

Growth Differentiation Factor-15: A Novel Biomarker for Predicting Risk of Venous Thromboembolism and Bleeding in Patients with Cancer

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Risk of venous thromboembolism (VTE) is elevated in patients with cancer¹ and based on the findings from the CASSINI and AVERT trials, guidelines now suggest primary thromboprophylaxis also in ambulatory cancer patients with intermediate to high risk for VTE and no apparent risk for bleeding. However, the risk-to-benefit ratio of primary thromboprophylaxis in unselected patients with cancer is marginal and not routinely implemented in current clinical practice. Optimization of VTE and bleeding risk stratification in cancer patients could therefore improve patient management by better selecting patients who would benefit from primary thromboprophylaxis.

In this edition of *Thrombosis and Haemostasis*, Roy et al² investigated biomarkers, primarily used in the cardiovascular setting, for their predictive ability for risk of VTE in the study population of the AVERT trial, a cancer cohort with intermediate to high risk for developing VTE. Roy and colleagues report a positive association of growth differentiation factor-15 (GDF-15), a marker for oxidative stress and inflammation, and high-sensitivity cardiac troponin T (hs-TnT) with future risk of VTE. In a previous analysis on the same cohort, GDF-15 was also associated with major bleeding in cancer patients.³ However, GDF-15 and hs-TnT were not tested for their independent predictive value when compared with important risk stratifiers such as cancer type and stage or other biomarkers including D-dimer.

GDF-15 is currently not available in clinical routine, but evidence for its predictive nature for cardiovascular events and bleeding is building up in various disease settings. This study adds to previous literature on GDF-15 also being an important biomarker in the setting of venous thrombosis. Future studies need to evaluate the additional predictive value of GDF-15 and/or hs-TnT to currently existing risk prediction scores (Khorana, Vienna CATScore, CT-BLEED) to optimize VTE and bleeding risk prediction in patients with cancer.

Conflict of Interest

None declared.

References

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