**PROTOCOL KIDNEY TRANSPLANT BIOPSIES AID IN CLINICAL PRACTICE**

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**BACKGROUND:**

Kidney transplantation is the treatment of choice for most patients with end‐stage kidney disease. Despite the improvement in short‐term outcomes of kidney transplantation over the last 15 years, there has not been a significant improvement in long-term graft survival rates. [1] Subclinical rejection, defined as a histological diagnosis of acute rejection in a protocol biopsy obtained in a patient with stable kidney function, is associated with interstitial fibrosis and tubular atrophy (IF/TA) which is a major cause of graft failure. [1] Other pathological processes such as calcineurin inhibitor (CNI) toxicity, BK virus‐associated nephropathy (BKVAN), donor‐related disease and recurrence of primary disease can also contribute to poorer outcomes if left untreated. [2] Routine protocol biopsies have been implemented in this setting because clinical signs and symptoms of rejection generally emerge only relatively late in the course of the rejection reaction, where rejection is usually severe. [2] Protocol or surveillance renal allograft biopsies performed during the first year after kidney transplantation provides insight into the pathogenesis of early and late allograft injury.[3] Unexpected findings in these biopsies permitted this procedure to become a clinical management tool for treatment modification when subclinical pathology is detected. It allows for early intervention in acute rejection, as well as, safe reduction of immunosuppression in standard risk individuals. [4] Detection of potentially reversible chronic pathologies such as chronic T-cell or antibody-mediated rejection, recurrence of primary disease, interstitial fibrosis and tubular atrophy, and cyclosporine nephrotoxicity allows for adjustment of therapy. [4]

**METHOD:**

Inclusion criteria included patients with less than one-year post kidney transplant who had a stable post graft clinical course with a stable serum creatinine, and no clinical or laboratory findings suggestive of graft rejection, drug toxicity, or infection.

**RESULTS:**

26 cases of kidney transplants that underwent protocol biopsies post transplant at Hammoud Hospital University Medical Center (HHUMC) were included in this study.

**Demographic**: The patients age ranged from 16 to 64 years old, with a 20:6 male to female ratio

**Clinical features**: All patients had a stable serum creatinine between 0.4 and 1.9 mg/dl, no clinical or laboratory findings suggestive of graft injury, 3 to 6 months post transplant.

**Pathological features**: Primary disease is known in eight patients only (5 had renal stones, 1 had IgA nephropathy, 1 had Systemic Lupus Erythematosus, 1 had Focal Segmental Glomerulosclerosis). The donors were close relatives except for two who had unrelated donors, and one was cadaveric and developed delayed graft function.

**Diagnosis**: Morphology of the biopsies revealed 15 cases with absence of abnormal pathology, 3 had borderline changes suggestive of T-cell mediated rejection, 1 with T-cell mediated rejection, 3 had mild tubular injury, 4 showed mild IF/TA, 1 case showed granulomas, and 6/26 cases showed immune deposits (1 with non-specific IgM deposits, and rare eosinophils, and 1 with full house immune deposits confirmed by electron microscopy, 1 case with IgA deposits, 1 with acute tubular injury).

**CONCLUSION:**

Kidney biopsy is a safe and inexpensive protocol especially when compared with costs of earlier graft failure and return to dialysis. Implementation of protocol biopsies and early detection of injury may improve long-term graft function. [4]

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