THE EVALUATION OF THE COMPLICATIONS, SURVIVAL AND CAUSES OF DEATH IN PATIENTS WITH PHILADELPHIA CHROMOSOME NEGATIVE MYELOPROLIFERATIVE DISORDERS

SUMMARY

Philadelphia chromosome negative myeloproliferative disorders are a clonal hematological disorders which are characterised by frequently secondary myelofibrosis and rarely leukemic transformation. Myeloproliferative disorders are a disease of pluripotent hematopoetic stem cell, and with the abnormal proliferation of the hematopoetic cell series progenitors granulocyte, erythrocyte or platalet count increase.

This study was performed in the Department of Internal Medicine, Division of Hematology of Adnan Menderes University Medical Faculty, AYDIN. In retrospective study, we evaluated the thromboembolic and hemorrhagic complications, the development of the secondary myelofibrosis and leukemic transformation, survival, factors affecting survival, causes of death, the significiance of the JAK2 mutation in the the diagnosis and complications in Philadelphia chromosome negative 104 myeloproliferative disorders patients.

Totaly 104 patients were included in the study and 54 of them (52%) were male. Mean age of the patients was 59±16 years (range 17-84). The distribituion of myeloproliferative disorders were essential thrombocythemia in 58%, polycythemia vera in 24%), and primary myelofibrosis in 18%. On physical examination, the most common findings were splenomegaly (46%), hepatomegaly (46%), pallor (28%), and eryhtromelalgia (14%). The most common complications were hemorrhage (50%), and thromboembolic events (42%). Secondary myelofibrosis and leukemic transformation were seen in the patients of 5% and 1%, respectively.

JAK 2 mutation was positive in forty-six patients (70%) of the 66 patient whose mutation was evaluated. The positivities of JAK2 mutation were 83% of patients with polycythemia vera, 61% of patients with essential thrombocythemia, and 80% of patients with primary myelofibrosis. Causes of death were thromboembolism (45%), disease progression (18%), respiratory insufficiency (14%), and other reasons (23%) in the patients with myeloproliferative disorders. Risk factors for thromboembolism were leukocytosis ($p=0.003$) and advanced age ($p < 0.005$). When used logistic regression, it was found that these two factors were significiant factors for theromboembolism (p values were respectively 0.027 and 0.025). Leukocyte count in the patients with JAK2 mutation was higher than those with

negative (p=0.005). There was not a difference for JAK2 positivity between patients with thromboembolism and without thromboembolism (p>0.05). Also there was not a significiant factor on hemorrhagic complications when used logistic regression analysis. The JAK2 mutation and platelet count had no effect on thromboembolism and survival. Mean survival time was significantly different between patients treated with aspirin and without (p<0.0001). Hydroxiurea was the most commonly used drug in myeloproliferative disorders. When performed Kaplan-Meier analysis, mean survival time was detected as 146±14 months in the patients with PV, 114±7 months in those with essential thrombocythemia, and 125±34 months in those with primary myelofibrosis, respectively. Mean survival time in patients with all myeloproliferative disorders were 157±20 months. However there was not a difference between groups for survival time.

In conclusion, thromboembolism and hemorrhagic complications were frequently seen in myeloproliferative disorders. Only leukocyte count and advanced age had effect on thromboembolic complications. While the diagnosis of myeloproliferative disorders have no effect on survival, thromboembolic events and the use of aspirin were significiant factors affecting survival time. For this reason, teh use of aspirin is an important issue to prevent thromboembolic events and to improve survival time.

Key words: Myeloproliferative disorders, thromboembolism, hemorrhage, JAK2 mutation, survival