

PERBEDAAN JUMLAH TROMBOSIT DARAH *K3EDTA* PADA PASIEN
CKD (CHRONIC KIDNEY DISEASE) DAN *NON-CKD* YANG DIPERIKSA
SEGERA DAN SETELAH PENUNDAAN 3 JAM

ABSTRAK

Latar Belakang: *Chronic Kidney Disease (CKD)* merupakan kondisi penurunan fungsi ginjal secara progresif yang dapat mempengaruhi sistem hematologi salah satunya adalah jumlah dan fungsi trombosit. Trombosit pada pasien *CKD* lebih rentan mengalami perubahan dibandingkan pasien *Non-CKD*. Namun, pemeriksaan jumlah trombosit darah menggunakan antikoagulan *K3EDTA* dipengaruhi oleh faktor *pra-analitik*, terutama waktu penundaan pemeriksaan, yang dapat menyebabkan aktivasi dan *agregasi* trombosit secara *in vitro*.

Tujuan: Untuk mengetahui perbedaan jumlah trombosit darah *K3EDTA* pada pasien *CKD* dan *Non-CKD* yang diperiksa segera dan setelah penundaan 3 jam.

Metode: Penelitian ini merupakan penelitian observasional analitik dengan desain *two group pretest-posttest*. Sampel penelitian sebanyak 30 responden yang terdiri dari pasien *CKD* dan *Non-CKD* di RS PKU Muhammadiyah Yogyakarta. Pemeriksaan jumlah trombosit dilakukan menggunakan *hematology analyzer Beckman Coulter DxH 560*. Analisis data menggunakan uji *Shapiro-Wilk* dan dilanjutkan dengan uji *Paired T-test*.

Hasil: Karakteristik responden kelompok *CKD* mayoritas berjenis kelamin laki-laki sebanyak 20 orang (66,7%) dengan usia terbanyak 66–70 tahun (23,3%), sedangkan kelompok *Non-CKD* mayoritas perempuan sebanyak 22 orang (73,3%) dengan distribusi usia terbanyak pada rentang 40–45 tahun, 56–60 tahun, dan 71–75 tahun masing-masing sebesar 16,7%. Rata-rata jumlah trombosit pasien *CKD* menurun dari 250.200/ μL menjadi 239.266/ μL setelah penundaan 3 jam, sedangkan pada pasien *Non-CKD* menurun dari 273.000/ μL menjadi 252.000/ μL . Hasil uji *Shapiro-Wilk* menunjukkan data berdistribusi normal ($p > 0,05$). Uji *Paired T-test* menunjukkan nilai signifikansi $p = 0,000$ pada kelompok *CKD* dan $p = 0,002$ pada kelompok *Non-CKD*, sehingga terdapat perbedaan bermakna jumlah trombosit darah *K3EDTA* yang diperiksa segera dan setelah penundaan 3 jam.

Kesimpulan: Terdapat perbedaan bermakna jumlah trombosit darah *K3EDTA* pada pasien *CKD* dan *Non-CKD* yang diperiksa segera dan setelah penundaan 3 jam. Penundaan pemeriksaan menyebabkan penurunan jumlah trombosit, dengan penurunan lebih besar terjadi pada pasien *Non-CKD*.

Kata Kunci : Trombosit, *K3EDTA*, *Chronic Kidney Disease*, *Non-CKD*, Penundaan pemeriksaan

DIFFERENCES IN K3EDTA BLOOD PLATELET COUNTS IN CKD
(CHRONIC KIDNEY DISEASE) AND NON-CKD PATIENTS EXAMINED
IMMEDIATELY AND AFTER A 3-HOUR DELAY

ABSTRACT

Background: *Chronic Kidney Disease is a condition characterized by progressive decline in kidney function that can affect the hematological system, including platelet count and function. Platelets in CKD patients are more susceptible to changes compared to those in non-CKD patients. However, platelet count examination using K3EDTA anticoagulant is influenced by pre-analytical factors, particularly delays in examination time, which may cause in vitro platelet activation and aggregation.*

Objective: *To determine the differences in platelet counts in K3EDTA blood samples between CKD and Non-CKD patients examined immediately and after a 3-hour delay.*

Methods: *This study was an analytical observational study with a two-group pretest-posttest design. A total of 30 respondents consisting of CKD and Non-CKD patients at PKU Muhammadiyah Hospital Yogyakarta were included. Platelet counts were measured using the Beckman Coulter DxH 560 hematology analyzer. Data were analyzed using the Shapiro-Wilk test followed by the Paired T-test.*

Results: *The characteristics of respondents in the CKD group showed that the majority were male, with 20 individuals (66.7%), and the highest age distribution was in the 66–70 year range (23.3%). Meanwhile, the Non-CKD group was predominantly female, with 22 individuals (73.3%), and the highest age distribution was in the 40–45 year, 56–60 year, and 71–75 year ranges, each accounting for 16.7%. The mean platelet count in CKD patients decreased from 250,200/ μ L to 239,266/ μ L after a 3-hour delay, whereas in Non-CKD patients it decreased from 273,000/ μ L to 252,000/ μ L. The results of the Shapiro–Wilk test showed that the data were normally distributed ($p > 0.05$). The Paired T-test showed significance values of $p = 0.000$ in the CKD group and $p = 0.002$ in the Non-CKD group, indicating a significant difference in K3EDTA blood platelet counts examined immediately and after a 3-hour delay.*

Conclusion: *There was a significant difference in the platelet count of K3EDTA blood samples between CKD and non-CKD patients when examined immediately and after a 3-hour delay. Delayed examination caused a decrease in platelet count, with a greater reduction observed in non-CKD patients.*

Keywords: *Platelets, K3EDTA, Chronic Kidney Disease, Non-CKD, Examination delay.*