Infusion technique of hematopoietic progenitor cells and related adverse events


Abstract:

Background: The use of hematopoietic progenitor cell (HPC) transplant has risen over the past two decades. A variety of adverse events (AEs) of varying severity have been noted during HPC infusions. These AEs have been associated with several factors such as the amount of dimethyl sulfoxide and white blood cells in the HPC product. We performed a single-institution retrospective analysis to determine the effect of two different HPC infusion techniques, manual push with syringes versus infusion from bags with the aid of gravity, on the occurrence of infusion-related AEs.

Study Design and Methods: Infusions between December 2008 and November 2010 involving peripheral blood HPCs were reviewed. Pertinent clinical and HPC product–related information was recorded. Data were analyzed to determine the incidence of infusion-related AEs and its association with patient and product-related variables.

Results: We found 461 AEs in 645 patients during the study period. A total of 325 (50%) experienced at least one AE. Flushing was the most common type of AE followed by nausea and hypertension. The use of syringe infusion was more commonly associated with AEs (odds ratio, 1.82 [95% confidence interval, 1.32-2.50]; p = 0.002). Other independent risk factors were cryopreserved products and the amount of polymorphonuclear leukocytes in the product.

Conclusion: To our knowledge, this is the first study examining the effect of two different infusion techniques on infusion-related AEs. Our findings suggest that the use of bags for infusion protected the patients from AEs.

Other intravenous and vascular access resources that may be of interest (External links – IVTEAM has no responsibility for content).

Guide for intravenous chemotherapy and associated vascular access devices from Macmillan.
CancerUK IV chemotherapy information.