

POSTER PRESENTATION

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# Enhanced frequency of neutrophils and inflammatory monocytes and diminished numbers of T and B cells in active pulmonary tuberculosis

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From First International Science Symposium on HIV and Infectious Diseases (HIV SCIENCE 2012) Chennai, India. 20-22 January 2012

## Background

*Mycobacterium tuberculosis* (M.tb) infects nearly 2 billion people worldwide. Effective immunity against M.tb infection requires co-ordinated responses from both innate and adaptive arms of immunity. To elucidate the immune responses important both in control of infection and in extra-pulmonary dissemination, we examined frequency and/or absolute numbers of T, B and NK cells, dendritic cells and other leucocyte populations in active tuberculosis patients.

## Methods

The frequency as well as absolute numbers of T cells (CD3+, CD4+, CD8+ T cells), B cells and NK cells as well as the frequency of innate immune cells (neutrophils and monocytes), dendritic cell subsets (pDC & mDC), T cell subsets (naïve, central and effector memory and regulatory T cells) was examined by flow cytometry in AFB smear positive pulmonary TB (Sm+) (n=30) and AFB smear negative pulmonary TB (Sm-) (n=24) and compared with extra-pulmonary TB (EP) (n=38).

## Results

Among the innate immune subsets, we observed significantly higher frequency of neutrophils and inflammatory monocytes in Sm+ pulmonary TB group when compared with Sm- pulmonary and EP TB group. On the

other hand, the absolute numbers of CD3+ T cells, CD4+ T cells, CD8+ T cells and B cells were significantly lower in Sm+ when compared with Sm- and EP TB group.

## Conclusion

Pulmonary TB is characterized by enhanced frequencies of neutrophils and inflammatory monocytes and diminished absolute counts of T and B cells, suggesting a crucial role for these cell populations in protection against TB disease development as well as extra-pulmonary dissemination.

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Published: 4 May 2012

doi:10.1186/1471-2334-12-S1-P23

**Cite this article as:** Kumar et al.: Enhanced frequency of neutrophils and inflammatory monocytes and diminished numbers of T and B cells in active pulmonary tuberculosis. *BMC Infectious Diseases* 2012 **12**(Suppl 1):P23.

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