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The Influence of Cytomegalovirus Infection in Kidney Transplant Recipients with Pneumocystis jirovecii pneumonia

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Objectives: Pneumocystitis jirovecii pneumonia (PJP) is associated with a significant morbidity and mortality in kidney transplant recipients (KTR). CMV infection is independent risk factors for PJP, but its influence on clinical outcomes is undetermined in KTR with PJP pneumonia.

Methods: Between January 1997 to Febuary 2019, 52 KTR who were diagnosed with PJP were included in this study. All KRT were treated with bactrim for 6 months prophylactally. PJP was diagnosed and defined the severity based on consensus guidelines. CMV was diagnosed by polymerase chain reation (PCR) in blood or respiratory samples. Late-onset PJP was defined as PJP occuring beyond 1 year after transplantation. We compared morbidity and mortality stratified by CMV co-infection status.

Results: The mean time of PJP development was 63.7 months post-transplant. 43 patients (82.7%) developed late-onset PJP and 9 patients (17.3%) developed early-onset PJP. Twelve patients (23.1%) had a CMV infection proven by blood or respiratory samples prior to PJP diagnosis or PJP-CMV co-infection. Renal functions at the time of diagnosed PJP were significantly lower in patients with CMV *(MDRD-eGFR 18.56 ml/min/1.73 ㎡ vs 30.48 ml/min/1.73 ㎡, p=0.032*). 8 of 12 patients progressed to graft failure during follow-up period after PJP treatment (OR:2.22, CI 95%: 1.20-4.13, p=0.04). The mortality rate in patients with CMV was not significant ly different from patients without CMV infection (*3 of 12;25% vs 6 of 40;15%, p=0.415*).

Conclusions: CMV infection is associated with poor graft outcome in KTR with PJP. The awareness of CMV and prompt initiation of antiviral treatment may reduce the risk of graft loss in KTR with PJP.