



ABSTRACTS: VOLUME 8, SPECIAL ISSUE {8th Undergraduate Conference}

COMPARISON OF CLINICAL AND HEMATOLOGICAL MARKERS IN KIDNEY TRANSPLANT RECIPIENTS AND HEMODIALYSIS PATIENTS IN THE WEST BANK, PALESTINE

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Abstract

Background: Chronic kidney disease (CKD) is a significant global health issue, with mortality rates rising from 19th in 2000 to 9th in 2021, and projected to be the fifth leading cause of years of life lost by 2040. Patients with end-stage renal failure require lifelong renal replacement therapy, either through hemodialysis or kidney transplantation. In Palestine, understanding clinical and biochemical indicators for both treatment groups is essential. This study **aimed** to compare key clinical and hematological parameters between dialysis and kidney transplant patients in the West Bank.

Methods: A retrospective, descriptive, analytical study was conducted in three Palestinian governmental hospitals between March and April 2025. Data from 220 patients (153 on hemodialysis and 67 kidney transplant recipients) were extracted from medical records, including hemoglobin, creatinine, urea, and potassium levels at treatment initiation and the most recent follow-up. Statistical analysis included, non-parametric tests, and multivariable binary logistic regression analysis.

Results: Kidney transplant recipients showed significant improvement in hemoglobin levels ($p = 0.002$), while hemodialysis patients did not. Although urea levels decreased in hemodialysis patients ($p < 0.001$), values often remained above normal. In contrast, transplant recipients demonstrated greater biochemical stability, with 53.7% achieving normal creatinine compared to only 0.7% of dialysis patients. Multivariable logistic regression analysis confirmed that treatment modality was the strongest predictor of achieving normal laboratory parameters. Conclusion: This study demonstrates that kidney transplantation is associated with superior hematological and biochemical stability compared to long-term hemodialysis, as reflected by routinely measured laboratory indicators. Using real-world medical records, these findings provide locally relevant evidence from Palestine and support the clinical value of kidney transplantation as



PalStudent Journal
A Palestinian Scientific Journal for the Youth



an effective renal replacement therapy when feasible. The results also underscore the importance of routine laboratory monitoring in optimizing outcomes among patients receiving renal replacement therapy.

Key Words: Kidney Transplant, Hemodialysis, Clinical Markers, Hematological Markers, Chronic Kidney Disease.