

# X ISNIM CONGRESS & III SIPNEI CONGRESS

## **PULMONARY TUBERCULOSIS AND MALE REPRODUCTIVE SYSTEM: AN IMMUNOENDOCRINE APPROACH.**

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**Introduction and aim:** Tuberculosis (TB) is caused by *Mycobacterium tuberculosis* (Mtb) and mainly affects the lungs. So far, it is not known whether pulmonary, non-disseminated TB can affect the male reproductive system. Therefore, the aim of this study was to investigate whether pulmonary TB produces immunoendocrine alterations in the male mice reproductive system.

**Methods:** BALB/c mice were infected intratracheally with Mtb strain H37Rv (250, 000 bacteria). Six infected and six control animals were euthanized at days 1, 3, 7, 14, 21, 28, 60, 90 and 120 post-infection (PI). CFUs counting from lungs, testis, prostate and seminal vesicles was performed to detect live mycobacteria. These organs were processed for histology and the epithelia from seminal vesicles and prostate were measured by automated morphometry. Spermatobioscopy was conducted to assess spermatozoid number and quality. Testosterone concentrations in sera were measured by radioimmunoanalysis (RIA) in both groups. The expression of IL-6, IL-1 $\beta$ , IL-10 and TGF- $\beta$  in the testicles was assessed by immunohistochemistry and Real Time PCR.

**Results:** Mtb only grew in lung tissue. No histological alterations were observed in the testicles from infected mice, but significant atrophy of the epithelium from seminal vesicles and prostate was seen in the late stages of TB. Spermatobioscopy revealed a decreased number of spermatozoids in the later stages of the disease. Serum androgens decreased in the infected mice compared to the healthy animals at 120 PI days. Altered expression of IL-6, TGF- $\beta$  and IL-1 were found in the infected mice testicles.

**Conclusion:** Our results indicate that pulmonary TB indirectly affects the male reproductive system morphology, the spermatogenesis and the expression of testis cytokines, which may be part of the endocrine changes caused by the infection.

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