

NUTRITION SUPPORT IN THE SICU

Nutrition support is an essential part of therapy for critically ill trauma patients. The goals of nutrition support for a SICU patient are to prevent acute protein malnutrition/preserve LBM, maintain a competent immune system, promote/preserve gut barrier function, maintain or reduce metabolic response to stress and aid in wound healing which all ultimately aids in patient outcomes.

Nutrition support should be considered within 24 hours once the patient is hemodynamically stable. The following are nutrition guidelines based on injury. Adjustments may be necessary for renal failure or liver failure.

Surgical / Trauma Patients

25 cal / kg actual BW or adjusted BW if >125% IBW

1.5 – 2 g protein / kg IBW or actual BW if under weight

Multivitamin w/ minerals or a prenatal vitamin if iron deficient or anemic

Generally start with Pivot (note Pivot is contraindicated if patient is on pressors due to the arginine content)

Isolated Head Trauma

25 cal / kg actual BW or adjusted BW if >125% IBW

1.5 – 2.2 g protein / kg IBW or actual BW if under weight

Metabolic cart study with in 48hrs and once on full feeds for 24 hours

Multivitamin w/ minerals or a prenatal vitamin if iron deficient or anemic

Generally start with Pivot

May need additional zinc, iron, copper, and selenium due to increased urinary losses

ARDS / Sepsis / SIRS

25 cal / kg actual BW or adjusted BW if > 125% IBW

1.5 – 2 g protein / kg IBW or actual BW if under weight

Multivitamin (without additional iron)

Generally start Oxepa and use for 7-14 days or once off vent, whichever happens first. May need prosource.

- Contraindications:
 - the use of arginine (present in Pivot) in septic pts, it is the chief precursor of nitric oxide which is already increased during sepsis and has potential adverse effects including vasodilation & cardiac dysfunction. ;
 - iron supplementation

Spinal Cord Injury

Nutrition consult ordered PTD 1

25 cal / kg actual BW or adjusted BW if >125% IBW

2 – 2.2 g protein / kg IBW or actual body weight if under weight

Metabolic cart study PTD 3 or when on full feeds for 24 hrs and repeat as the patient's condition changes

15 grams of soluble fiber/day – Metamucil® (psyllium)

Vitamin C – 500 mg BID po or via feeding tube

Multivitamin w/ minerals or a prenatal vitamin in iron deficient or anemic

Bowel regimen: dulcolax daily; colace BID; senokot-s BID, Metamucil BID, milk of magnesia if no BM within 48 hrs

Generally start with Pivot

All acutely injured patients, except those that are pregnant or have a serum creatinine >2.5 ml/dL, should receive, on admission, high dose antioxidants for 7 days as follows:

Hint: ENTER “Antioxidants” in Merlin for order bundle.

- Vitamin C 1000 mg Q 8 hrs intravenously
- Vitamin E 1000 IU Q 8 hrs enterally
- Selenium 200 micrograms daily intravenously

Once enteral access is established, vitamin C can be changed to enterally.

Obese Population

In the critically ill obese patient, permissive underfeeding or hypocaloric feeding is recommended.

BMI >30 target energy requirements are 11 – 14 kcal/kg actual body weight/day or 22 – 25 kcal/kg IBW/day

Protein needs: BMI 30 – 40: ~2 g/kg IBW/day

BMI >40: > or = to 2.5g/kg IBW/day

Initiating Tube Feedings for SICU Service

Lower osmotic formulas: start at 30ml/hr and advance by 20ml Q4 hours to goal

Hyperosmotic formulas: start at 10 ml/hr and advance by 10ml Q4 hours to goal

Lower Osmotic Formulas:

Jevity 1.2

Osmolite 1.2

Higher Osmotic Formulas:

Ensure Plus

Glucerna 1.2

Gluceran 1.5

Nepro

Nutri-Hep

Oxepa

Pulmocare

Pivot

Suplena

TwoCal HN

Vital 1.5

Residuals should be checked Q4 hours and re-fed back to the patient.

Hold TF when residual are > 500

Start Erythromycin – 400mg suspension q 8 hrs

Wait 2 hours and recheck residuals

- If <500 ml, restart TF at previous rate.
- If >500 ml continue to hold and monitor

After a patient returns from a procedure, tube feedings should be started back at the rate the patient was receiving prior to the procedure.

References

1. Kozar RA, Moore F, et al, "*Postinjury Tolerance is Reliably Achieved by a Standardized Protocol.*" J Surg Res 2002
2. A.S.P.E.N. Nutrition Support Practice Manual 2nd Edition, copyright 2005
3. A.S.P.E.N. Nutrition Support Core Curriculum: A Case-Based Approach – The Adult Patient. 2007
4. Nguyen, Nam, et al. "*Prokinetic therapy for feed intolerance in critical illness: One drug or two?*" Critical Care Medicine 2007 Vol. 35, No. 11
5. ADA Pocket Guide to Enteral Nutrition. American Dietetic Association 2006.
6. www.nutritioncare.org
7. Consortium for Spinal Cord Medicine, www.spinalcordcenter.com
8. Spinal Cord Injury Evidenced-Based Nutrition Practice Guidelines, ADA 2009
9. Martindale, RG, et al, "*Guidelines for the provision and assessment of nutrition support therapy in the adult critically ill patient: Society of Critical Care Medicine and American Society for Parenteral and Enteral Nutrition: Executive Summary.* Crit Care Med 2009 Vol. 37, No. 5
10. Collier, B et, al, "Impact of High-Dose Antioxidants on Outcomes in Acutely Injured Patients. JPEN Vol. 32, No. 4, July/August 2008