"In a prospective setting, we aimed to find associations between biomarkers of the hemostatic system and the occurrence of central venous catheter (CVC)-related thrombosis in patients with hematological malignancies undergoing intensive chemotherapy" Boersma et al (2015).

Reference:

Biomarkers for prediction of central venous catheter related-thrombosis
http://ctt.ec/bs05X+ @ivteam #ivteam

Click To Tweet

Abstract:

OBJECTIVE: In a prospective setting, we aimed to find associations between biomarkers of the hemostatic system and the occurrence of central venous catheter (CVC)-related thrombosis in patients with hematological malignancies undergoing intensive chemotherapy.

METHODS: The study was conducted between July 2006 and August 2010 at the University Hospital Maastricht, the Netherlands. Consecutive adult patients with hematological malignancies who were going to receive a CVC for intensive chemotherapy were included. The primary end points were (a) symptomatic CVC-related thrombosis and (b) CVC-related infections. Blood samples were taken directly after catheterization, and easy to determine biomarkers (platelet count, leukocyte count, and hemoglobin level) in combination with blood group, factor VIII (FVIII), plasminogen activator inhibitor 1 (PAI-1), activated protein C (APC) resistance, and free protein S antigen were determined.

RESULTS: Blood was collected and analyzed from 168 patients. The incidence of symptomatic CVC-related thrombosis was 9%. In univariate analysis, white blood cell count >10.6 × 109/L, mean FVIII activity, and PAI-1 >12.2 IU/mL were found to be associated with the development of symptomatic CVC-related thrombosis.

CONCLUSION: Elevated leukocyte count, high PAI-1, and high FVIII were associated with
an increased incidence of symptomatic CVC-related thrombosis. We hope in future that simple, easy to determine laboratory tests that reflect the hemostatic and fibrinolytic activity in combination with clinical parameters may help to identify hematological patients at highest risk of CVC-related thrombosis and help to tailor the management of thromboprophylaxis in hematological patients undergoing CVC placement.

Thank you to our partners for supporting IVTEAM