

ABSTRACT

As patients with diabetes mellitus are at increased risk of developing tuberculosis. Some cytokines play an important role in the pathogenesis of type 2 diabetes mellitus and pulmonary tuberculosis co-morbidity. The objective of my study was to evaluate cytokine IL-10 plasma values as potential link between tuberculosis and type 2 diabetes. To explore this, i examined three groups of subjects from Lahore, Pakistan: 100 patients with diabetes only, 100 patients with tuberculosis and diabetes, and 100 healthy controls. The demographic characteristics such as gender, age, and BMI, and hematological parameters WBCs, Lymphocytes, Neutrophils, RBCs, Platelets, Hgb and in-vivo production of anti-inflammatory cytokine interleukin 10 were measured, which all have some effects on innate and adaptive immunity of type 2 diabetes mellitus and tuberculosis defense. However, Patients with type 2 diabetes showed increased IL-10 production, and patients with both active tuberculosis and diabetes were found to have lower IL-10 levels. My data suggested that in diabetic subjects a defective innate immune response and elevated level of IL-10 diminished the capacity of innate immune cells to kill pathogens and reduces antigen-specific T cells which may contribute to an increased susceptibility to develop tuberculosis. This confers IL-10 cytokine as a tuberculosis susceptibility biomarker. Based upon the present research work it is concluded that in patients with type 2 diabetes over expression of anti-inflammatory cytokine IL-10 make them more susceptible to tuberculosis other than that its normal value showed protection during tuberculosis.