JAK2-V617F mutation status identifies subtypes of refractory anemia with ringed sideroblasts associated with marked thrombocytosis

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Design and Methods

Nine patients were male, 14 patients were female. Their mean age at diagnosis was 71 years (range, 57 to 81 years). None of the patients had iron deficiency or a post-splenectomy state. The median follow-up from the time of diagnosis was 10.8 years for the *JAK2*-V617F positive group and 9.1 years for the negative group. Arterial events included stroke (n=2; *JAK2*-V617F negative), transitory ischemic attack (n=1, *JAK2*-V617F negative) and peripheral arterial thromboses (n=2; *JAK2*-V617F positive). Deep vein thrombosis occurred in one *JAK2*-V617F positive patient. Two major vascular events were reported in the *MPL*-W515L positive *JAK2*-V617F negative woman (myocardial and mesenteric infarction).

Cytogenetic analyses rarely revealed rare karyotypic abnormalities including trisomy 8 and 21. Cytoreductive treatment consisted of hydroxyurea (n=9), hydroxyurea and anagrelide (n=1), hydroxyurea, anagrelide and cyclophosphamide (n=1), hydroxyurea and melphalan (n=1) and melphalan (n=1). One patient received interferon-α. In the *JAK2*-V617F, negative group, 9 patients died. The causes of death were unknown (n=2), pneumonia (n=1), stroke (n=2), myocardial infarction (n=1), lung cancer (n=1), and acute leukemic transformation (n=2). One patient with RARST-BP disease showed phenotypic features of acute myelomonocytic leukemia and acute erythroleukemia. The other patient who transformed to acute myelomonocytic leukemia with normal karyotype had been treated with hydroxurea for 9 years, while no therapy prior to the onset of AML was given in the other patient. In the *JAK2*-V617F positive group 2 patient died (gall bladder adenocarcinoma: n=1; unknown cause: n=1).

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