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T세포 아형에 대한 탈리도마이드와 덱사메타손의 혼합처리에 의한 면역 조절능

연세대학교 장기이식연구소[1], 연세대학교 내과학교실[2], 연세대학교 이식외과[3]

김범석[1,2], 김준예[1], 김은지[1], 조유리[1], 주동진[1,3], 허규하[1,3], 김명수[1,3], 김유선[1,3]

Immune Modulatory Effect of Thalidomide and Dexamethasone Co-treatment on T Cell Subsets

Beom Seok Kim[1,2], Joon Ye Kim[1], Eun Jee Kim[1], Yuri Cho[1], Dong Jin Joo[1,3]
Kyu Ha Huh[1,3], Myoung Soo Kim[1,3], Yu Seun Kim[1,3]

The Research Institute for Transplantation[1], Yonsei University College of Medicine
Department of Internal Medicine[2], Yonsei University Health System,
Department of Transplantation Surgery[3] and Yonsei University Health System

Background: Thalidomide (TM) is known to have anti-cancer and anti-inflammatory properties; however, its mechanism on T cells is still unclear. Previously we showed immune modulatory effect of TM on T cells, and corticosteroid potentiates therapeutic effect of TM on lupus nephritis model. Here we examined whether TM/corticosteroid co-treatment has synergistic immune modulatory role on T cells.

Methods: Splenic naive T cells (Tnaives) from C57BL/6 mice were sort-purified and cultured for CD4+ T cell proliferation and regulatory T cells (Tregs) conversion with TM and/or dexamethasone (DX) treatment. Also T cell suppression assay was performed to evaluate the function of converted Tregs. All samples were analyzed by flow cytometry after stained with anti-mouse CD4, Foxp3, OX40 (CD134), or glucocorticoid-induced TNFR-related protein (GITR; CD357).

Results: TM significantly decreased the proliferation of CD4+ T cells in dose-dependent manner ($p<.01$) and low dose DX co-treatment further decreased the proliferation synergistically ($p<.03$). In contrast, TM/DX co-treatment ameliorated the inhibitory effect and function of isolated DX on Treg conversion ($p<.04$). Furthermore DX treatment impaired the functions of converted Treg, which was recovered by TM/DX co-treatment. Also, Reduced GITR and OX40 expressions by DX treatment were ameliorated by TM/DX co-treatment (GITR; $p<.01$, OX40; $p<.04$).

Conclusion: Considering the selective effect of TM on different T cell subsets, TM may have an immune modulatory role and DX co-treatment could further enhance the effect partially by the change of GITR and OX40 expression on Tregs. Further study is required to elucidate the underlying link between corticosteroid and thalidomide effect on T cells.

Key Words: T 세포, 탈리도마이드, 덱사메타손, 면역 조절
T cell, Thalidomide, Dexamethasone, Immune modulation