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References


To the editor:

Rare occurrence of the JAK2 V617F mutation in AML subtypes M5, M6, and M7

It has recently been discovered that a single-site, clonal, gain-of-function mutation of the tyrosine kinase JAK2 (JAK2 V617F) is present in myeloid cells from the majority of patients with chronic myeloproliferative disorders (MPDs).1-3 In addition, JAK2 V617F can be detected in some patients with atypical chronic myeloid leukemia, chronic myelomonocytic leukemia (CML), chronic neutrophilic leukemia, idiopathic hypereosinophilic syndrome, systemic mastocytosis, or myelodysplastic syndrome.4-6

Analysis of patients with acute myeloid leukemia (AML) has shown that JAK2 V617F is present in a significant proportion of patients with secondary AML following a preceding MPD.4,5 In contrast, the prevalence of JAK2 V617F in de novo AML has been reported to be very low3,2; however, data on the frequency of JAK2 V617F in specific subtypes of de novo AML are limited.

The occurrence of JAK2 V617F in patients with CML1-6, our previous observation that the HEL cell line, which was established from the peripheral blood of a patient with erythroleukemia (AML M6 as defined by the French-American-British classification),7 carries a homozygous JAK2 V617F mutation (GenBank accession no. AY973034); and data showing that the JAK2/STAT5 signaling transduction pathway is constitutively activated in megakaryocytic leukemic cell lines8 prompted us to analyze 85 patients with AML M5, 53 patients with AML M6, and 14 patients with AML M7 for the presence of JAK2 V617F. One hundred fifty of the 152 patients were treated according to protocols of the German-Austrian AML...
Study Group; the remaining 2 patients were treated outside a clinical trial. In addition, we studied 7 patients with secondary AML following a preceding MPD who had been treated at the University Hospital of Ulm. Mutational analysis of JAK2 exon 12 was performed as previously described.8

A heterozygous JAK2 V617F mutation was identified in 0 of 85 patients with AML M5, 1 of 53 patients with AML M6, and 0 of 14 patients with AML M7. These findings extend those of Jelinek et al.,4 who detected JAK2 V617F in 0 of 20 cases with AML M0 through M5, 0 of 8 cases with AML M6, and 2 of 11 cases with AML M7. Of the 7 patients with secondary AML following a preceding MPD, 5 had JAK2 V617F: 3 cases with antecedent polycythemia vera, one case with pre-existing essential thrombocytemia, and one case with AML following idiopathic myelofibrosis. This observation is in accordance with 2 recent reports showing that the JAK2 V617F allele is common in patients who transform to AML from a pre-existing MPD.4,5

Our results indicate that the JAK2 V617F mutation is not a common event in the pathogenesis of AML M5, M6, and M7.


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