Critical Care Nutrition
Best Practice Guidelines for Early Enteral Nutrition
University of Cincinnati Medical Center
NSICU
Revised: 9/2020

Statement of Problem

The gastrointestinal (GI) tract has been labeled as one of our first immune response barriers. Over the last 30 years, animal models and clinical trials have led to a better understanding of the intestinal dysfunction and alterations of gut epithelium during critical illness. (Lyons, 2016). Epithelial apoptosis, intestinal hyperpermeability and perturbations in the intestinal mucus layer have been associated with critical illness. The functional changes of the epithelial gut layer cause the overgrowth of pathobionts favoring intestinal translocation with gram-negative bacteria and trigger dysbiosis through epithelial ischemia and pro-inflammatory cytokines (Lacob, 2019). Since catabolic responses to stress and injury occur during the acute phase of illness, optimizing nutrition may play a role in improved outcomes. Early enteral nutrition has been found to help maintain gut integrity, promote health of the immune system, ulcer prophylaxis and decrease systemic inflammation (Merchan, 2017). In previous RCT's provision of early EN was associated with a significant reduction in mortality and infectious morbidity (McClave, 2016).

Purpose

The purpose of this best practice guideline is to give best recommendations on benefits and risks of enteral nutrition therapy in the critically ill in the Neuroscience Intensive care Unit. The Society of Critical Care Medicine (SCCM) and American Society of Parental and Enteral Nutrition (A.S.P.E.N.) clinical practice guidelines were selected to address organizational needs and produce a high-quality best practice guideline.

Disclaimer

These guidelines should be used to assist with management in the intensive care unit when making decision about enteral nutritional therapy. Clinical judgment should be used at discretion of the provider.

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Guidelines for the Provision and Assessment of Nutrition Support Therapy in the Adult Critically Ill Patient: Society of Critical Care Medicine (SCCM) and American Society for Parenteral and Enteral Nutrition (A.S.P.E.N.)

B1: *We recommend that nutrition support therapy in the form of early enteral nutrition (EN) be initiated within 24-48 hours in the critically ill patient who is unable to maintain volitional intake*

B2*: We suggest the use of EN over parental nutrition in critically ill patient who require nutrition support therapy*

B4b: Based on expert consensus we suggest that, in most critically ill patients, it is acceptable to initiate EN in the stomach

B5: *Based on expert consensus, we suggest that in the setting of hemodynamic compromise or instability, EN should be withheld until the patient is fully resuscitated and/or stable. Initiation/reinitiating of EN may be considered with caution in patients undergoing withdrawal of vasopressor support*

C2: *We recommend that either trophic or full nutrition by EN is appropriate for patients with acute respiratory distress syndrome (ARDS/acute lung injury (ALI) and those expected to have a duration of mechanical ventilation >= 72 hours, as these two strategies of feeding have similar patient outcomes over the first week of hospitalization*

D1: *Based on expert consensus, we suggest that patients should be monitored daily for tolerance of EN. We suggest that inappropriate cessation of EN should be avoided. We suggest that ordering a feeding status of nil (NPO) for the patient surrounding the time of diagnostic tests or procedures should be minimized to limit propagation of ileus and to prevent inadequate nutrient delivery*

D3a: We recommend that EN feeding protocols be designed and implemented to increase the overall percentage of goal calories provided

E. *Based on expert consensus, we suggest using a standard polymeric formula when initiation EN in the ICU setting.*

G3. *We recommend that, in patients at either low or high nutrition risk, use of supplemental PN be considered after 7 to 10 days if unable to meet >60% of energy and protein requirements by the enteral route alone. Initiating supplemental PN prior to this period in the critically ill patients on some EN does not improve outcomes and may be detrimental to the patient.*

Critical Care Best Nutrition Practice Guidelines
A Summary for Adult Critically Ill patients
Unit Specific Practices

Assessment and Evaluation

All patients admitted to the NSICU require a nutrition nursing screening within 24 hours and a provider nutrition plan within 48 hours

Consult nutrition services as needed for recommendations including enteral nutrition feeding, and poor oral intake

Administration

Oral intake is always the preferred method of feeding if appropriate

Patients who are critically ill and cannot resume an oral diet within 24hours should be evaluated for the initiation of enteral nutrition (EN) as soon as possible. If no contraindications exist (see below), EN should be started within 48 hours of admissions

Contraindications and Unit Specific Recommendations

Contraindications for EN include:

A) Map < 65 with hemodynamics instability requiring vasopressor therapy
B) Need for NPO for anesthesia
C) Need for emergent airway or NIMV anticipated within 2 hours
D) **Acute abdominal pathology (e.g. ilus, obstruction, mesenteric ischemia, abdominal trauma)**

Recommendations for specific planned procedures:

