

## HUMAN INTERLEUKIN-12 p40 INDUCED IMMUNE RESPONSES IN HETEROGENIC GROUP OF HEALTHY LEPROSY CONTACTS

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A steep decline in leprosy research, probably for the erroneous belief that the battle is won, has left many un-answered questions even in the basic factors of leprosy and exact mechanism of disease, infection and progression. It is known that *Mycobacterium leprae* could get transmitted to personnel in any hospital even when the hygienic conditions are much higher than among people in leprosy endemic areas. The disease resists experimental transmission in human, despite scores of attempts by leprosy workers to intentionally inoculate themselves, patients, friends, and students. A high proportion of positive response was found among medical personnel working with leprosy and among household contacts of leprosy patients. Many results indicate that *M. leprae* is frequently transmitted to contacts of patients including medical attendants, particularly in individuals suffering from malnutrition. Contacts harbouring *M. leprae* may remain asymptomatic for long periods before they develop active disease. Close and long-term contact with an untreated leprosy patient is considered to be a major risk factor for infection. Bio chemical analysis of albumin, globulin and CRP levels are vital to understand infection and inflammation. Anti-inflammatory cytokines play an important

role in regulating the production of Interleukin-12 and IL-23 and often act as negative feedback mechanisms for avoiding excessive inflammation. Type-1 cytokines, including IL-12, play an important role in protective immunity to intracellular pathogens and tumors, as well as in inflammatory and organ-specific autoimmune diseases. IL-12, which is produced by macrophages and dendritic cells (DC), causes deviation of CD4+ T cells to a Th1 like pattern of cytokine production. Both CD4+ and CD8+ T cells are known to be responsible for protection against mycobacterial infection. To study the mechanism of responsiveness to IL-12 in human infectious disease, we chose leprosy as a model because of its spectrum of clinical manifestations that correlate with the level of CMI to the pathogen *Mycobacterium leprae*. We examined the role of the IL-12 isoform, regulatory IL-12p40, in healthy leprosy contacts who served leprosy patients at different capacities for decades. Three different groups were marked and examined for haematological, bio-chemical and immunological parameters including human IL-12p40 in comparison with healthy non leprosy contact volunteers.

**KEYWORDS:** *Mycobacterium leprae*, Cytokines, Interleukin-12p40, Autoimmune, Inflammatory