DANA-FARBER Boston Children's

CANCER AND BLOOD DISORDERS CENTER

Reintroducing Oral Nutrition in Pediatric Patients with Gastrointestinal Graft Versus Host Disease

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Introduction

- Graft versus host disease (GVHD) is a complication that can occur after an allogeneic stem cell transplant. Donor T cells recognize the recipient (host) as foreign and mount an immune response. GVHD of the gastrointestinal (GI) tract causes severe diarrhea (more than 2 L/day), vomiting, cramping /severe abdominal pain, anorexia and bleeding. GVHD of the GI tract frequently effects quality of life.
- Initial management of GI GVHD typically requires what is known as gut rest. Patients eliminate oral intake (NPO) and are administrated total parental nutrition (TPN). As symptoms improve, oral nutrition is slowly introduced as tolerated.
- Oral/enteral nutrition is important to:
- reduce bacteria from being translocated into the bloodstream
- stimulate gall bladder function reducing cholestasis
- help the gut heal.
- There are currently no established guidelines for the reintroduction of oral nutrition in GVHD of the GI tract at Boston Children's Hospital (BCH). The reintroduction of oral intake is frequently directed by physician and family preference.

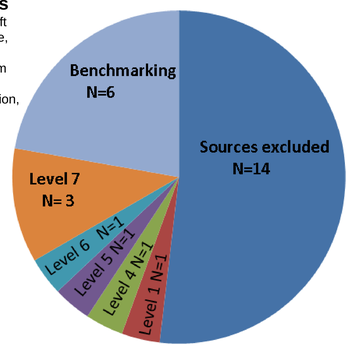
Clinical Practice Question

- In pediatric hematopoietic stem cell transplant patients with gastrointestinal GVHD (P) is there a best practice to reintroduce oral nutrition (I) as compared to current practice of provider and family preference (C) to decrease the recurrence of GI symptoms (O).

Search Strategy

- Electronic search of data bases CINAHL, Medline, EBSCO
- Direct email to contacts at other institutions nationwide

Search Terms
gastrointestinal graft versus host disease, diet management, Hematopoietic Stem Cell Transplant (HSCT), oral nutrition, children



Inclusion Criteria
- gastrointestinal graft versus host disease
- diet management
- written in English
- oral nutrition
- children

Exclusion Criteria
- Chronic graft versus host disease
- enteral nutrition
- not written in English

Results

Key Findings From Literature Review

Level of Evidence	Source	Findings
VI	Koc, N., et al., 2016 Retrospective chart review	• Performed a stepwise upgrade diet • Concluded early initiated TPN and stepwise diet management provides rapid improvement in digestive tract and may accelerate recovery period in children with grades III-IV acute GI GVHD • Limited information/small pediatric population/no comparison group
I	van der Meij, B.S. et al., 2013 Systematic review	• Literature review of studies from any date up to march 2012, no age restrictions • Summary of literature included nutritional status, intestinal failure, nutritional support, micronutrients, immunonutrition, probiotics • Only one lit review re nutritional support
VII	Ezzone, S., 2012 Text book	• Hematopoietic Stem Cell Transplantation: A Manual For Nursing Practice, Second Edition • Outlines a 5 phase dietary regimen
VI	Akbulut, G., 2011 Single center practice review	• Listed guidelines from one hospital (MD Anderson) • 4 phase progressive diet • More a review of the diet itself and not a comparison. • Did not provide data to show this diet improves diarrhea
VI	Scott, N., 2008 Single center chart review	• Developed their guidelines following a review of dietary guidelines being used at MD Anderson, Texas, and Seattle And recommendations on National Cancer Institute website. • Initial dietary restriction followed by slow step reintroduction to diet low in fat, fiber, lactose, acid and irritants. • Advancement of diet is dependent on GI symptoms and need To ensure adequate nutrition. Given structure as to when and what food is to be introduced. • No significant adverse events, including exacerbation of GI symptoms and in maintaining nutritional status. • Creates goals for patients and an awareness of what they can and cannot eat
IV	Imataki,O., et al., 2006 Cohort study	• Half patients received EN dieting program/half NPO with TPN • Clinical and laboratory parameters were compared (diarrhea, weight, total serum protein and albumin • Program diet included 6 steps, advanced based on symptoms • No severe adverse events associated with nutrition interventions including infections • No wide variation in each patient in diarrhea volume/frequency • No statistical difference in body weight between the two groups but BMI was better in the EN diet group
VI	Gaureau, J. et al.,1981 Single center practice review	•Goals-adequate energy support, provide healing for intestinal lumen with nutrients to allow normal mucosal maturation, minimize diarrhea and satisfy individual dietary preferences. •5 phases. Recovery period is severity dependent. •No data to support •No comparisons •This diet continues to be referenced in more current literature

Benchmarking

Respondent	Current Practice
April Gollihugh MS, RDN, CSP, LDN St Jude Children's Research Hospital	Uses a 3 phase diet. Start with step one bland diet, advance as tolerated to a step two bland diet. Continue advancement as symptoms improve. Families are given a list of recommended foods for each stage.
Debra Southworth MSN, RN, CPON, BMTCN Children's Hospital Colorado	No standardized approach. When symptoms improve advance to clears and advance as tolerated to low bacteria diet
Paula Macris MS, RD, CSO, FAND Seattle Children's Hospital	Start with gi 1 diet and advance as tolerated.
Nurse from Brigham and Women adult hematopoietic stem cell transplant unit	5 phase diet advancement. Advancement is based on symptoms. Patient is provided with a list of food recommendations and to introduce new food one at a time to assess tolerance.
Nurse from UCSF Medical Center, adult hematopoietic stem cell transplant unit	No standardized approach, patient preference. Offer suggestions.
Nurse from Seattle Cancer Care Alliance, hematopoietic stem cell transplant unit	Use gradual diet advancement including low residue, low lactose, low fiber and low fat diet.

Discussion

- No randomized control trials have been performed to assess diet advancement strategies in pediatric patients with gastrointestinal GVHD.
- A small body of literature supports a step by step approach to reintroducing oral nutrition in acute GVHD in pediatric stem cell transplant patients but evidence is weak due to study design and population size
- The studies indicated that step by step diet was successful as there were no adverse events such as exacerbation of GI symptoms and that nutritional status was maintained but did not show the evidence to support this
- Similar studies in adults lacked data to support the diet
- There was agreement that the step by step diet did give parents and staff guidance, consistency, realistic goals and improved awareness of what patients can eat

Conclusion

- The current available evidence does not support a practice change.
- A well designed multicenter research study is warranted to determine best practice for the reintroduction of oral nutrition in pediatric HSCT patients with gastrointestinal GVHD.

References

- Available upon request

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