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Parenteral nutrition

The role of clinical nutrition in surgical care

Drawbacks of poor nutritional status

Poor nutritional status during the perioperative period is associated with adverse clinical and economic consequences:

- Increased risk of postoperative complications (figure 1)[2,3,6-10]
- Impaired wound healing[3,4,10]
- Prolonged hospitalisation[2,5,6,8-13]
- More frequent readmissions[2,10]
- Reduced quality of life[2,10]
- Increased healthcare costs[2,13]

Nutrition status and infectious complications

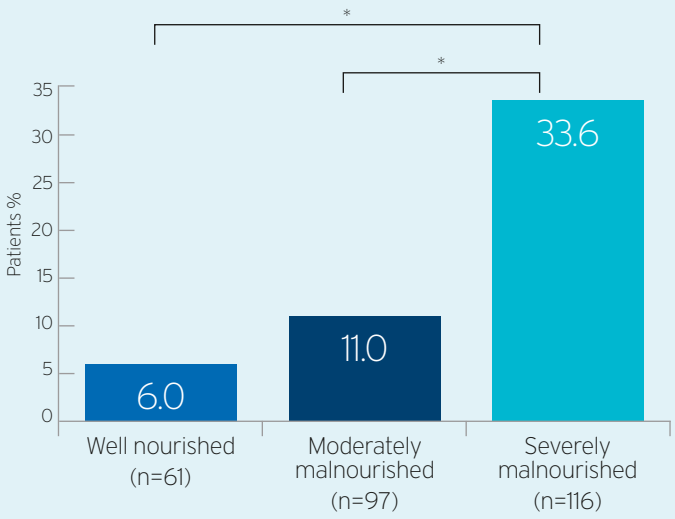

Figure 1. Rate of infectious complications following abdominal surgery according to nutrition status.[#] Figure adapted from [7].

*p<0.05; [#]Nutrition status evaluated according to the Subjective Global Assessment (SGA)

In patients who have undergone surgery, adequate nutrition is necessary to ensure optimal wound healing, maintain proper immune function, and facilitate postoperative recovery.[1-4]

- In the absence of sufficient nutrition intake, muscle tissue becomes the primary source of amino acids for protein synthesis, leading to a loss of lean body mass.[4]
- With increasing loss of lean body mass, the supply of protein for wound repair in the body is reduced and wound healing impaired (figure 2).[4]

Poor nutrition supply may lead to a loss of lean body mass (LBM) and impair proper wound healing

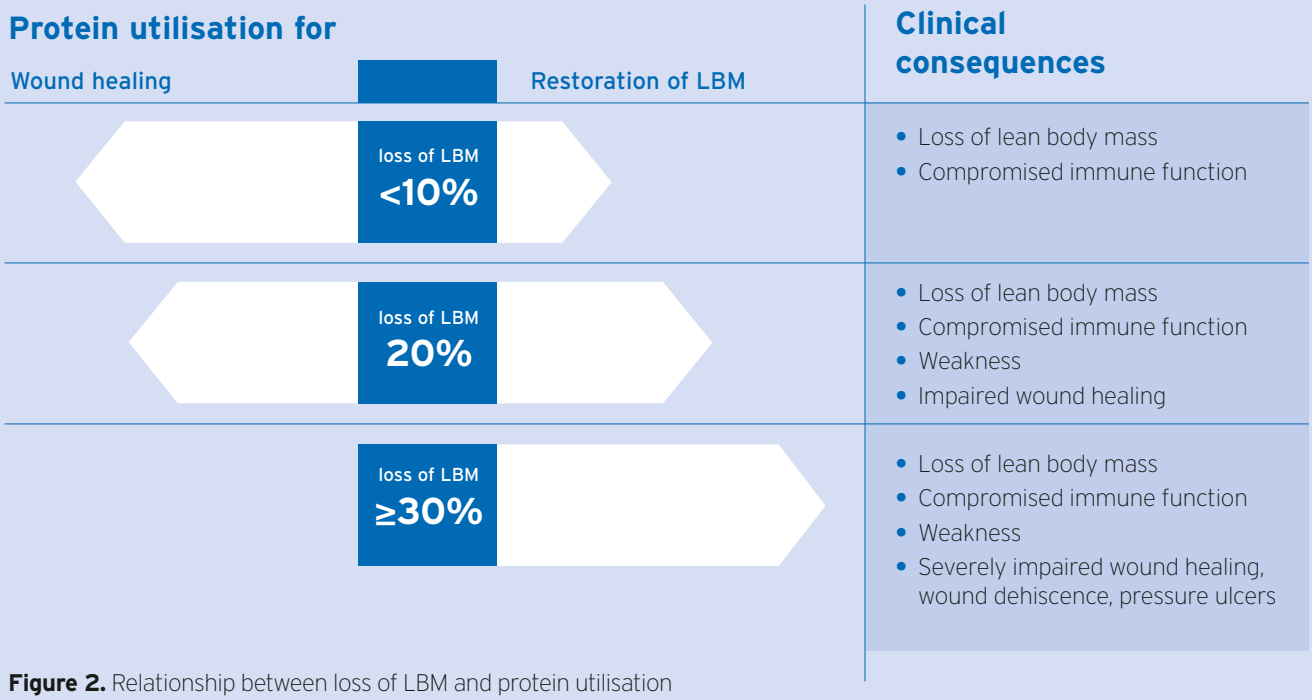

Figure 2. Relationship between loss of LBM and protein utilisation for wound healing vs. restoration of LBM. Figure adapted from [4].

Integrating nutrition into the overall perioperative patient management is key[1]

Timely administration of parenteral nutrition (PN) to surgical patients with or at risk of malnutrition reduces protein and caloric deficits and promotes optimal outcomes.[14-24]

Energy and protein recommendations* - ESPEN 2017 Guideline: Clinical Nutrition in Surgery[1]

Energy delivery (Grade B)[25]

- 25 kcal/kg ideal body weight/day represent an estimate of daily energy requirements
- Under conditions of severe stress, requirements may increase to 30 kcal/kg ideal body weight/day

Protein delivery (Grade B)[25]

- 1.5 g/kg ideal body weight/day

* The ESPEN 2017 Guideline: Clinical Nutrition in Surgery[1] confirms the energy and protein recommendations stated in the ESPEN guidelines PN: Surgery from 2009.[25]

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