The Official Journal of the Italian Society for the Study of Hemostasis and Thrombosis
SISET
Società Italiana per lo Studio dell'Emostasi e della Trombosi
Corso Nazionale SISET
Bergamo | 23-25 ottobre 2025

29TH NATIONAL CONFERENCE OF THE ITALIAN SOCIETY FOR THE STUDY OF HEMOSTASIS AND THROMBOSIS, 2025

ABSTRACT N. PO22

EARLY DETECTION AND MANAGEMENT OF PICC-RELATED THROMBOSIS IN ONCOHEMATOLOGIC PATIENTS THROUGH SERIAL ULTRASOUND MONITORING: A PROSPECTIVE OBSERVATIONAL STUDY.

S. Laurenti, M. Schneeberger, G. Rosati, A. Pozzi, M. Padrini, R. Vacchelli, A. Morotti.

University of Turin, AUO San Luigi Gonzaga, Orbassano - TO.

Background and Aims

Central venous catheters (CVCs) are widely used in managing both acute and chronic conditions, particularly for administering chemotherapy, parenteral nutrition, frequent blood sampling in patients with poor venous access, or intensive monitoring. Among CVCs, peripherally inserted central catheters (PICCs) are preferred for medium- to long-term use (4 weeks to 6 months), especially in oncology and oncohematology.

In oncohematologic patients, PICCs increase the risk of thromboembolic events due to both the device and the prothrombotic state associated with the underlying disease. Thrombosis may present with limb edema, erythema, pain, and warmth, or may be incidentally detected due to catheter malfunction or during imaging. Compressive ultrasound (CUS) and color Doppler sonography are non-invasive, low-cost tools that allow early detection of thrombosis, often before clinical signs appear.

This prospective study aims to monitor PICC-related thrombosis in oncohematology patients using serial CUS. Objectives include evaluating the incidence and timing of thrombosis, and identifying correlations with predisposing factors such as platelet and leukocyte counts, coagulation status (PT, aPTT, fibrinogen), type of hematologic disease, presence of axillary or mediastinal lymphadenopathy, and use of antiplatelet or anticoagulant prophylaxis. In cases of asymptomatic thrombosis, the impact of early anticoagulant therapy on PICC preservation will also be assessed.

Methods

This study includes oncohematology patients requiring PICC placement for therapy. Catheters were inserted using ultrasound guidance by trained nurses and verified by chest X-ray. Following insertion, patients underwent serial compressive ultrasound (CUS) to monitor the catheter path up to the subclavian vein, regardless of symptoms or catheter function. When venous patency was uncertain via compression alone, color Doppler was used. Ultrasound evaluations were scheduled between days +3 and +7, then every 14–21 days based on chemotherapy timing. Upon detection of thrombosis—symptomatic or not—patients received therapeutic-dose low molecular weight heparin (LMWH).

Results

To date, 30 patients have been enrolled (20 with lymphoma, 4 with multiple myeloma, 6 with acute leukemia). PICC-related thrombosis was identified in 9 patients (30%), with only one showing clinical symptoms. In all cases, early thrombosis was detected by CUS before clinical manifestation. Timely initiation of LMWH allowed catheter retention in all cases without malfunction or removal. No bleeding events were reported.

Conclusions

Preliminary data indicate that oncohematologic patients with PICCs are at high risk of subclinical thrombosis. Serial CUS enables early detection, allowing prompt anticoagulation and preservation of catheter function. Identifying predictors of thrombosis may help target prophylaxis to high-risk individuals. If confirmed in larger studies, this approach could improve PICC management, reduce complications, and inform future guidelines for thromboprophylaxis and surveillance in this population.

Email: *alessandro.morotti@unito.it*