

신장이식 환자의 3개월 프로토콜 조직검사에서 C4d 음성 미세혈관염증의 임상적 의의

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Clinical Significance of C4d-negative Microvascular Inflammation in Protocol Biopsy

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Background: Microvascular inflammation (MVI, defined as glomerulitis >0 and/or peritubular capillaritis >0) is one of the histologic findings supporting antibody-mediated rejection. But in case of a C4d negative MVI without rejection in protocol biopsy (PBx), its clinical significance is not fully investigated.

Method: We evaluated 129 renal allograft PBx. We analyzed associating factors with MVI and clinical course according to presence of MVI in PBx,

Result: From March 2010 to December 2012, 3-month renal allograft PBx was performed in 129 out of 374 KT recipients (34.5%) at Seoul St. Mary's hospital. Highly sensitized recipients (defined as PRA >50% and/or positive for crossmatching test) were 28 (21.7%), ABO incompatible KT recipients were 14 (10.9%). Mean duration from KT to PBx was 103.1±19.3 days. In total 129 PBx, 11 showed MVI (8.5%) and among them, only one was positive for C4d. Between positive for MVI (MVI (+)) and negative for MVI (MVI (-)) group, there was no difference in baseline characteristics except percent of highly sensitized recipients (54.5 vs. 18.6%, p=0.013) and degree of HLA B mismatched (1.7±0.4 vs. 1.2±0.6, p=0.009). Prior rejection rate was higher in MVI (+) group than MVI (-) group (18.2 vs. 0.8%, p=0.019), and subclinical rejection rate on PBx was also higher in MVI (+) group (54.5 vs. 10.2%, p=0.001). Among Banff scores, only i (mononuclear cell interstitial inflammation) score was associated with presence of MVI (100 vs. 53.4%, p=0.002). But between two groups, graft function recovery pattern after KT, serum creatinine level at PBx (1.04±0.23 vs. 1.12±0.26 mg/dL, p=0.309), subsequent rejection rate (0 vs. 8.5%, p=0.6), graft failure (0 vs. 2.5%, p=1.0), and renal allograft function at 1 year after PBx (1.07±0.4 vs. 1.20±0.68 mg/dL, p=0.544) showed no difference.

Conclusion: C4d negative MVI on PBx was associated with presensitization, HLA B mismatch, prior and subclinical rejection. It may be possible that C4d negative MVI predicts subsequent rejection and worsens long-term allograft function, and it may need preemptive therapy. To prove it, we need more data from studies in large number of C4d negative MVI cases with long-term follow up.

Key Words: C4d 음성, 미세혈관염증, 프로토콜 조직검사

C4d negative, Microvascular inflammation, Protocol biopsy