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How Should Acute T Cell–mediated Rejection of Kidney Transplants be Treated: Importance of Follow-up Biopsy From Kidney Transplantation

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Aziz et al[1] in Wisconsin published their experience with protocol repeat biopsies in 163 episodes of T cell–mediated rejection (TCMR) between 2015 and 2020. Among their patients with a complete response as assessed by kidney function, 14% had a partial or no response histologically. Among patients with no kidney function response, 68% had a complete response histologically. They concluded that responses based on kidney function alone did not correlate with histology. These findings were echoed in the meta-analysis by Ho et al.[2]

We present our single-center experience of for-cause renal biopsy in which isolated TCMR was found between 2018 and 2021. There were 22 cases (total 349 transplantations) of isolated TCMR in which a repeat biopsy at a median of 14 (range, 5–30) d was performed.

There were 6 episodes of borderline TCMR, 5 episodes of Banff 1A, 2 episodes of Banff 1B, 7 episodes of Banff 2A, and 2 episodes of Banff 2B rejections.

Borderline TCMR and 1A Banff rejections were invariably treated with 250 to 500 mg IV methylprednisolone for 3 d. Three episodes of 2A and 2 episodes of 2B rejections were additionally treated with 3 to 7 mg/kg of antithymocyte globulin. The remainder episodes of the 2A rejection were treated with methylprednisolone alone.

Seventeen of 22 patients (77%) had improved creatinine with these treatment regimens. Nine of 17 patients (53%) had complete resolution of interstitial inflammation, tubulitis, or vascular lesions. Eight of 17 patients (47%) had residual histology requiring higher target tacrolimus trough levels (n = 5), 2 patients required 3 additional doses of 250 to 500 mg intravenous methylprednisolone, and 1 patient changed from mycophenolate to everolimus.

Five of 22 patients (23%) showed no improvement in creatinine (3 had borderline TCMR, 1 had 1A rejection, and 1 had 2A Banff rejection) with repeat biopsies at 6, 14, 14, 14, and 22 d. Complete resolution of histology occurred in 2 of 5 patients (40%). Three of 5 patients (60%) had residual histological features requiring a further 3 doses of 500 mg of methylprednisolone and 2 patients aimed for higher tacrolimus trough targets.

Although our data represent for-cause biopsy, rather than protocol biopsy, they reemphasize the data from Aziz et al[1] and Ho et al.[2] Irrespective of the improvement in creatinine, a repeat biopsy showed complete resolution of histology in only 40% to 53% of patients at a median of 2 wk after the first biopsy.

With the global pandemic, delivery of patient care was frequently dictated by the level of lock down, and telehealth was used at a rate unlike ever before. However, the experience of our center together with the published literature highlights the importance of rebiopsy posttreatment of TCMR.

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