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BMI: The Weakness of a Milestone in Obesity Management and Treatment

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It is well known that obesity is a multi factorial and chronic disease. Pathogenesis of obesity includes genetic, behavioral, psychologic, nutritional, environmental and neuro-immuno- endocrinologic factors.

Moreover recent studies showed new interesting and surprising correlations among obesity, inflammation and gut microbiota [1]. Another important issue to consider in obese patients is the socio-economic factors that strictly relates to the nutritional habits and to the access to healthcare resources.

Obesity related comorbidities are multiple and relate to cardiovascular, metabolic, osteoarticular, genitourinary and gastrointestinal diseases.

Nevertheless current eligibility to bariatric surgery, as originally reported by NIH guidelines from 1991, has been largely based on BMI cut-points and limited to patients with more severe obesity levels (BMI > 40 kg/m^2 or BMI 35-40 kg/m^2 with obesity-related comorbidities). However, obese patients belonging to the same BMI class may have very different levels of adiposity, health, risk and quality of life [2].

In a recent position statement from the International Federation for the Surgery of Obesity and Metabolic Disorders (IFSO) about bariatric surgery in class I obesity, it has been suggested to go beyond the use of BMI to differentiate bariatric population and to define obesity-related cardio metabolic risk [3]. Anthropometric data as BMI and waist circumference are useful in population studies. They are easily comparable measures in clinical and epidemiological studies but do not sensitively and comprehensively represent a given patient's phenotype. A clinical decision about the more appropriate treatment for a given obese patient must consider not only BMI levels but also the more comprehensive aspects of the patient including age, clinical features, global health, quality of life, daily activity, working activity, economic compliance to the treatment and to the follow-up. Each of these aspects may modify the decision-making process and shift the choice from a bariatric procedure to another treatment option.

Age is an independent predictor factor of weight loss, conditioning energy harvesting from the diet and metabolism [4]. As a consequence age may condition the type of bariatric surgery to perform. Weight loss after bariatric surgery is greater in youngs than in old patients. On the other hand old patients have more nutritional risks and higher complication rate after surgery. So should we propose to an old patient the most effective procedure or the most safe and simple operation? Is it reasonable to propose to a young patient a restrictive procedure firstly and then a gastric bypass in case of failure or directly perform a gastric bypass as primary procedure?

If we consider another issue, economic difficulties may for example hinders the intake of multivitaminic and proteic supplements thus compromising the nutritional status after bariatric surgery.

A novel obesity stage system has recently been proposed by Sharma and Kushner as an answer to this controversial issue [5]. The Edmonton obesity stage system includes evaluation of psychopathology, functional limitation and impairment of well-being. The proposed staging system provides both a more accurate measure of obesity-related co- morbidities and predictor of mortality.

Multidisciplinary and comprehensive patient's selection plays a key-role in bariatric surgery outcome. Revisional surgery is a currently increasing and challenging issue in bariatric surgery. Indications for surgical reoperations vary depending on both the procedure type and the reason for intervention. It is reasonable to ask how many cases of reoperative bariatric surgery are due to inadequate patient selection during the preoperative work up before the primary procedure. Similarly, predictive factors of failure after bariatric surgery or dietary treatment should be sought. There still is much to do in order to evaluate the influence of non dietary factors, especially genetic ones, investigate the effects of gene polymorphism on weight loss, and identify the exact composition of the gut microbiota and the specific mechanisms that regulate the host-microbiotal crosstalk.

Some studies investigated the effect of mutations [6] or polymorphism [7] of obesity-related genes on the outcome of bariatric surgery without significant results. Other studies on rat models and humans analysed modifications induced by bariatric surgery on gut microbiota [8].

In conclusion current management of severe obesity must go beyond measurement of BMI and move on towards phenotyping obese patients, selecting the best available treatment and predicting weight loss.

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