

Neutrophils is an important cell component in pulmonary tuberculosis

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Tuberculosis is the leading cause of mortality among infectious diseases. The degree of pulmonary involvement is measured by the number of cavities, disseminated inflammatory profile and bilateral involvement. Nevertheless, the mechanisms involved in pulmonary lesions are still not well understood. In the present study, we prospectively depict the immune profile, microbial clearance and evolution of radiographic lesions in PTB patient cohort before and 60 days after anti-tuberculosis treatment (ATT) initiation. The analysis presented correlations among leukocytosis, mycobacterial loads in sputum and culture conversion and, the presence of severe pulmonary involvement: bilateral and/or multiple cavitation in radiographic chest image. Before ATT, high leukocytosis ($>10.000 \text{ cell/mm}^3$) was associated with number of cavities in radiographic chest image and mycobacterial loads. At 60 days of ATT, lower number of neutrophils was associated with improvement on radiographic chest image but not with mycobacterial load. These results are compatible with data obtained in murine model, suggesting that unknown molecular mechanisms can determine the preferred influx of neutrophils into the lung and this event may be associated with exacerbated pulmonary destruction. In addition, we suggest that high leucocyte load in patients who have not responded to treatment would be strictly related to an exacerbated immune response of the individual.

Key words: Inflammation, tuberculosis and Neutrophils.
Financial Support: CNPq, FAPERJ, CAPES.