



## Interactions between Immune Activation and Regulatory T Cells in Mycobacterium tuberculosis Infected Lymph Node

Fouad Seghrouchni

*Institute of National d'Hygiène, Morocco*

### Abstract:

Mycobacterium tuberculosis (Mtb) infection is a major global health problem. Furthermore, one-third of the world's population is thought to be infected by Mtb. Extra pulmonary TB represents approximately 20% of clinical TB disease. Lymph node tuberculosis (LNTB) is the most frequent extrapulmonary form.

At sites of infection, cellular immune responses play a pivotal role in control of Mtb infection with CD4<sup>+</sup> T cells having the central role. Following infection, CD4<sup>+</sup> T cells undergo activation to control infection by producing Th1 and Th17 cytokines. Poly-functional T cells, have been associated with protection against Mtb disease. On the other side, immune responses are modulated by T regulatory cells (Tregs). The relationship between Tregs and immune activation at sites of Mtb disease is still not clear. We showed that the proportion of activated CD4<sup>+</sup> and Tregs in Lymph node mononuclear cells (LNMC) was increased compared to peripheral blood mononuclear cells (PBMC). The correlation between Tregs and activated CD4<sup>+</sup> T cells was stronger in LNMC than PBMC. Tregs in LNMC showed a strong positive correlation with Th1 cytokine production (IL2, IFN $\gamma$  and TNF $\alpha$ ) as well as MIP-1 $\alpha$  after Mtb antigen stimulation. A subset of Tregs in LNMC co-expressed HLA-DR and CD38, markers of activation. In this lecture, these findings will be confronted to the results of other groups on the interactions between Tregs and the function and activation of CD4<sup>+</sup> T cells in the site of infection during LNTB and other form of ATB

### Biography:

Dr. Fouad Seghrouchni joined the National Institute of Hygiene since 1993 where he worked as biologist engineer. He has com-



pleted later his PhD in immunology from the university of Mohammed V of Rabat. In 2002, he joined Tor Vergata University of Rome to work in the in-silico prediction and conception of new sub-unit antigens of Mycobacterium tuberculosis. He participated in this framework in patenting an invention. Since 2006, Dr. Seghrouchni is the director of the Laboratory of Cellular Immunology in the National Institute of Hygiene. He has published more than 17 papers in reputed journals and he is the deputy editor North Africa of the journal of public health of Africa. He is the president of the Moroccan Association of Cytometry.

### Recent Publications:

1. Age-stratified pediatric reference values of lymphocytes in the Moroccan population.
2. Global initiative for congenital toxoplasmosis: an observational and international comparative clinical analysis.
3. Immune activation and regulatory T cells in Mycobacterium tuberculosis infected lymph nodes.

[Webinar on Hypertension and Healthcare, December 14, 2020, Vienna, Austria](#)

**Citation:** Fouad Seghrouchni, Interactions between Immune Activation and Regulatory T Cells in Mycobacterium tuberculosis Infected Lymph Node, December 14, 2020, Vienna, Austria