

INTISARI

Latar Belakang: *Delayed Graft Function* (DGF) merupakan komplikasi serius pasca-transplantasi ginjal. Peningkatan suhu organ selama *Second Warm Ischemia Time* (WIT2) memicu metabolisme anaerob dan cedera reperfusi yang berkontribusi terhadap nekrosis selular dan aktivasi respons imun. Penelitian ini bertujuan mengevaluasi dampak durasi WIT2 terhadap fungsi ginjal (kreatinin dan eGFR) pada hari ke-7 pasca-transplantasi.

Metode: Studi observasional analitik dengan desain *cross-sectional* retrospektif dilakukan pada 47 pasien transplantasi ginjal di RSUP Dr. Sardjito periode 2018–2022. Subjek dikelompokkan berdasarkan durasi WIT2 (<45 menit dan >45 menit). Luaran fungsi ginjal dinilai melalui kadar kreatinin serum dan *estimated Glomerular Filtration Rate* (eGFR) pada hari ke-7 pasca-operasi. Analisis data menggunakan uji Mann-Whitney dengan signifikansi $p < 0,05$.

Hasil: Rerata durasi WIT2 keseluruhan adalah $58,83 \pm 51,82$ menit. Secara deskriptif, kelompok dengan WIT2 >45 menit memiliki rerata kreatinin lebih tinggi ($2,49 \pm 2,29$ mg/dL) dibandingkan kelompok WIT2 <45 menit ($2,01 \pm 1,15$ mg/dL). Namun, analisis statistik menunjukkan tidak terdapat perbedaan bermakna antara kedua kelompok, baik pada kadar kreatinin ($p = 0,405$) maupun eGFR ($p = 0,338$).

Kesimpulan: Meskipun kelompok dengan WIT2 memanjang (>45 menit) menunjukkan tren kadar kreatinin yang lebih tinggi, tidak ditemukan perbedaan signifikan secara statistik pada fungsi ginjal hari ke-7. Diperlukan penelitian lanjutan dengan sampel lebih besar dan kontrol ketat terhadap faktor perancu untuk mengonfirmasi dampak klinis WIT2.

Kata kunci: *Delayed graft function*, *Second Warm Ischemia Time* (WIT2), transplantasi ginjal, fungsi ginjal.

ABSTRACT

Background: Delayed Graft Function (DGF) is a critical complication following kidney transplantation. The temperature rise during Second Warm Ischemia Time (WIT2) triggers anaerobic metabolism and reperfusion injury, contributing to cellular necrosis and immune activation. This study aims to evaluate the impact of WIT2 duration on kidney function (serum creatinine and eGFR) on day 7 post-transplantation.

Methods: An analytic observational study with a retrospective cross-sectional design was conducted on 47 kidney transplant recipients at Dr. Sardjito Hospital from 2018 to 2022. Subjects were categorized based on WIT2 duration (<45 minutes and >45 minutes). Kidney function outcomes were assessed using serum creatinine and estimated Glomerular Filtration Rate (eGFR) on day 7 post-operation. Data were analyzed using the Mann-Whitney test with a significance level of $p < 0.05$.

Results: The mean WIT2 duration was 58.83 ± 51.82 minutes. Descriptively, the group with prolonged WIT2 (>45 minutes) showed higher mean creatinine levels (2.49 ± 2.29 mg/dL) compared to the shorter WIT2 group (2.01 ± 1.15 mg/dL). However, statistical analysis revealed no significant difference between the two groups in either serum creatinine ($p = 0.405$) or eGFR ($p = 0.338$).

Conclusion: Although the prolonged WIT2 group (>45 minutes) demonstrated a trend toward higher creatinine levels, no statistically significant difference in kidney function was observed on day 7. Further research with a larger sample size and strict control of confounding factors is required to confirm the clinical impact of WIT2.

Keywords: Delayed graft function, Second Warm Ischemia Time (WIT2), kidney transplantation, kidney function.