Reduced-Intensity Conditioning Allogeneic Stem Cell Transplantation in Pediatric Patients and Subsequent Supportive Care

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Purpose/Objectives: To determine if children undergoing reduced-intensity conditioning allogeneic hematopoietic stem cell transplantation (RIC-AlloHSCT) have lower incidence of acute toxicities and, subsequently, require less supportive care than is required with myeloablative conditioning (MAC)-AlloHSCT. An additional purpose is to examine later outcomes by comparing 100-day transplantation-related mortality (TRM).

Method: Retrospective chart and electronic medical records review.

Setting: A pediatric care center in the northeastern United States.


Methods: Charts were retrospectively reviewed. The comparison between groups was done by t test (continuous variables) and chi-square test (categorical variables). The logistic regressions, Kaplan-Meier product-limit estimator, log rank test, and Cox proportional hazards model were used.

Main Research Variables: Days requiring total parenteral nutrition (TPN), patient-controlled analgesia (PCA), incidence of mucositis, days with fevers, number of infections, transfers to pediatric intensive care unit (PICU), blood product infusions, and 100-day TRM, all for 30 days post-transplantation.

Findings: When comparing pediatric patients undergoing RIC-AlloHSCT (n = 43) versus MAC-AlloHSCT (n = 43) in the first 30 days post-transplantation, a statistically significant decreased incidence was noted for mucositis, infections, transfers to PICU, days on TPN and PCA, and days with fever, as well as 100-day TRM.

Conclusions: For pediatric patients, RIC-AlloHSCT is associated with significantly lower acute post-transplantation toxicities and TRM than MAC-AlloHSCT.

Implications for Nursing: For nurses to correctly educate their patients and family members, and to aid nurses in anticipating patient’s needs, an understanding of the potential different acute toxicities and supportive care between pediatric patients undergoing RIC- versus MAC-AlloHSCT is vital.