- **Extubation: EN should be stopped 30 minutes prior. Evaluate 2 hours after extubation to determine appropriateness of resuming EN**
- **Bronchoscopy: EN should be stopped 30 minutes prior to the procedure and resumed immediately afterwards if no contraindication exist**
- **Neuro-Interventional Radiology: EN shoulde held 6 hrs prior to the planned procedure and resumed immediately upon return if no contraindication exists**
- **Post-PEG: Per ACS preference, once TF is ordered to resume on the calendar day following the procedure, restart TF at half the goal rate for 4 hours, then resume at full goal rate**

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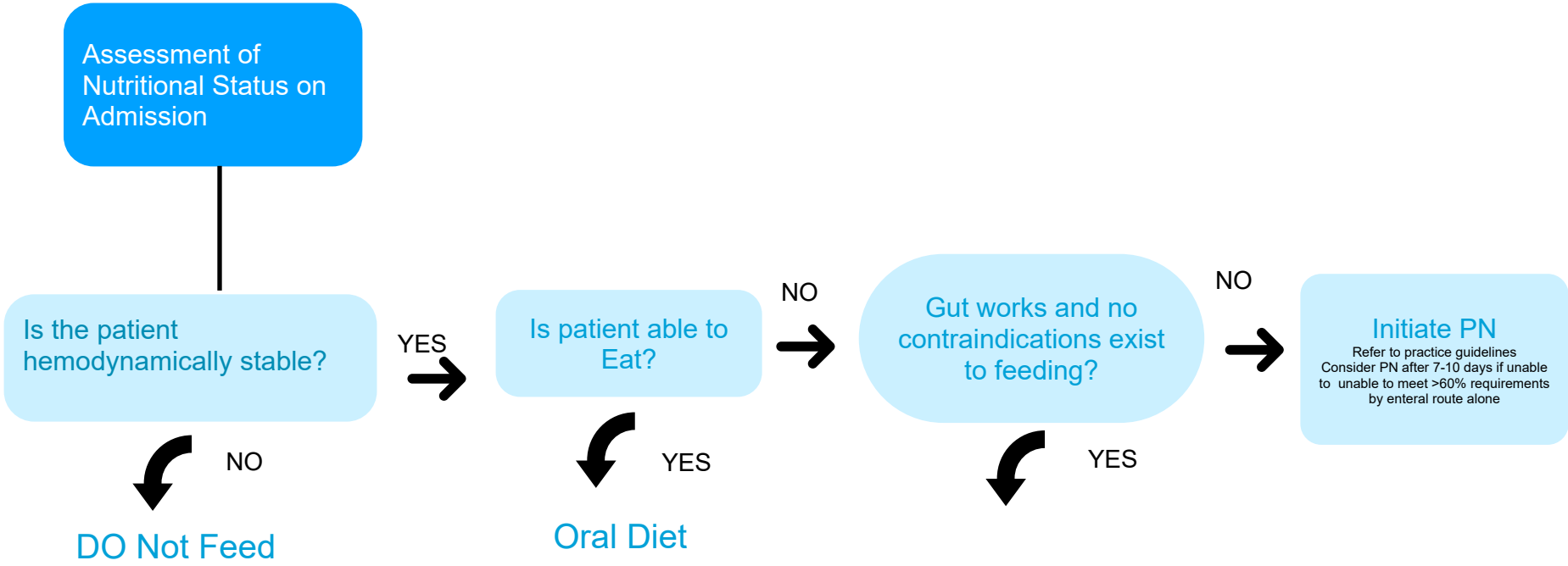

Contraindications to feeding

1. Hemodynamics instability
2. Abdominal Pathology (obstruction, bowel ischemia, ileus, intractable vomiting, severe GI bleed, inability to access GI tract)
3. Planned surgery or procedure requiring NPO

McClave SA, Taylor BE, Martindale RG, Warren MM, Johnson DR, Braunschweig C, McCarthy MS, Davanos E, Rice TW, Cresci GA, Gervasio JM, Sacks GS, Roberts PR, Compher C; Society of Critical Care Medicine.; American Society for Parenteral and Enteral NutritionGuidelines for the Provision and Assessment of Nutrition Support Therapy in the Adult Critically Ill Patient: Society of Critical Care Medicine (SCCM) and American Society for Parenteral and Enteral Nutrition (A.S.P.E.N.). JPEN J Parenter Enteral Nutr. 2016 Feb;40(2):159-211. doi: 10.1177/0148607115621863. Erratum in: JPEN J Parenter Enteral Nutr. 2016 Nov;40(8):1200. PubMed PMID: 26773077.

Initiate EN

- ✓ EN is the preferred route of feeding over PN
- ✓ Start EN 24-48 hrs, advancing to goal
- ✓ Standard formula Fibersource HN @ 60 ml/hr. on most patients is appropriate with formal dietician evaluation and recommendation within 24 hours

References

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