Assessment of Hetastarch and PrepaCyte-CB® in Transplanted Cord Blood Units

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Abstract
An analysis of outcomes data from the transplantation of cord blood units, red cell and plasma reduced using either hydroxyethyl starch (HES) (1996-2009) or PrepaCyte® (PC) (2009-2016), was performed to summarize the St. Louis Cord Blood Bank’s (SLCBB) twenty years’ experience. The data analyzed was derived from both the Center for International Blood and Marrow Transplant Research (CIBMTR) and the SLCBB and represents products manufactured from 1996 to 2016.

Patient demographics include an age range of 19 days to 73 years with various malignant and non-malignant diseases. Data was reviewed and categorized by processing method and single vs dual cord transplants.

Background
All units manufactured by the SLCBB are red cell and plasma reduced. The first product was released for transplant on February 14, 1997 and in the twenty years that followed, 2,772 products have been distributed. Of these, 2,229 were manufactured with HES and 543 with PC-CB.
- In the HES group, 2,172 units were known to be infused and data is available on 1,660 patients – 1,255 undergoing a single cord and 955 a dual cord transplant.
- In the PC-CB group, 518 units were known to be infused and data is available on 380 patients – 155 undergoing a single cord and 370 a dual cord transplant.

Overall, 89% of patients infused with a HES unit achieved engraftment in an average of 25 days (median 21). After infusion of a single HES unit, 89% of patients achieved engraftment in 23 days (median 20). When combined with another product (dual cord transplant), 88% of patients receiving a HES product achieved engraftment in 22 days (median 20).

Discussion
Engraftment results from transplants performed with SLCBB products, especially those processed with PC-CB, compare favorably with accounts in the published literature which report the overall incidence of graft failure following cord blood transplant as 10-20% with a median range of time to ANC of 25-42 days. We celebrate the SLCBB’s 20 years in the industry and the patients, donors and colleagues with whom we have served.