



AB009. Characterization of helper T cell subpopulations in early, mid-, and late-stage discoid lupus erythematosus (DLE)

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Abstract: Discoid lupus erythematosus (DLE) is characterized by early erythematous papules and plaques that progress to hyperpigmented and hypopigmented plaques with central scarring. The immunopathology of early and late stage DLE is not well characterized. In a previous study comparing multiple immune cell populations in different DLE stages, we found higher CD8⁺ T cells and lower CD20⁺ B cells in early DLE skin versus later DLE skin. To follow up on these findings, we compared helper T (Th) cell subpopulations in early (inflammatory), mid (inflammatory with scarring) and late-stage (scarring) DLE skin. We hypothesized a shift from Th1 response (pro-inflammatory) in early DLE skin to Th2 (pro-

fibrotic) response in late DLE skin. We performed double immunohistochemistry to compare Th1 (CD4⁺T-bet⁺) and Th2 (CD4⁺GATA3⁺) cells in formalin-fixed, paraffin-embedded skin biopsies of early (N=4), mid (N=4), and late stage DLE (N=3). Single positive and double-positive cells were manually counted in representative high-powered field areas of the epidermal-dermal junction (interface), perifollicular and perivascular areas. There were non-significantly higher percentages of Th2 cells within the perivascular (P=0.11) and interface (P=0.14) areas in late DLE skin compared with early and mid DLE skin. Early DLE skin also showed higher percentages of Th1 cells than Th2 cells in the perifollicular (P=0.13) and perivascular areas (P=0.13) but did not reach statistical significance. Larger samples are being collected to verify our findings. Elucidating immunologic differences in various stages of DLE will be important to finding therapies that reduce the chronic skin sequelae of scarring and dyspigmentation in DLE.

Keywords: Discoid lupus erythematosus (DLE); helper T cells

doi: 10.21037/atm.2019.AB009

Cite this abstract as: Coias J, Marzuka A, Hosler GA, Chong BF. Characterization of helper T cell subpopulations in early, mid-, and late-stage discoid lupus erythematosus (DLE). *Ann Transl Med* 2019;7(Suppl 4):AB009. doi: 10.21037/atm.2019.AB009