Cytokines Profile in the Serum and in the Spernatant of cultures of PMNBC from the leprosy patients

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Considering that the different clinical manifestations visualized in the spectrum of leprosy can be related with the imunological response, we have investigated the cytokines levels in the serum and in the supernatant of culture of peripheral mononuclear blood cells (PMNBC) from 35 leprosy patients and 10 normal individuals (controls). The patients were subdivided into LL(7), BL + BB(8), BT(7), TT(6) and ENL(7). All patients were classified by clinical, bacteriological and histological criteria. It was include only untreated patients. Cultures of adherent cells were developed in the presence of LPS (10μ/m1) / 24 hs/37° 5%CO2, and, the lymphoproliferative assay were treated with PHA (20μ/ml) / during 72 hs / 37° 5%CO2. The serum levels of IL1, IL4, IL6 and TNFα were measured by ELISA (R&D systems). The results showed significantly higher IL4 levels in multibacillary leprosy-MB (62.0 51.0 pg/ml in the serum and in the supenatants of LL, BL, BB patients), when compared with paubacillary-PB (1.3 and 0.0 pg/ml in the serum and supernatant of HBT, TT patients) and control group (0.0 pg/ml). IL4 levels were directly correlated with bacilloscopic index (BT), while TNF levels were inversely correlated with the BI. In contrast, the IL1, 1L6 and TNF levels were significantly lower in MB patients (in the serum 1.6, 5.6; 0.0 and 15.7, 5.8; 14.4pg/m1 in the supernatant) when compared with the levels of PB patients (33.7, 12.7 and 63.1, 22.0; 166.5pg/ml, respectively). In patients with ENL the TNF levels (101.5 and 199.8pg/m1 in the serum and supernatant, respectively) were significantly higher than in controls (30.5/serum and in the supernatant 64.0pg/ml) and were associated with decreased concentrations of IL4 (in the serum 52.9 and 38.5 pg/ml in the supernatant). These results suggest that the capacity of immune response in leprosy is related to the ability of cytokines IL1, IL6 and TNFα, to induce the activation and modulation of the response of phagocytic cells (macropage) and effector cells (T lymphocites) and the immunosuppression observed in LL could be maintained by 1L4 activity, through the supression of macrophage activation, associated with the presence of *M. leprae* and related antigens, since higher BI are correlated with elevated levels of IL4. Corroborating this suggestion we found increased production of inflammatory cytokines (IL1, 112 and TNFα) in patients presenting low or negative bacilloscopic index.