Streszczenie w języku angielskim - Abstract

Patients with malignant tumours present with an increased risk of venous thromboembolism (VTE), which is often a leading cause of death among this group. The hypercoagulable state adversely affects the prognosis of many cancers. Neuroendocrine neoplasms (NENs) belong to a heterogeneous group of malignant neoplasms that vary in their biological behaviour from different malignancies. Despite numerous reports in the literature documenting VTE events in NENs, data regarding the assessment of coagulation parameters and recommendations for thromboembolic risk assessment scales are limited. The aim was to evaluate the VTE risk in NENs by assessing selected parameters of coagulation and fibrinolysis and correlating them with individually predicted thromboembolic risk based on various clinical scales or parameters, including survival data. Patients with well-differentiated NENs (n = 99), including pancreatic (n = 63) and small intestinal (n = 36) primary, as well as 47 healthy controls, were enrolled. Blood levels of coagulation parameters, including D-dimer (DD), fibrinogen, platelets, antithrombin III (AT-III), and tissue factor (TF), were assessed. Venous Doppler ultrasound of the lower extremities was performed in all study participants. DD plasma concentration was significantly higher in NEN patients than in the control group (957.59 ± 2021.86 µg/L vs. 400.26 ± 230.55 µg/L, p = 0.007) and positively correlated with chromogranin A (rS = 0.32, p = 0.001). DD and fibrinogen plasma levels were statistically higher in patients with disease progression compared to those with stable disease (2513.7 ± 3624.3 vs. 431.9 ± 244.7 µg/L, p < 0.001; 359.3 mg/mL vs. 305.4 mg/mL, p < 0.001, respectively). None of the VTE risk assessment scales provided a good measure (AUC > 0.7) in ROC analysis. However, higher scores on the Khorana (p = 0.023) and Vienna CATS scale (p < 0.001) were associated with unfavourable survival in NENs. Pancreatic NENs demonstrate increased risk of VTE. The Khorana and Vienna CATS scales best correlated with the NEN patients' outcomes. Routine assessment of DD and fibrinogen may improve risk stratification for VTE in NEN patients; however, extensive multicenter validation is necessary for clinical implementation.

Keywords: venous thromboembolism, coagulation parameters, D-dimer, fibrinogen, platelets, antithrombin III, tissue factor, neuroendocrine neoplasms, neuroendocrine tumours, tumour thrombosis, survival