Association Between Soluble CD40L with Thrombosis Occurrence and JAK2 V617F Mutation in Essential Thrombocythemia

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Abstract:

Abstract: Thrombo-haemorrhagic events are the main cause of mortality in essential thrombocythemia (ET). The aim of this study was to measure soluble CD40 ligand (sCD40L) in the plasma of healthy individuals and in patients with an elevated platelet count and investigate the association of sCD40L with thrombosis in ET patients and their JAK2 V617F mutation. The plasma levels of sCD40L was measured in 75 patients. 35 patients diagnosed as ET, 25 patients diagnosed as reactive thrombocytosis (RT), 15 patients with low platelet count and 15 healthy subjects acted as the control group. 35 ET patients were assessed for JAK2 V617F status by utilizing a JAK2 V617F specific quenching probe. ET patients had the highest levels of sCD40L compared to the patients with RT and controls (225.70±79.34, 160.40±54.54 and 83.54±21.54) respectively and a tight correlation was found between the platelet count and sCD40L. Statistical analysis revealed that the JAK2 V617F mutation was associated with significantly increased levels of WBCs (p˂0.04) and sCD40L (p˂0.001) compared to JAK2 V617F negative patients. There was no significant association between JAK2 V617F mutation and thrombosis, but the level of sCD40L was significantly higher in patients with thrombosis than those without thrombosis (236.43 ± 75.93 vs 184.65 ± 62.31) respectively. Based on these findings, the presence of JAK2 mutation may changes the expression of soluble markers of endothelial and platelet activation besides the quantitative and qualitative changes in platelets. Mechanisms leading to thrombosis are more complex and multifactorial.

Published In:

American Journal of Internal Medicine , NULL , NULL