These data indicate the reliable feasibility and efficacy of mobilized apheresis via an indwelling Hickman catheter" Doberschuetz et al (2-19).

Abstract:

BACKGROUND: Autologous stem cell transplantation remains an integral treatment tool for certain childhood malignancies. In children, a central venous catheter is typically necessary to provide adequate flow rates for preparative apheresis. In this study, the feasibility and efficiency of collecting CD34+ cells via an indwelling Hickman catheter, preimplanted for chemotherapy, instead of placing an additional temporary central venous catheter was evaluated.

STUDY DESIGN AND METHODS: Forty-eight pediatric leukaphereses for autologous hematopoietic stem cell transplantation using Spectra Optia MNC, Version 3.0 were reviewed. We compared preimplanted Hickman catheters with a temporary Shaldon catheter, inserted for apheresis. Apheresis was considered successful if a dose of 2 × 106 CD34+ peripheral blood stem cells/kg BW was achieved.

RESULTS: In 43 (89.6%) of the 48 patients, a Hickman catheter was used for leukapheresis. Only 5 patients (10.4%) received a temporary Shaldon catheter. In both groups, apheresis was performed without apparent adverse reactions. The dose of collected CD34+ peripheral blood stem cells was 12.7 × 106 (range, 2.3-70.7 × 106) cells/kg BW in the Hickman group

and 16.2 × 106 (range, 3.8-48.4 × 106) cells/kg BW in the Shaldon group, showing no statistically significant difference (p = 0.58). In both groups, the primary endpoint of a minimal CD34+ cell concentration of 2 × 106 cells/kg BW was achieved at a maximum of two leukapheresis sessions. Apheresis efficacy was further confirmed by the collection efficiency of 40.2% in the Hickman group and 27.8% in the Shaldon group (p = 0.32).

CONCLUSION: These data indicate the reliable feasibility and efficacy of mobilized apheresis via an indwelling Hickman catheter. In light of this, the routine insertion of a dialysis catheter for the purpose of leukapheresis should be critically reconsidered.

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Reference:
Doberschuetz, N., Soerensen, J., Bonig, H., Willasch, A., Rettinger, E., Pfirrmann, V., Salzmann-Manrique, E., Schäfer, R., Klingebiel, T., Bader, P. and Jarisch, A. (2019) Mobilized peripheral blood stem cell apheresis via Hickman catheter in pediatric patients. Transfusion. January 4th. .

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