Acquisition of new migratory properties by highly differentiated cd4+cd28null t lymphocytes in rheumatoid arthritis disease

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Abstract

Expanded CD4+CD28^{null} T lymphocytes are found in the tissues and peripheral blood of patients with many autoimmune diseases, such as rheumatoid arthritis (RA). These highly differentiated cells present potent inflammatory activity and capability to induce tissue destruction, which has been suggested to predispose to the development of more aggressive disease. In fact, preferential migration to inflammatory sites has been proposed to be a contributing factor in the progression of autoimmune and cardiovascular diseases frequently found in these patients. The functional activity of CD4+CD28^{null} T lymphocytes is largely dependent on interleukin 15 (IL-15), and this cytokine may also act as a selective attractor of these cells to local inflammatory infiltrates in damaged tissues. We have analysed, in RA patients, the migratory properties and transcriptional motility profile of CD4+CD28^{null} T lymphocytes compared to their counterparts CD28+ T lymphocytes and the enhancing role of IL-15. Identification of the pathways involved in this process will allow us to design strategies directed to block effector functions that CD4+CD28^{null} T lymphocytes have in the target tissue, which may represent therapeutic approaches in this immune disorder.

Author keywords

CD4+CD28^{null} T lymphocytes; IL-15; Migration; Rheumatoid arthritis