Abstract:

Tuberculosis (TB) develops only among ~10%, while ~90% of the infected persons do not have the disease during their lifetime after infection. There are different forms of TB and the presentations of the disease show a wide variety in terms of severity and outcome. TB pleuritis is a paucibacillary infection and are self limiting. Whereas, in the new and relapsed pulmonary TB cases fibrocaseative lesions show the incompetent immune status which cannot restrict the pathogen completely, but could confine the pathology to a limited area. However, miliary TB is the most serious type characterized by the hematogenous spread of the bacteria throughout the lung and or other part of the body.

Relapse in TB occur either due to reactivation or reinfection by the pathogen. Reactivation of healed tuberculosis lesion is a common phenomenon amongst elderly patients (>50 yrs). It is assumed that, with ageing, several deficiencies in immune response by macrophages might be responsible for this phenomenon.

Macrophage cells play a pivotal role during their initial encounter with Mycobacterium tuberculosis by their intrinsic or innate defense mechanisms. Moreover, these antigen presenting cells are central to the immune responses against M. tuberculosis. The balance between the invading pathogen and host defense mechanism are the determining factor and differential outcome of the disease.

The sharp distinction of the progressive deficiencies in the innate immune response noted in our study starting from pleural TB to new, relapsed/recurrent and miliary TB respectively correlates well with the outcome of the disease accordingly. More shift in the Th2 like cytokine responses and poor Th1 like cytokine responses were found to be associated with the poor immune status and severity of the disease.

The immune responsiveness of immunocompetent individuals varied from healthy controls to the different categories of TB patients. Differential responses by the macrophage from TB patients and healthy subjects towards the same antigenic stimulus indicated the importance of host related factors in the disease manifestation. Proper identification of markers of immune variations might help to assess prognosis and contribute to better understanding of the underlying immunopathological mechanisms.