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Role of CCL3 protein (monocyte inflammatory protein-1 alpha) in lymphoid malignancy

Hanan Hamed [1], Sanaa Zaki

Department of Internal Medicine & Hematology, Faculty of Medicine, Ain Shams University, Cairo, Egypt.

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Monocyte inflammatory protein-1 alpha (MIP-1alpha) has been shown to be active as an inhibitor of primitive hematopoietic cell proliferation in vitro and in vivo. A dysfunction in this inhibitory process has been postulated to contribute to leukemogenesis. The aim of this study was to clarify the role of monocyte inflammatory protein-1 alpha (MIP-1alpha) in the pathogenesis of lymphoid malignancy. The study comprised 54 patients and 15 healthy controls. Patients were divided into 3 groups (25 with lymphoma, 12 with multiple myeloma and 17 with chronic lymphocytic leukemia). Serum MIP-1alpha level was estimated by Enzyme-Linked Immunosorbent Assay (ELISA). Sixteen patients were followed up to examine the relationship between serum MIP-1alpha level and response to treatment and survival of patients. The serum level (pg/ml) of MIP-1alpha was significantly higher in patients with lymphoid malignancy compared to controls (97.9 +/- 171.1 versus 2.5 +/- 2.2, p < 0.05). Comparing with controls, the correlation was statistically significant in patients with multiple myeloma and chronic lymphocytic leukemia (192.3 +/- 156.6, P < 0.001; 78.7 +/- 115.9, p < 0.05 respectively) but not in lymphoma patients (65.9 +/- 196.5, p > 0.05). There was a significant correlation between MIP-1alpha serum level and the overall survival of patients. Patients with higher MIP-1alpha level showed an increased percentage of death and relapse than patients with normal MIP-1alpha (72.72% versus 21.87%, p < 0.05). In conclusion, MIP-1alpha serum level could be a valuable prognostic parameter and may provide insight into creating a new therapeutic modality.