

Inf- γ and Il-2 Asses the Therapeutic Response in Anti-tuberculosis Patients at Jamot Hospital Yaounde, Cameroon

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Abstract : Background: Tuberculosis (TB) is one of the top lethal infectious diseases worldwide. In recent years, interferon- γ (INF- γ) release assays (IGRAs) have been established as routine tests for diagnosing TB infection. However, produced INF- γ assessment failed to distinguish active TB (ATB) from latent TB infection (LTBI), especially in TB epidemic areas. In addition to IFN- γ , interleukin-2 (IL-2), another cytokine secreted by activated T cells, is also involved in immune response against Mycobacterium tuberculosis. The aim of the study was to assess the capacity of IFN- γ and IL2 to evaluate the therapeutic response of patients on anti-tuberculosis treatment. Material and Methods: We conducted a cross-sectional study in the Pneumology Departments of the Jamot Hospital in Yaoundé between May and August 2021. After signed the informed consent, the sociodemographic data, as well as 5 mL of blood, were collected in the crook of the elbow of each participant. Sixty-one subjects were selected (n= 61) and divided into 4 groups as followed: group 1: resistant tuberculosis (n=13), group 2: active tuberculosis (n=19), group 3 cured tuberculosis (n=16), and group 4: presumed healthy persons (n=13). The cytokines of interest were determined using an indirect Enzyme-linked Immuno-Sorbent Assay (ELISA) according to the manufacturer's recommendations. P-values < 0.05 were interpreted as statistically significant. All statistical calculations were performed using SPSS version 22.0 Results: The results showed that men were more 14/61 infected (31,8%) with a high presence in active and resistant TB groups. The mean age was 41.3 \pm 13.1 years with a 95% CI = [38.2-44.7], the age group with the highest infection rate was ranged between 31 and 40 years. The IL-2 and INF- γ means were respectively 327.6 \pm 160.6 pg/mL and 26.6 \pm 13.0 pg/mL in active tuberculosis patients, 251.1 \pm 30.9 pg/mL and 21.4 \pm 9.2 pg/mL in patients with resistant tuberculosis, while it was 149.3 \pm 93.3 pg/mL and 17.9 \pm 9.4 pg/mL in cured patients, 15.1 \pm 8.4 pg/mL and 5.3 \pm 2.6 pg/mL in participants presumed healthy (p <0.0001). Significant differences in IFN- γ and IL-2 rates were observed between the different groups. Conclusion: Monitoring the serum levels of INF- γ and IL-2 would be useful to evaluate the therapeutic response of anti-tuberculosis patients, particularly in the both cytokines association case, that could improve the accuracy of routine examinations.

Keywords : antibiotic therapy, interferon gamma, interleukin 2, tuberculosis

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