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332.THROMBOSIS AND ANTICOAGULATION: CLINICAL AND EPIDEMIOLOGICAL

Non-O Blood Group and Pretreatment Risk of Venous Thromboembolism in Patients with Diffuse Large B-Cell Lymphoma

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Introduction: Diffuse large B-cell lymphoma (DLBCL) is the most frequent aggressive non-Hodgkin lymphoma (NHL). It has been extensively documented that the risk of venous thromboembolism (VTE) is augmented in patients with aggressive lymphomas. The timing of VTE occurrence in this group of patients is highly variable and depends on diverse risk factors. Lately, it has been observed that ABO blood group type can have a prognostic impact on both thrombosis development and survival outcomes in patients with cancer. Therefore, the study aimed to examine the ABO blood group as a risk factor for VTE development in patients with DLBCL, to examine the relation between ABO blood groups and the timing of VTE development, and to investigate the association between ABO group type and treatment and survival outcomes.
Methods: A total of 340 patients with DLBCL (newly diagnosed and relapsed) have been included in the study and all of them have been treated at the Lymphoma Center, Clinic for Hematology, University Clinical Center of Serbia. Data regarding VTE events were collected for all the patients included in the study, from the time of diagnosis to 3 months after the last cycle of therapy. ABO blood group has been determined before the treatment initialization. VTE was diagnosed objectively based on clinical examination, laboratory evaluation, and radiographic studies.
Results: The median patients' age was 60 years (range, 19-89 years) and 52.9% were males. Newly diagnosed patients were dominant in the study population (94.4%). The majority of patients had advanced stage (stage III Ann Arbor 22.3% and stage IV 30.7%, respectively) of the disease. The median international prognostic index (IPI) was 2 (range, 0-5). Complete remission (CR) and partial remission (PR) were most commonly recorded (51.7% and 28.8%, respectively). The rate of VTE was 12.6% (43 patients), with the highest frequency of lower and upper extremity deep vein thrombosis (12 patients each). VTE was diagnosed before the initiation of specific hematological treatment in 54.5% of DLBCL patients, whilst 45.5% of DLBCL patients have been diagnosed with VTE following the hematological treatment initiation. The following distribution of ABO blood groups among DLBCL patients was detected: A blood group 39.4%, B blood group 17.6%, AB blood group 9.1%, and O blood group 33.8%. No significant association between VTE development and ABO group type was found (p=0.706) nor between VTE development and time of VTE development (p=0.895). The rate of VTE in DLBCL patients with A blood type was 4.7%, in B 2.1%, in AB 1.8%, and in O 4.1%, respectively (p=0.706). DLBCL patients with the non-O blood group developed VTE significantly more frequently prior to the hematological treatment commencement than after the treatment initiation (6.2% vs. 2.6%, p=0.003). Univariate logistic regression analysis showed that non-O blood type in DLBCL patients is a prognostic factor for VTE development prior to hematological treatment initiation (odds ratio (OR)=8.56, 95% confidence interval (CI): 1.92-38.21, p=0.005). Multivariate logistic regression model demonstrated that non-O blood type is an independent predictor of pretreatment VTE development in DLBCL patients (OR=18.33, 95% CI: 1.51-222.87, p=0.022). Therapy response of DLBCL patients was significantly associated with the ABO blood group (p=0.012) in the way that A and AB blood types were associated with unsatisfactory treatment response (no statistically significant association was found between ABO blood type and DLBCL patients' Ann Arbor stage, mediastinal involvement, bulky disease, extranodal disease, IPI, central nervous system involvement). Univariate regression analysis showed that A blood type is a predictor of unsatisfactory therapy response in patients with DLBCL (OR=1.85, 95% CI: 1.04-3.29, p=0.035). However, in multivariate regression model, this finding lost statistical significance. No significant association was observed regarding ABO blood type, progression-free survival, and overall survival in patients with DLBCL (p=0.398 and p=0.593, respectively).

Conclusion: In DLBCL patients, non-O blood group is an independent predictor of VTE occurrence prior to initiation of a specific hematologic treatment. DLBCL patients with A blood group could be at risk of insufficient treatment response.

Disclosures No relevant conflicts of interest to declare.

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