

THROMBOTIC COMPLICATIONS POST CAR-T THERAPY

## PERICATHETER AND SYSTEMIC THROMBOSIS DURING CAR-T LYMPHOCYTAPHERESIS: INCIDENCE AND CLINICAL CORRELATES

I. Pansini<sup>1,2</sup>, E. Galli<sup>1</sup>, A. Corrente<sup>2</sup>, N. Piccirillo<sup>1,2</sup>, M. Viscovo<sup>1,2</sup>, S. Hohaus<sup>1,2</sup>, P. Chiusolo<sup>1,2</sup>, F. Sorà<sup>1,2</sup>, S. Sica<sup>1,2</sup>

<sup>1</sup>Department of Laboratory and Hematologic Sciences, Fondazione Policlinico Universitario A. Gemelli IRCCS, Rome; <sup>2</sup>Hematology Section, Department of Radiologic and Hematologic Sciences, Università Cattolica del Sacro Cuore, Rome, Italy

**Introduction.** Pericatheter thrombosis (PCT) is a complication of large-bore venous catheters used for cell collection. An incidence of approximately 1.8% has been reported for Mahurkar catheters used in peripheral blood stem cell collection. Despite their widespread use in chimeric antigen receptor T (CAR-T) cell manufacturing, the incidence and determinants of PCT in this setting remain unclear.

**Aim.** This study aims to provide a real-world evaluation of PCT in patients undergoing lymphocytapheresis for CAR-T therapy and to explore relevant clinical and procedural factors.

**Methods.** A retrospective single-centre analysis was conducted on 158 adults evaluated for CAR-T therapy between September 2019 and October 2025. Sixty-two patients who underwent lymphocytapheresis using a Mahurkar catheter were included. Underlying diseases were large B-cell lymphoma (79.0%), mantle cell lymphoma (9.7%) and B-cell acute lymphoblastic leukaemia (11.3%). Two predefined analytical strategies were employed: comparison of patients with pericatheter thrombosis (PCT) versus all other; and comparison of patients with any thrombotic event versus those with no thrombosis. Continuous variables were analysed using Student's t-test, while categorical variables were

analysed using chi-squared or Fisher's exact test, as appropriate.

**Results.** PCT occurred in 5 of 62 patients (8%). Eight additional patients (13%) developed thrombosis at non-catheter sites, for a total of 13 thrombotic events (21%). No variable was significantly associated with PCT although platelet count showed a borderline trend ( $p=0.061$ ). Procedural difficulty was more frequent in PCT cases (66% vs. 18%), but did not reach statistical significance. Sex, LDH, Khorana score, anticoagulation, disease status, catheter site and other laboratory parameters showed no association with PCT. In the overall thrombosis analysis, no variable reached statistical significance, with platelet count again showing a borderline trend ( $p=0.098$ ).

**Conclusions.** PCT during lymphocytapheresis for CAR-T manufacturing was more frequent than previously reported in historical series of Mahurkar catheters used for stem cell collection. No baseline predictor of thrombosis was identified, suggesting a relatively homogeneous thrombotic risk profile. These observations highlight the need for comparative analyses with patients undergoing haematopoietic stem cell apheresis to clarify whether the higher incidence reflects procedural or disease-related factors.