

## AN ADVERSE IMMUNE-ENDOCRINE PROFILE IN PATIENTS WITH TUBERCULOSIS AND TYPE 2 DIABETES

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Diabetes is a risk factor for the development of pulmonary tuberculosis (TB) and both diseases present endocrine alterations likely to play a role in certain immuno-endocrine-metabolic associated disorders. Patients with TB, or with TB and type 2 diabetes (TB þ T2DM) and healthy controls (HCo) were assessed for plasma levels of cortisol, dehydroepiandrosterone (DHEA), estradiol, testosterone, growth hormone (GH), prolactin, insulin-like growth factor-1 (IGF-1), cytokines (IL-6, IL-10, IFN-g) and the specific lymphoproliferative capacity of peripheral blood mononuclear cells. All patients had higher levels of cortisol with a reduction in DHEA, thus resulting in an increased cortisol/DHEA ratio (Cort/DHEA). Increased prolactin and particularly GH levels were found in both groups of TB patients. This

was not paralleled by increased concentrations of IGF, which remained within the levels of HCo. Estradiol levels were significantly augmented in patients TB, and significantly more in TB þ T2DM, whereas testosterone levels were decreased in both groups of patients. IFN-g and IL-6 concentrations were significantly increased in all TB, even further in TB þ T2DM; while IL-10 was equally increased in both groups of TB patients. The in vitro specific proliferative capacity was decreased in both groups of patients as compared to that of HCo. The adverse immune-endocrine profile of TB seems to be slightly more pronounced in patients who also have T2DM.

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