



This has traditionally been provided via parenteral nutrition (PN), but pediatric evidence is increasingly advocating enteral nutrition (EN) as a preferential alternative” Evans et al (2019).

Abstract:

BACKGROUND: Hematopoietic stem cell transplantation (HSCT) involves the administration of chemotherapy followed by the infusion of donor stem cells. After treatment, children can consequently experience nausea, vomiting, diarrhea, anorexia and mucositis, which negatively impact oral intake leading to rapid deterioration in nutritional status and risk of malnutrition. Nutrition support therefore becomes necessary to circumvent these adverse effects. This has traditionally been provided via parenteral nutrition (PN), but pediatric evidence is increasingly advocating enteral nutrition (EN) as a preferential alternative. The objective of this review is to determine the efficacy of any forms of EN vs. PN provided during admission to children \leq 18 years undergoing HSCT. Primary outcomes considered efficacy in relation to various nutritional parameters, and secondary outcomes included a range of post-transplantation parameters.

METHODS: Data sources included English and non-English articles from the start date of MEDLINE, EMBASE, AMED, CINAHL and Cochrane Controlled Trials register, up to July 2018. Key journals were also hand searched, reference lists scanned, clinical experts contacted and grey literature searched using EThOS and Open Grey. Randomized and observational studies comparing any forms of EN vs. PN in children \leq 18 years undergoing HSCT investigating

nutritional or post-transplantation outcomes were eligible. Data were extracted from included studies using a custom extraction form that had previously been piloted. As included studies were observational, risk of bias was assessed using ROBINS-I.

RESULTS: As only a small number of heterogeneous studies reporting a wide range of differently defined outcomes were included, meta-analyses were not performed and data were presented in narrative form. Conflicting results in favor of either method of nutrition support, or no difference between methods, were seen for duration of interventions, nutritional intakes, biochemical and anthropometric changes, mortality, infections, length of admission and neutrophil engraftment. EN may provide favorable benefits over PN regarding acute graft-versus-host-disease (aGvHD) and platelet engraftment.

DISCUSSION: A paucity of studies were found investigating the question posed by this review. Included studies were clinically heterogeneous regarding populations, interventions and outcomes, at moderate to serious risk of bias due to the absence of randomization, confounding parameters, statistical control, retrospective designs and participant selection. Some studies were more than 15 years old.

CONCLUSIONS: Despite the limited number and poor quality of identified studies, results support the growing body of pediatric evidence that EN is feasible during HSCT. Similar differences regarding many nutritional and post-transplantation outcomes were seen in both forms of nutrition support, but EN could provide benefits above PN including reduced incidence of aGvHD and faster platelet engraftment.

You may also be interested in...

Transition from parenteral to enteral nutrition in neonates
Quality outcomes of paediatric home parenteral nutrition
Patient outcomes on long-term home parenteral nutrition

Reference:

Evans, J.C., Hirani, D.S.P. and Needle, D.J.J. (2019) Nutritional and post-transplantation outcomes of enteral versus parenteral nutrition in pediatric hematopoietic stem cell transplantation: a systematic review of randomized and non-randomized studies. *Biology of Blood and Marrow Transplantation*. February 28th. .

doi: 10.1016/j.bbmt.2019.02.023.

