Original Paper

NPM1 and FLT3-(ITD) Gene mutations and laboratory findings in patients with acute myeloid leukemia in Northwest of Iran

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Abstract

Background and Objective: The acute myeloid leukemia (AML) is a malignant disease with an accumulation of the abnormal and undifferentiated blastic myeloid cell in the bone marrow, leading to abnormal hematopoiesis. This study was done to determine the NPM1 and FLT3-(ITD) mutations and laboratory findings in patients with acute myeloid leukemia.

Methods: This descriptive-analytic study was carried out on 40 (24 males, 16 females) patients with newly acute myeloid leukemia in Northwest of Iran. The mutation of NPM1 and FLT3-ITD were evaluated using PCR method in 25 patients. In all patients, the flowcytometry findings in the bone marrow, leucocytosis and the LDH levels were evaluated prior to the chemotherapy.

Results: The mutation of FLT3-ITD and NPM1 genes was detected in 15 (60%) and 9 (36%) of patients, respectively. FLT3-NPM1+ mutation was seen in 4 (16%) patients. Leukocytosis, LDH level and AML in different classes did no show any significant difference between FLT3-NPM1+ and other gene mutations.

Conclusion: The mutation of FLT3-ITD gene was nearly twice than NPM1 in acute myeloid leukemia.

Keywords: Acute myeloid leukemia, NPM1 gene, FLT3-ITD gene, Leukocytosis

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