



TROMBOEMBOLISMO VENOSO: ASPETTI CLINICI E
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THROMBOTIC RISK IS NOT UNIFORM ACROSS APHERESIS SETTINGS: INSIGHTS FROM CAR-T LYMPHOCYTAPHERESIS AND AUTOLOGOUS STEM CELL COLLECTION

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Background. Pericatheter thrombosis (PCT) is a recognised complication of large-bore venous catheters used for cell collection. An incidence of approximately 1.8% has been reported for Mahurkar catheters in peripheral blood stem cell collection. Data in patients undergoing lymphocytapheresis for CAR-T therapy are limited. This study evaluates PCT in this setting and compares thrombotic events with those observed in autologous stem cell collection.

Methods. A retrospective single-centre analysis included 62 patients undergoing CAR-T lymphocytapheresis with a Mahurkar catheter (September 2019–October 2025). During the same period, 127 patients underwent autologous stem cell collection; 62 required a Mahurkar catheter, and a subset of 21 with comparable diseases was analysed. Within the CAR-T cohort, analyses compared (1) PCT vs non-PCT and (2) any thrombosis vs no thrombosis. A third analysis compared CAR-T and autologous cohorts. Continuous variables were analysed with Student's t-test and categorical variables with chi-square or Fisher's exact test.

Results. In the CAR-T cohort, PCT occurred in 5/62 patients (8%) and 13/62 (21%) developed overall thrombosis. 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%), without statistical significance. In the autologous cohort, no PCT was observed (0/21), while 2 patients (9.5%) developed thrombosis at non-catheter sites. Compared to the autologous cohort, CAR-T patients showed lower platelet count ($p < 0.0001$), haemoglobin ($p = 0.0276$), and differences in white blood cell count ($p = 0.045$). Disease status also differed significantly, with all autologous patients in partial or complete response ($p < 0.001$).

Conclusions. PCT was more frequent in CAR-T lymphocytapheresis than in autologous stem cell collection. This difference appears to reflect underlying patient characteristics rather than procedural factors. CAR-T patients represent a distinct population with more advanced disease and altered haematological profiles. Thrombotic risk should not be considered uniform across apheresis settings, supporting tailored risk assessment and preventive strategies.