Potential role of Th17 cells in the pathogenesis of type 2 autoimmune pancreatitis.

Abstract:

Th17 cells have been shown to play an important role in the pathogenesis of a variety of autoimmune diseases. The aim of this study was to investigate the potential role of Th17 cells in autoimmune pancreatitis (AIP). Quantitative real-time polymerase chain reaction (qRT-PCR) was performed to determine gene expression of the signature cytokines of Th17 cells IL-17A and IL-21 and of the Th17 lineage-specific transcription factor retinoic acid receptor-related orphan receptor C (RORC) in human tissue specimens of AIP, classical chronic pancreatitis (CP), and normal pancreas (NP). Infiltrating immune cells were characterized by immunohistochemistry (IHC). Gene expression of IL-17A, IL-21, and RORC were found to be significantly increased in AIP. Accordingly, the number of Th17 cells was significantly increased in AIP compared to NP or CP. Both gene expression analysis and IHC revealed a clear difference between type 1 and 2 AIP. In the periductal compartment of type 2 AIP, which is characterized by granulocytic epithelial lesions (GELs), the number of infiltrating Th17 cells and neutrophilic granulocytes was significantly increased compared to type 1 AIP. Our data suggest that Th17 cells play a role in the pathogenesis of AIP, in particular of type 2 AIP. Cross-talk between Th17 cells and neutrophilic granulocytes mediated via IL-17A may be a potential mechanism by which
neutrophils are recruited to the duct and acinar cells with subsequent destruction, a process that is pathognomonic for type 2 AIP.