

Commentary

Patients with IBD and obesity have often inferior responses to biological therapy with biologicals that is related to altered pharmacokinetics and obesity-mediated chronic low-grade inflammation [33]. Therefore, nutritional assessment is one of the key points of the management of patients with IBD. Overweight and obesity in IBD is recognized as a risk factor associated with increased drug clearance, leading to shorter half-lives and low drug concentrations [34]. The mechanistic explanation of this situation might be based on impaired absorption of subcutaneously administered active compounds, rapid proteolysis, and a 'tumor necrosis factor (TNF)-sink' phenomenon with inflammatory status caused by obesity. Although not all studies are equivocal, trends toward closer monitoring of body weight, body composition, and weight loss as adjunctive therapy for more successful provision of biologicals are advocated [33].

The usual nutritional screening and assessment techniques are recommended. For details see commentaries to recommendations 1–3.

Weight loss therapy should consist of fat but not muscle reduction and should follow carefully the general recommendations for obesity therapy.

6) If screening revealed malnutrition or a risk for malnutrition, a more detailed nutritional assessment, e.g. according to the GLIM* criteria, should be performed that includes the diagnosis of sarcopenia.

(R4, grade GPP, strong consensus 97%)

*Global Leadership Initiative on Malnutrition

Commentary

The GLIM criteria require for the diagnosis of malnutrition both at least one phenotypic and one etiologic criterion [35]. Phenotypic criteria are defined as weight loss (>5% within the past six months or > 10% beyond this time), a low BMI (<20 kg/m² for Caucasians, <22 kg/m² for people over 70 years, 1.5 kg/m² less for Asians), and a reduced muscle mass (ideally assessed by DXA, alternatively by BIA). The etiologic criteria comprise a reduced food intake (plate diagrams, or 7-day-food diary) or malassimilation (≤50% of energy requirements for more than one week or any reduction for more than two weeks or any chronic gastrointestinal condition that harms food assimilation or absorption), or inflammation caused by an acute disease/injury or a chronic disease [35].

In addition to the GLIM criteria, the nutritional assessment can comprise additional anthropometry (waist circumference, forearm or calf circumference, triceps skinfold), functional tests (handgrip strength), and perhaps laboratory tests (albumin, fasting blood glucose, triglycerides).

Sarcopenia is a particular issue because it is common in patients with overweight and obesity and may predict the need for surgery [27]. Since decreased muscle mass has been reported in 60% of adults with CD compared with healthy subjects [24,36], sarcopenic obesity is another feature of changing phenotype of patients with IBD that might impact treatment response and should be assessed accordingly.

7) Patients with IBD should be checked for micronutrient deficiencies regularly (at the time of diagnosis and thereafter at least once a year or if clinical signs of deficiencies occur).

(R6, grade GPP, strong consensus 100%)

Commentary

Patients with IBD are vulnerable to micronutrient deficits due to the result of increased gastrointestinal losses of nutrients, reduced oral intake or increased nutrient requirements. At times when

nutrition support is offered then multivitamin and micronutrient supplements should also be offered to ensure an appropriately balanced nutritional intake.

The most common micronutrient deficiencies in IBD due to inadequate dietary intake are iron, calcium, magnesium, vitamin B9, vitamin D and vitamin K [37], see also ESPEN Micronutrient guideline [38].

When interpreting blood results of micronutrients and trace elements it is important to consider that many serum values, or markers of status, are positive or negative acute phase reactants. Serum levels rise or fall, as part of the inflammatory response, for example, ferritin, and copper increase but folate, selenium, and zinc decrease in inflammation [39].

A dedicated diet counseling or a daily multivitamin supplement may correct most deficiencies but is no guarantee of adequacy, even over the long term; iron, zinc, and vitamin D are likely to require specific replacement regimens [40]. Poor compliance, particularly in adolescents, is common with multivitamin supplements and patient education about the rationale behind their use is important [41].

Recent research has focused on vitamin D; it and its receptor may have some immunomodulatory properties, which further highlights the need for specific attention to micronutrient status in patients with IBD.

8) Bone mineral density should be assessed in IBD patients at the time of diagnosis and in patients at risk (chronic active disease, corticosteroid treatment, or previous osteopenia) every one to two years.

(R8, grade 0, strong consensus 100%)

Commentary

Bone mineral density should be assessed in patients with IBD using DXA, which allows direct and non-invasive measurement of bone mass, fat-free mass, and fat mass. Disturbances in body composition in patients with IBD can be accurately measured using the aforementioned gold-standard method [42]. Reduced bone mineral density described as osteopenia or osteoporosis is one of the most common complications of IBD, encountered in 20%–50% of patients [42]. Low bone mineral density described as osteopenia or osteoporosis is one of the most common complications that correlates with increased fracture risk in patients with IBD [43]. The high prevalence of obesity, IBD, and hypovitaminosis D are parallel and overlapping phenomena. Low levels of serum vitamin D are characteristics of both obesity and IBD, as well as sarcopenic obesity [44]. The etiopathogenesis of vitamin D deficiency is multifactorial in patients with IBD and develops as a result of malabsorption, inflammation, low dietary intake, low sun exposure, and corticosteroid therapy [42,45]. In patients with obesity, vitamin D is being sequestered in fat tissue, therefore, low serum levels of 25-OH vitamin D are often measured [45]. Furthermore, obesity is characterized by pro-inflammatory pathogenic mechanisms and dysbiosis that are also linked to bone alterations in the IBD population [46].

Appropriate screening and prophylaxis of bone alterations in patients with IBD and obesity are therefore even more important in comparison with patients with IBD, but without obesity, and should be done routinely.

9) Screening for nutritional status and - if indicated - nutritional assessment shall be performed in patients with IBD and obesity before intestinal surgery to identify the need for perioperative nutritional therapy.

(R9, grade GPP, strong consensus 100%)