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타크로리무스 기반 면역억제제 투여중인 환자에서 이식 초기의 비성숙 B 림프구의 감소

가톨릭의과대학 서울성모병원 내과학교실 신장내과¹, 장기이식연구소², 면역융합질환연구사업단³

정병하¹, 김경운², 김보미², 조미라³, 양철우¹

Decrease of Immature B Cell and Interleukin-10 during Early-post-transplant Period in Renal Transplant Recipients Under Tacrolimus Based Immunosuppression

Byung Ha Chung¹, Kyung Woon Kim², Bo-Mi Kim², Mi-La Cho³, Chul Woo Yang¹

Department of Internal Medicine Division of Nephrology¹, Transplant Research Center²
Onvergent Research Consortium for Immunologic Disease³, The Catholic University of Korea Seoul St. Mary

B lymphocytes are known to play a role in kidney transplantation (KT) outcomes. Here, we evaluated the proportion of B cell subsets before and after KT. Twenty-one patients, who showed stable allograft function without acute rejection in the month following the KT, were included in this study. Peripheral blood samples were obtained from these patients before transplantation as well as 1 month after transplantation. Changes in the proportion of B cell subsets after transplantation were investigated using multi-color flow cytometry. The proportion of lymphocytes in the peripheral blood mononuclear cells (PBMCs) and of CD19+ B cells in the total leukocyte population did not change after KT. Similarly, the proportions of CD19+CD24+ lymphocytes, mature B cells (CD24^{int}CD38^{inter}/CD19+), and memory B cells (CD24+CD38⁻/CD19+) did not change post-KT. However, the proportion of immature B cells (CD24+CD38⁺/CD19+ B cells) decreased significantly after transplantation ($p < 0.01$). The levels of IL-10, IL-21, and expression of the B cell marker BLNK also decreased significantly after transplantation. Incubation of PBMCs with tacrolimus (0.1, 1, and 10 ng/mL), an immunosuppressant, resulted in significant reduction in the percentage of immature B cells. In contrast, the proportion of memory and mature B cells was not affected. Taken together, these results show that while the total B lymphocyte count and the proportion of memory/mature B cell subsets do not change after KT, the proportion of immature B cells and the associated cytokines they secrete decrease significantly.

Key Words: 신장이식, B 림프구, 타크로리무스

Kidney transplantation, B lymphocyte, Tacrolimus