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ACCEPTED MANUSCRIPT

Clinico-Hematological Profile and Thrombotic/Hemorrhagic Events in 150 Chinese Patients with Essential Thrombocythemia

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Highlights

• The study mainly focused on patients with newly diagnosed Essential Thrombocythemia before treatment.

• NLR was independent risk factors for future thrombosis but were not associated with thrombosis at diagnosis.

• NLR was a better prognostic marker for future thrombotic events and thrombosis-free survival than WBC count and other clinical parameters.

• Age was the only independent risk factor for major hemorrhagic events at diagnosis.

Abstract

Essential thrombocythemia (ET) is an uncommon chronic myeloproliferative disorder with no cure. Patients with ET are at risk of different complications, and currently there are no optimal prognostic standards to predict severe post-diagnosis complications such as thrombosis and hemorrhage. In this study, we retrospectively analyzed the full set of clinical data from 150 Chinese patients with ET enrolled from 2013 to 2016. We discovered that neutrophil-to-lymphocyte ratio (NLR), along with other known clinical parameters such as age, leukocyte count, incidence of thrombotic events is higher in patients with JAK2 V617F mutation. NLR is also higher in patients at high-risk stratification of thrombosis. Multivariate analysis showed that age (P=0.001, 95% CI 1.023-1.089) and JAK2 V617F mutation (P=0.003, 95% CI 1.837-21.035) were independent factors for thrombotic events, while age (P=0.005, 95% CI 1.019-1.111) was the only predictive factor for hemorrhagic events at diagnosis. For future thrombotic events, multivariate analysis revealed NLR as the best predictive parameter (P<0.001, 95% CI 1.173-1.486) when compared with other clinical parameters such as age (P=0.037, 95% CI 1.004-1.126), thrombosis at diagnosis (P=0.036, 95% CI 1.077-9.099) and WBC count (P=0.047, 95% CI 1.001-1.109). Further ROC curve and Kaplan Meier analysis validated NLR as better prognostic marker for future thrombotic events and thrombosis-free survival. In summary, our data suggest that NLR parameter may possess great prognostic significance for future thrombosis in ET patients.

Keywords

Neutrophil-to-lymphocyte ratio, Thrombosis, Hemorrhage, Essential thrombocythemia

1. Introduction

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