

OBESITY MANAGEMENT AS CARDIOVASCULAR RISK IN METABOLIC SYNDROME

RODICA MARIA ONOFREI¹

University Transilvania Brasov

Keywords: Obesity, Metabolic syndrome, Management

Abstract: Increased prevalence and aggressiveness of cardio-metabolic diseases justifies the growing interest worldwide in tracking and monitoring patients at risk of developing metabolic syndrome. Increased frequency of obesity and overweight with involvement and the succeeding metabolic status of weight gain more than 20% of ideal weight contributes to the diagnosis of metabolic syndrome. Obesity may be a consequence of metabolic disorders or repercussions of improper lifestyle but produces or is triggered by metabolic disorders and cardiovascular risk and represents a risk factor. The management of obesity as a risk factor associated with metabolic syndrome is the prerequisite of good medical diagnosis and treatment conduct.

Cuvinte cheie: obezitate, sindrom metabolic, management

Rezumat: Prevalența crescută și agresivitatea afecțiunilor cardiometabolice justifică interesul crescând pe plan mondial în depistarea și supravegherea pacienților cu risc de a dezvolta sindrom metabolic. Frecvența crescută a supragreutății și obezității cu implicațiile metabolice ce succed starea de creștere în greutate cu mai mult de 20% din greutatea ideală contribuie la diagnosticarea sindromului metabolic. Obezitatea poate fi consecința tulburărilor metabolice sau repercusiunea unui stil de viață necorespunzător dar care produce sau este declanșată de tulburări metabolice și reprezintă un factor de risc cardiovascular. Managementul obezității ca factor de risc asociat sindromului metabolic reprezintă premisa unei bune conduite medicale de diagnosticare și tratament al acestuia.

SCIENTIFIC ARTICLE OF BIBLIOGRAPHIC SYNTHESIS

The new millennium is facing, in medical terms, with complex metabolic disease highly aggressive with a population at high prevalence, with high morbidity and mortality, mainly cardiovascular and the impact on all areas of socio-economics.

Obesity is a multifactor consequence, characterized by an increase in body fat content from 15-20% to 20-30% in men and women, which leads to weight increase over 20% of ideal weight, in the same time affecting aesthetic, psychosocial and biological matter.

Obesity can be assessed using weight, waist, body and waist thigh circumference. An increase in body mass index greater than 27 kg/m² and waist / hip higher than 0.9 in men and 0.8 in women increase cardiovascular risk (1).

In practice, obesity is the most common situation of insulin resistance and central obesity and abdominal called Android may be a clinical marker of metabolic syndrome.

Obesity is a nutritional-metabolic disorder characterized by weight loss (2). It is measured by body mass index (BMI), excluding the weight increase due to water retention or increased muscle mass:

Table no. 1. Obesity classification

Classification	IMC (kg/m ²)
Normal range	18.5-24.9
Overweight	25.0-29.9
Obesity I	30.0-34.9
Obesity II	35.0-39.9
Obesity III	>40

The old methodology for assessing the degree of

obesity (Broca's formula, Lorentz) and reporting to ideal weight, is not having the same predictive value as the newly adopted methodology, which is more important for cardiovascular risk assessment is the distribution of body fat.

Anthropometric assessment of obesity is achieved by:

- body mass index (BMI)
- abdominal index (IAF)
- waist measurement

Defining the degree of obesity will be made by using BMI and waist values indicate the distribution of body fat, presence of insulin resistance and cardiovascular risk.

Increased waist suggests increased cardiovascular risk, although BMI remains constant (1).

Table no. 2. RRS graduation based on classes and gender

SEX	Low risk (waist circumference)	Likely risk (waist circumference)	Certain risk (waist circumference)
Men	<=94 cm	95-101 cm	>=102 cm
Women	<=80 cm	81-87 cm	>=88 cm

Risk factors and causative of obesity, genetic and won (alcohol, smoking, sedentary lifestyle, hormonal) production by complex disturbances of behavior, food intake regulation and energy expenditure (3,4).

Contribute to the development of obesity and metabolic lipid disturbance, increased lipogenesis and reduced lipolysis.

