

Tesis

**HUBUNGAN TRANSFUSI DARAH BERULANG DENGAN
ALLOIMUNISASI ERITROSIT PADA PASIEN PENYAKIT
GINJAL KRONIS STADIUM 5 YANG TELAH
MENERIMA TRANSFUSI ERITROSIT**



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ABSTRAK

Latar Belakang: Pasien penyakit ginjal kronis (PGK) berisiko untuk mendapatkan transfusi darah berulang, sehingga risiko alloimunisasi eritrosit meningkat. Alloimunisasi eritrosit pada PGK menyebabkan kesulitan dalam menemukan darah yang cocok untuk transfusi dan bisa menyebabkan reaksi transfusi hemolitik. Kewaspadaan dan pertimbangan yang komprehensif bisa dilakukan sebelum memberikan transfusi darah pada pasien PGK dengan menilai faktor risiko yang memengaruhi alloimunisasi eritrosit.

Tujuan: Penelitian ini bertujuan menilai kejadian alloimunisasi eritrosit dan menganalisis hubungan transfusi darah berulang dengan alloimunisasi eritrosit pada pasien PGK stadium 5 di RSUP Dr. M. Djamil Padang.

Metode: Penelitian ini merupakan studi analitik deskriptif dengan desain *cross sectional* di Instalasi Laboratorium RSUP Dr. M. Djamil Padang. Pasien dewasa dengan diagnosis PGK stadium 5 yang telah menerima transfusi darah berulang (transfusi >3 unit) dilakukan pemeriksaan *indirect coombs' test* dan *auto control* dengan metode *gel agglutination* untuk menilai alloimunisasi eritrosit. Data demografi dan riwayat transfusi diambil dari catatan medis pasien. Analisis statistik terhadap variabel penelitian dilakukan menggunakan uji *chi-square*. Penelitian telah disetujui oleh komite etik setempat.

Hasil: Sebanyak 90 pasien PGK yang terdiri dari 37 laki-laki (41%) dan 53 perempuan (59%), berusia sebagian besar <60 tahun dan golongan darah terbanyak adalah golongan darah O (41%). Pasien PGK lebih banyak mengalami transfusi darah berulang dengan jumlah transfusi eritrosit terbanyak ialah ≤ 10 unit serta jangka waktu transfusi terbanyak ialah >5 tahun. Tingkat alloimunisasi eritrosit ditemukan sebesar 16%. Alloimunisasi ditemukan berhubungan dengan transfusi darah berulang ($p=0,049$; OR 3,382) dan jumlah transfusi eritrosit ($p=0,002$; OR 9,164). Jangka waktu transfusi eritrosit ditemukan tidak berhubungan dengan alloimunisasi eritrosit dalam penelitian ini.

Simpulan: Alloimunisasi eritrosit pada pasien PGK stadium 5 ditemukan sebanyak 16%. Transfusi darah >3 unit meningkatkan risiko tiga kali lipat terjadi alloimunisasi eritrosit dibandingkan transfusi darah ≤ 3 unit. Transfusi darah >10 unit berisiko sembilan kali terjadi alloimunisasi eritrosit dibandingkan transfusi darah ≤ 10 unit.

Kata kunci: Alloimunisasi, PGK, transfusi darah berulang

RELATIONSHIP BETWEEN REPEATED BLOOD TRANSFUSIONS AND ERYTHROCYTE ALLOIMMUNIZATION IN STAGE 5 CHRONIC KIDNEY DISEASE PATIENTS WHO HAVE RECEIVED ERYTHROCYTE TRANSFUSIONS

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Background: Chronic kidney disease (CKD) patients are at risk of receiving repeated blood transfusions, so the risk of erythrocyte alloimmunization increases. Erythrocyte alloimmunization in CKD can cause difficulty in finding suitable blood for transfusion and can cause hemolytic transfusion reactions. Comprehensive vigilance and consideration can be done before giving blood transfusion to CKD patients by assessing the risk factors that affect erythrocyte alloimmunization.

Objective: This study aims to assess the incidence of erythrocyte alloimmunization and analyze the relationship between repeated blood transfusion and erythrocyte alloimmunization in stage 5 CKD patients at Dr. M. Djamil Padang General Hospital.

Method: This study is a descriptive analytical study with a cross-sectional design at the Laboratory Installation of Dr. M. Djamil Padang General Hospital. Adult patients with a diagnosis of stage 5 CKD who have received repeated blood transfusions (transfusions >3 units) underwent indirect coombs' test and auto control with the gel agglutination method to assess erythrocyte alloimmunization. Demographic data and transfusion history were taken from patient medical records. Statistical analysis of the study variables was performed using the chi-square test. The study was approved by the local ethics committee.

Results: A total of 90 CKD patients consisting of 37 men (41%) and 53 women (59%), mostly aged <60 years and the most common blood type was blood type O (41%). CKD patients experienced more repeated blood transfusions with the largest number of erythrocyte transfusions being ≤ 10 units and the largest transfusion period being >5 years. The level of erythrocyte alloimmunization was found to be 16%. Alloimmunization was found to be associated with repeated blood transfusions ($p=0,049$; OR 3,382) and the number of erythrocyte transfusions ($p=0,002$; OR 9,164). Duration of erythrocyte transfusion were found to be unrelated to erythrocyte alloimmunization in this study.

Conclusion: Erythrocyte alloimmunization in stage 5 CKD patients was found to be 16%. Blood transfusion >3 units increases the risk of erythrocyte alloimmunization threefold compared to blood transfusion ≤ 3 units. Blood transfusion >10 units increases the risk of erythrocyte alloimmunization ninefold compared to blood transfusion ≤ 10 units.

Keywords: Alloimmunization, CKD, repeated blood transfusion