

Title: Pathogenic Th17 Cell Pathology and enhanced CD4 and CD8 T cell responses in Chronic Inflammatory Demyelinating Polyneuropathy

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Chronic inflammatory demyelinating polyneuropathy (CIDP) is an autoimmune disorder of the peripheral nerves with an incompletely understood autoimmune mechanism. T cells are a group of cells that play an important part in immune system function (a subtype of white blood cells). There are types of T cells that promote inflammation and types of T cells that suppress inflammation. Patient response to therapies targeting the immune system supports an autoimmune cause of CIDP, and this investigation focused on defining T cell frequencies and functional capacity in patients with CIDP.

We examined white blood cells in 25 CIDP patients meeting EFNS/PNS criteria, 20 patients with a genetically confirmed hereditary neuropathy and 25 healthy controls. In our results, pro-inflammatory CD4 and CD8 T cells were found to have an enhanced capacity to produce inflammatory cytokines in patients with CIDP. There was no difference in the frequency of a specific inflammatory cell called pathogenic Th17 cells in CIDP patients versus healthy controls. We found that a population of T cells that suppresses inflammation (called a T regulatory cell) have a reduced ability to suppress inflammation. In summary, this study demonstrates both an increase in pro-inflammatory T-cells and a decreased ability of the T regulatory cell to control inflammation. These data help further define the pathophysiology of this autoimmune disease and will hopefully lead to better treatment approaches in the future.