S-D12

당뇨병성 만성콩팥병에서 Th17 t세포와 Th1 세포의 dysregulation

건국대학교병원 신장내과[1], 건국대학교 의학전문대학원 미생물학교실[2], 건국대학교 의학전문대학원 생리학교실[3]

서은혜[1], 박 솔[2], 김주동[2], 김보경[3], 이승현[2], 조영일[1]

Dysregulated Balance of Th17 and Th1 Cells in Diabetic Chronic Kidney Disease

Eun-Hye Seo[1], Sol Park[2], Joo-Dong Kim[2], Bo-Kyung Kim[3], Seung-Hyun Lee[2], Young-Il Jo[1]

Nephrology Konkuk University Hospital[1], Department of Microbiology[2]
Department of Physiology and Biotechnology[3]

Background: The etiological cause of diabetic nephropathy has yet not to be clarified. It seems that immune related factors play important roles in pathogenesis of type 2 DM (T2DM) and diabetic nephropathy. Recent reports have focused interest on the role of the balance between interleukin (IL)-17 producing T cells (Th17) and Interferon(INF)-γ producing T cells (Th1) in immune-mediated disease.

Purpose: This research was designed to evaluate the frequency of Th17 and Th1 cells and the balance between Th17 and Th1 cells in T2DM patients with diabetic chronic kidney disease (CKD).

Methods: Thirty-eight T2DM patients with diabetic CKD (age 58.9±11.3, eGFR-MDRD 27.0±17.2 mL/min/1.73m^2) and 14 healthy controls (age 64.8±11.0) were recruited ($p=0.163$ for age, $p<0.0001$ for eGFR). Peripheral blood mononuclear cells were collected and stimulated with phorbol myristate acetate and inomycin. The frequency of Th17 cells producing IL-17 and Th1 cells producing IFN-γ was measured by using flow cytometry.

Results: T2DM Patients with diabetic CKD revealed an increased frequency of Th1 cells compared with healthy subjects. However, the frequency of Th17 cells was similar between the two groups, indicating an altered balance of Th1 and Th17 cell responses in diabetic CKD. Patients with diabetic CKD also had an increased frequency of CD4+CXCR3 T cells that are known to produce INF-γ but no changes in frequency of CD4+CCR4+CCR6+ T cells that are known to produce IL17.

Conclusion: These results indicated that INF-γ and the dysregulated balance of Th17 and Th1 cells may play an role in the pathogenesis of diabetic CKD.

Key Words: 제2형 당뇨병, 만성콩팥병, T 세포
Type 2 diabetes mellitus, Chronic kidney disease, T cell