Autologous peripheral blood hematopoietic progenitor cell collection (A-HPCC) in children typically requires placement of a central venous catheter (CVC) for venous access. There is scant published data regarding the performance and safety of femoral CVCs in pediatric A-HPCC” Cooling et al (2017).

Abstract:

INTRODUCTION: Autologous peripheral blood hematopoietic progenitor cell collection (A-HPCC) in children typically requires placement of a central venous catheter (CVC) for venous access. There is scant published data regarding the performance and safety of femoral CVCs in pediatric A-HPCC.

METHODS: Seven-year, retrospective study of A-HPCC in pediatric patients collected between 2009 and January 2017. Inclusion criteria were an age ≥ 21 years and A-HPCC using a femoral CVC for venous access. Femoral CVC performance was examined by CD34 collection rate, inlet rate, collection efficiency (MNC-FE, CD34-FE), bleeding, flow-related adverse events (AE), CVC removal, and product sterility testing. Statistical analysis and graphing were performed with commercial software.

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RESULTS: A total of 75/119 (63%) pediatric patients (median age 3 years) met study criteria. Only 16% of children required a CVC for ≥ 3 days. The CD34 collect rate and CD34-FE was stable over time whereas MNC-FE decreased after day 4 in 80% of patients. CD34-FE and MNC-FE showed inter- and intra-patient variability over time and appeared sensitive to plerixafor administration. Femoral CVC showed fewer flow-related AE compared to thoracic CVC, especially in pediatric patients (6.7% vs. 37%, P = 0.0005; OR = 0.12 (95%CI: 0.03-0.45). CVC removal was uneventful in 73/75 (97%) patients with hemostasis achieved after 20-30 min of pressure. In a 10-year period, there were no instances of product contamination associated with femoral CVC colonization.

CONCLUSION: Femoral CVC are safe and effective for A-HPCC in young pediatric patients. Femoral CVC performance was maintained over several days with few flow-related alarms when compared to thoracic CVCs.

Reference:


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