Enteral Nutrition Optimization Program for Children Undergoing Blood & Marrow Transplantation: A Quality Improvement Project

Abstract

Background and Purpose

Malnutrition in children and young adults undergoing blood and marrow transplantation (BMT) is associated with increased morbidity and mortality. Improvement via optimization of enteral nutrition can potentially lead to reduced infection rates, graft-versus-host-disease (GVHD) rates, length of stay (LOS), and healthcare costs, however standard of care guidelines are lacking. This Quality Improvement (QI) project aimed to evaluate the impact of a nutritional support program optimizing enteral nutrition support in children undergoing BMT.

Methods

A pre-post intervention design and post-intervention survey were utilized. Patients aged 0-18 who were admitted during the 16-week implementation period followed the Enteral Nutrition Optimization Program from pre-BMT through discharge. Weight loss, malnutrition, GVHD, time to engraftment, rate of infections, and LOS were compared between the intervention group and a paired pre-intervention group. A separate sample of clinical providers completed a post-intervention survey to evaluate feasibility and acceptance of the intervention.

Results

Six patients receiving the intervention, with 12 total patients evaluated. There were no statistical differences between groups on measured evaluations. The provider sample of 45 participants showed overall feasibility and acceptance of the intervention.

Conclusions

Feasibility and acceptance of the intervention was high, resulting in increased use of nasogastric and gastrostomy tubes. Although there was no noted clinical significance, interpretation is limited due to small sample size.

Implications

A novel nutritional support program was implemented which was widely supported by clinical providers and resulted in a culture shift towards enteral nutrition optimization. More studies are needed to determine clinical impacts.

Keywords: BMT, oncology, pediatrics, nutrition, malnutrition