Approach to Acquired Malnutrition in the Hospitalized Patient with Respiratory and Critical Illness

Elena Kret-Sudjian, MD, PhD[a,*], Nicholas Kenyon, MD, MAS[b], Mithu Molla, MD, MBA[a]

KEYWORDS

• Malnutrition • Oral nutritional supplement • COPD • Asthma • Critically ill • Tube feeding • Enteral nutrition • Parenteral nutrition

HOSPITAL MEDICINE CHECKLIST

1. Malnutrition is prevalent in the hospitalized patient with respiratory and critical illnesses.
2. Malnutrition may occur in patients with high body mass index, because it is common for obese patients to be undernourished in the setting of disease or surgery.
3. Rather than relying on albumin, prealbumin, or BMI, diagnosis of malnutrition is based on a set of clinical characteristics including insufficient energy intake, unintentional weight loss, and loss of muscle mass and subcutaneous fat.
4. Malnutrition assessment and treatment should be incorporated into the management of patients with COPD.
5. Tube feeding should be given to all ICU patients, if not contraindicated, who are not expected to take a full oral diet within the first 24 to 48 hours after admission.
6. Tube feeding can begin with a trial of intragastric feeding in most patients. Postpyloric feeding, unless practiced routinely, is reserved for patients with a high risk of aspiration.
7. Parenteral nutrition is not recommended unless there are contraindications to enteral feeding (eg, bowel ischemia, gastrointestinal bleeding, bowel obstruction or perforation).

CONTINUED

[a] Section of Hospital Medicine, Department of Internal Medicine, UC Davis School of Medicine, UC Davis Medical Center, PSSB, 4150 V Street, Suite 3400, Sacramento, CA 95817, USA; [b] Department of Internal Medicine, UC Davis School of Medicine, UC Davis Medical Center, PSSB, 4150 V Street, Suite 3400, Sacramento, CA 95817, USA
* Corresponding author.
E-mail address: ekret@ucdavis.edu

Hosp Med Clin 6 (2017) 579–592
http://dx.doi.org/10.1016/j.ehmc.2017.05.010

CONTINUED

8. For the well-nourished patient, there is no benefit of starting parenteral nutrition within first week of ICU admission. For the malnourished patient or those patients at high nutrition risk, when indicated, it should be initiated as soon as possible following admission to the ICU.
9. The most notable parenteral nutrition–related complications today are hyperglycemia and catheter-related infections.
10. Glutamine- and arginine-enriched enteral or parenteral nutrition is not recommended for routine use in critically ill medical patients.

INTRODUCTION

What does every hospitalist need to know about malnutrition?

In clinical practice, malnutrition is usually viewed as undernutrition.

Currently, malnutrition is defined as any nutrition imbalance, in which a combination of varying degrees of overnutrition or undernutrition have led to a change in body composition and diminished function.[1] In clinical practice, malnutrition is usually viewed as undernutrition. It may also occur in patients with high body mass index (BMI), because it is common for obese patients to be undernourished in the setting of disease or surgery.[2] Hospitalized patients with pulmonary diseases typically suffer from malnutrition because of illness-induced poor appetite, limited ability to chew and swallow as a result of respiratory symptoms and use of devices for oxygen delivery, and nil per os status for diagnostic and therapeutic procedures. In addition, they may have increased energy, protein, and essential micronutrient requirements because of systemic inflammatory response, infection, and increased catabolism.[3]

What is the prevalence and significance of malnutrition in patients with chronic obstructive lung disease?

Low body weight and BMI are independent risk factors of mortality in patients with chronic obstructive pulmonary disease (COPD).

Loss of lean body mass is common in COPD especially in patients with emphysema. It is associated with reduction in the mass of the diaphragm and respiratory muscles, resulting in decline in muscle strength and endurance.[4] Patients with low body weight have greater air trapping, lower diffusing capacity, and less exercise tolerance than do patients with normal weight. Wasting of muscles not only detrimentally affects respiratory function, including a reduced ability to clear secretions, but also promotes fatigue and reduces exercise tolerance. It has not been possible to establish the exact causality between malnutrition and COPD. However, malnutrition is likely the consequence of greater disease severity, leading to a compromised nutritional intake (loss of body weight) and reduced physical activity (muscle atrophy).[5]