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VENOUS THROMBOEMBOLISM IN PERIPHERAL BLOOD STEM CELL COLLECTION - A SINGLE CENTER EXPERIENCE

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Introduction. Venous thromboembolism (VTE), particularly catheter-associated thrombosis (CAT), is a known complication of hematopoietic stem cell transplantation. Its link to peripheral blood stem cell (PBSC) collection is less well-defined. However, because central venous devices (CVD) are commonly used during mobilization, CAT remains an anticipated risk.

Aims. To define the incidence and describe clinical features, risk factors, and management of VTE in adults undergoing PBSC collection.

Methods. We retrospectively analyzed consecutive adults (>18 years) who underwent autologous PBSC collection at a single center between January 1, 2011, and December 31, 2025. We reviewed the clinical course from the start of mobilization through 30 days after collection, focusing on antithrombotics, VTE events, and their characteristics. Data collected included patient history, underlying disease, clinical features, and CVD-related factors.

Results. 143 patients (60 female, 83 male; mean age 52.2 (19-72) years) underwent 147 hospitalizations for PBSC collection; 4 required repeated admission due to insufficient harvest. 138 (98.6%) had hematologic malignancies (myeloma: 91, non-Hodgkin lymphoma: 25, Hodgkin lymphoma: 18, acute leukemia: 7); 2 (1.4%) had multiple sclerosis (MS). Priming regimens varied by disease, but cyclophosphamide with GCSF predominated (131 cases, 90.1%). During hospitalization, antithrombotics (preferably low molecular weight heparins (LMWH) adjusted for thrombocytopenia) were given in 100 cases (69.9%). 11 (7.5%) courses of PBSC collection in 11 patients (7.7%; 4 male, 7 female; 29-62 years; myeloma: 5, Hodgkin lymphoma: 3, non-Hodgkin lymphoma: 2, MS: 1) were complicated by a VTE event (pulmonary embolism: 1, lower extremity: 1, upper extremity: 9). Initial LMWH prophylaxis was given to 10 and CVD to 7 patients. 9 events were linked to intravenous devices not used for collection (central: 6; peripheral: 3); 1 to the procedure. All were treated with LMWH and selectively switched to oral antithrombotics; no relevant bleeding or death was seen. Obesity (BMI > 30.0) was markedly more common in patients with VTE than in those without VTE (54.5% vs. 16.2%; $P < 0.05$), while no significant differences were observed in the other factors (age, comorbidities, medication, duration).

Conclusions. CAT is a relatively frequent complication of PBSC collection. Besides CVD use, obesity appears to be a potential risk factor. LMWH offers a safe treatment option.