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Expression of Fas Antigen (CD95) on Human Leukemic Cells and Assessment of Apoptosis on Fas+ and Fas-Samples by Flowcytometry Method

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Abstract:

Regulation of normal cell growth and turnover is balanced between cell pro-liferation, cell differentiation and apoptosis. A disruption of this balance is thought to be an important event leading to carcinogenesis. One of the effector molecules in apoptosis is Fas antigen. Cross-linking of Fas by its ligand (Fas L) or agonistic anti Fas antibodies induces apoptosis of cells expressing Fas on the membrane by triggering cascade of caspases.



The aim of this research was to study the percent of expression of Fas antigen on bone marrow and peripheral blood cells in 100 patients suffering from acute lymphoid and myeloid leukemia by flow cytometry method. Sample were obtained at the time of diagnosis before antileukemic therapy. Expression of Fas antigen on normal control peripheral leukocytes was also analysed.

From these data, it was found that Fas antigen is expressed in all cases, but the expression level varied widely.

The percentage of Fas antigen expression in all of acute lymphoid leukemia samples was below 20%, but in acute myeloid leukemia samples, 8 out of 50 cases was above 20%. In normal control samples, the mean value for monocytes was higher than granulocytes and in granulocytes higher than lymphocytes.

Expression of Fas antigen in most of the leukemic cells was low and the preliminary results showed that increase in Fas antigen expression above 20% after treatment, is a favorable prognostic sign associated with increase relapse free and total survival. Thus evaluation of this antigen before, during and after treatment is recommended.

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