Metabolic complications of obesity are complex:

- Carbohydrate metabolism

Insulin resistance in obesity is due to a combination of

¹Corresponding Author: Rodica Maria Onofrei, 28 Al. Ioan Cuza street, 2nd Floor, Marzescu Policlinic, Brasov, Romania; e-mail: rodica.onofrei@gmail.com; tel +40-0 722945202

Article received on 16.06.2010 and accepted for publication on 28.06.2010
ACTA MEDICA TRANSILVANICA September 2010; 2(3)276-277

CLINICAL ASPECTS

defects at the receptor and before receptor action of insulin.

Not all obese are insulin resistant, but only half of those with a BMI greater than 28kg/m². Instead 40% of insulin resistance obese become diabetic after 40 years of development.

- Lipid metabolism

Obesity has a pronounced effect on VLDL metabolism. HyperTG is common and the degree of obesity correlated with TG level (5.6).

- Uric acid metabolism

There is a strong link between body weight and uric acid levels. in obesity.

- Cardiovascular complication

Almost invariably accompanies obesity hypertension. The frequency of hypertension among obesity is 50-90%. Cause and effect between the relationship of obesity and hypertension is proven to lower high blood pressure with weight loss (5).

Atherosclerosis, obesity appears to favor the development of ATS with approximately 10 years earlier due to an accumulation of vascular risk factors (dyslipidemia, sedentary lifestyle, hypertension).

Heart failure is favored by the extra effort required of the heart, hemodynamic changes induced pulmonary circulation and systemic circulation, fatty infiltration of the pericardium and myocardium.

Therapeutic targets in obesity management concerns: weight loss, new weight maintenance, prevention of obesity and lifestyle improvement is always having to review and control the complications of obesity associated conditions adapted to the risk class of patients (7).

Table no. 3. Adaptation of weight objectives to CVR risk classes

Risk Class	Weight Objective
Low	Weight maintenance 5% eventually fall
Medium	10% weight loss Maintenance of new weight Control of all risk factors and comorbidity presence
High	10-20% weight loss; BMI > 40kg/m ² Maintenance of new weight Control of all risk factors and comorbidity presence

Therapeutic Program:

- energy-restricted diet, reducing calorie intake is very important in view that each kilogram of fat is 7000 kcal. Featured were two types of diets:
 - deficient diet 500 kcal / day compared to the previous diet. It seeks to effect weight loss of 0.5 to 1 kg per week, 5 to 10 pounds in three months (approximately 5-10% of initial weight). This type of diet recommended in patients with overweight IMC fall in group (BMI between 25 to 29.9 k/m²).
 - deficient diet 1000 kcal / day compared with previous feeding. It seeks to effect weight loss of 1-2 pounds per week, approximately 20% of initial weight. This type of diet has been recommended for patients rated as obese BMI group I / II (BMI between 33-37 kg/m²).

Regarding recommended diets were made following remarks:

- Meals should be split up throughout the day 5-6/zi number;
- Reduce consumption of unsaturated fats, sweets and salt concentrates on how possible.
- Exercise - the main modality of power consumption, is recommended both to prevent obesity, as well as its

therapeutic method. Important in weight loss relationship is that low intensity to be less physical effort in weight loss, and will double in maintaining the new weight.

- Pharmacological therapy is associated with caloric regime, lipids, under the blood pressure control and heart rate in respect of any contraindications.

Optimizer also includes lifestyle and the recommendation to avoid alcohol and smoking cessation.

Ensure proper management of cardiovascular risk factors associated with metabolic syndrome requires effective communication and physician - patient aimed at optimizing the patient's lifestyle, therapeutic monitoring and ensuring psychological support.

REFERENCES

1. Bussetto L., Digito M., Enzi G. Obesita visceral ed iperinsulinemia: aspeti clinici e meccanismi biochimici. *Giornale italiano di diabetologia* 1994; 14: 315-321
2. Dumitrescu C., Perciu R. Diabetul zaharat – Ghid practice. Ed. Vestala, București 1998.
3. Assmann G., Schulte H., Cullen P. New and classical risk factors – The Munster Heart Study. *European Journal of Medical Research*. 1997; 2: 237-242
4. Guy – Grand B. Obesite(s). *Medicine/Science*. 1998; 14: 843-844
5. Hâncu N., Căpâlneanu R. Factorii de risc cardiovasculari. Ed. DiabMan, Cluj-Napoca, 1995
6. Hâncu N. Obezitatea și dislipidemiile în practica medicală. Info Medica, Cluj-Napoca, 1998
7. Lean M. Clinical handbook for weight management. Ed. Martin Dunitz Ltd, 1998