the examination of hemoglobin levels from the four bags showed a decrease during storage from day 0 to day 3. The Anova test results were significant at 0.378 meaning > from 0.05, meaning that there was no difference in hemoglobin levels in PRC blood bags during the storage period of days 0th and 3rd day.

Conclusion: During blood storage between day 0 and day 3 the PRC hemoglobin level decreased but not statistically significant with a p-value of 0,378.

Keywords: Hemoglobin Level, Packed Red Cell, Blood Storage

[1]Student of Blood Bank Technology Program Universitas Jnederal Achmad Yani Yogyakarta
[2]Lecturer of Blood Bank Tecnology Program Universitas Jenderal Achmad Yani Yogyakarta
[3]Lecturer of Blood Bank Tecnology Program Universitas Jenderal Achmad Yani Yogyakarta