Clinical significance of chronic active T-cell-mediated rejection

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Background: Chronic active T-cell-mediated rejection (CATCMR) was newly added to the Banff classification in 2017. Currently, its response to treatment, natural course, and clinical significance is largely unknown.

Methods: We performed a retrospective review of renal allograft biopsy performed after 2018 (diagnosed on behalf of Banff 2017 classification) for cases of CATCMR.

Results: We identified 38 biopsies from 36 patients with a diagnosis of CATCMR. Thirty-six initial biopsies of CATCMR were in 33.3% from protocol biopsies (1-year protocol biopsy, n=11; 5-year protocol biopsy, n=1) and the remainder (n=24) were from for-cause biopsies. While all CATCMR from protocol biopsies were isolated, 29.2% of the CATCMR from for-cause biopsies had a concurrent diagnosis of antibody-mediated rejection (AMR) pathology. All 12 patients diagnosed with CATCMR during protocol biopsy were treated with steroid pulse therapy. In one patient, graft function was further improved beyond the baseline upon treatment. During the median follow-up of 8.5 months after the index biopsy, no patient has experienced deterioration of graft function and all are free of rejection and graft failure. Patients with isolated or mixed CATCMR diagnosed during for-cause biopsy received either no treatment (n=2, 8.3%), steroid pulse therapy only (n=15), antithymocyte globulin (ATG; n=1), or AMR treatment (i.e., PP, IVIG, RTX) with or without steroid therapy (n=6), and 50% showed complete or partial response (7/15 with steroid, 0/1 with ATG, 4/6 with AMR treatment). During follow-up, seven of the treated patients (31.8%) experienced graft failure (59.9% estimated graft survival rate by 1-year post-index biopsy). Among the for-cause biopsy group, graft failure was associated with renal function at the time of index biopsy (hazard ratio [HR], 3.48; 95% confidence interval [CI], 1.48–8.2; P=0.004) and higher ct score (HR, 18.0; 95% CI, 1.51–215.7; P=0.022).

Conclusions: While further long-term studies are warranted, CATCMR detected during protocol biopsy and for-cause biopsy should be regarded as a separate entity considering their difference in outcomes.

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