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Global medical societies define reduced muscle mass as an independent criterion for diagnosis of malnutrition

Validated BIA from seca conforms to consensus on diagnostic methods

Hamburg, 14 December 2018 – The international societies ASPEN, ESPEN, FELANPE and PENSA established the Global Leadership Initiative in Malnutrition (GLIM) to build a worldwide consensus for diagnostic criteria for malnutrition. The consensus report published in September 2018 elevates reduced muscle mass to one of the decisive, independent evaluation criteria used in the diagnosis of malnutrition. seca welcomes this step, which the company sees as validation of its advocacy of improved diagnosis and treatment of malnutrition.

Previous attempts at optimizing the diagnosis of malnutrition were based primarily on the criteria "non-volitional weight loss" and "low BMI ≤ 20". These criteria, however, have proven to be inadequate in practice, says Michael Johannes Maisch, M.D. and Chief Medical Advisor at seca: "When only weight loss and BMI are taken into account, no consideration is given to edema, which is also a frequent symptom of malnutrition. Water retention distorts the weight and can even effect a weight gain and a higher BMI although malnutrition is present. Consequently, many malnourished patients fall through the cracks."

seca software has included Fat Mass Index analysis since 2017

In the consensus report the GLIM defined five criteria for the diagnosis and severity of malnutrition. After a patient has been identified at risk of malnutrition, at least one phenotypic criterion (non-volitional weight loss, low BMI, reduced muscle mass) and one of the etiologic criteria (reduced food intake/assimilation and inflammation/disease burden) must be fulfilled for a diagnosis of malnutrition.

A leading manufacturer of medical body composition analysis devices, seca deals with the subjects of weight and body composition every day and knows how important muscle mass is for the diagnosis of malnutrition. At the beginning of 2017 seca incorporated the Fat-Free Mass Index (FFMI) in the analytical software of the medical Body Composition Analyzer (mBCA) and implemented the cut-offs from the first ESPEN consensus paper[1]. These parameters make it even easier for the user to detect malnutrition by means of Bioelectrical Impedance Analysis (BIA). "We welcome the revaluation of the FFMI as an independent criterion," says Dr. Maisch.

ESPEN General Secretary confirms BIA as a valid method of capturing FFMI

Prof. Dr. Matthias Pirlich, ESPEN General Secretary, sees the consideration of body composition as a positive development. "The new GLIM criteria for the diagnosis of malnutrition also include the detection of a prognostically significant change in body composition," says Pirlich. "The GLIM consensus takes into account several studies from the past 10 years which have shown that the loss of muscle mass concurrent with a chronic or severe disease is an independent risk factor for a poor clinical course. The Bioelectrical Impedance Analysis is an economical and valid method of measuring the loss of muscle mass or fat-free mass in everyday clinical work."

Type of validation methods of BIA devices determine the quality

The GLIM consensus names the methods CT, MRI, DXA and BIA as the methods to be used to measure muscle mass. Their practical application, however, is critical. Given the complexity, costs or radiation exposure (CT), MRI and CT are unsuitable for clinical routine use. "DXA too should be looked at critically

[1] FFMI <17 (male) <15 kg/m^2 (female); Cederholm et al., Diagnostic criteria for malnutrition – An ESPEN Consensus Statement. Clinical Nutrition, 34(3), pp.335-340.

when it comes to measuring muscle mass," says Dr. Maisch. "DXA significantly overestimates Skeletal Muscle Mass.[2] In a diagnosis of malnutrition with reduced muscle mass, this is naturally counterproductive." Even BIA is not simply BIA. The devices whose measurements of muscle mass have been validated against DXA share the bias of the reference device. You can expect to capture reduced muscle mass accurately only if the BIA device has been validated with whole-body MRI. Users benefit from the simple, fast and radiation-free methods of the BIA when the device's accuracy is assured.“

More information about seca at www.seca.com and the seca science center.

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[2] Bosy-Westphal et al., Quantification of whole-body and segmental skeletal muscle mass using phase-sensitive 8-electrode medical bioelectrical impedance devices. European Journal of Clinical Nutrition (2017) 71, 1061–1067