LEUKOCYTE FUNCTION AND CYTOCHEMICAL CHANGES IN RELATION TO FERRITN LEVEL IN PATIENTS WITH β - THALASSEMIA / Hb E DISEASE

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Abstract

Phagocytic and killing function of PMNs in β- thalassemia/Hb E patients (11 non splenectomized and 11 splenectomized patients) were measured by using S. aureus as the tested organism. Defective phagocytic function and limitted killing ability of thalassemic PMNs both from non splenectomized and splenectomized patients were shown. The defects were most likely occurred in the cell because the patients' plasma had no significant role in our study. The ferritin levels in PMNs and plasma were not correlated with phagocytic killing function. However, there were two splenectomized cases who had high ferritin and low phagocytic activity. The poor phagocytic activity may result from increased generation of toxic oxygen radicals by intracellular iron which, in turn, were toxic to the cells. Cytochemical studies revealed strikingly low leukocyte alkaline phosphatase (LAP) score in splenectomized patients ($P < 0.05$) compared with the normal controls. Dot staining pattern of acid α - naphtyl acetate esterase (ANAE) reaction in patients' lymphocytes, majority of which represented T lymphocytes, was significantly reduced. Changes in cell component demonstrated by cytochemical staining can not be related to the leukocyte function.