Mechanisms, and pathophysiology of obesity: upgrading a complex scenario

Aims & Scope:

In the last two decades, obesity-induced mortality has been significantly increased, and for this reason a rising attention is paid to this pathological condition that is able to cause or exacerbate several health problems such as coronary heart disease, cancer and diabetes. Obesity depends on the interaction between genetic, environmental and psychosocial factors that finally result in an imbalance between energy intake and the energy consumption that determines an excessive accumulation of fat in adipose tissue. The increase of body fat is responsible for cardiovascular alterations and changes in plasma metabolic parameters that can lead to insulin resistance and diabetes. It is well established that the maintenance of energy expenditure is linked to active hypothalamic neural mechanisms controlling adaptive stimuli such as food intake and several food related peptides are able to coordinate both the cardiac and gastrointestinal function displaying a possible link between obesity, alimentary disorders, and common severe cardiovascular diseases. Very recently, a bidirectional interaction between the immune system and obesity-induced changes in metabolism, in adipose tissue, and liver has been proposed. Moreover, obesity is considered a chronic hypoxic state associated with oxidative stress, inflammation and endothelial dysfunction as well as with a decreased nitric oxide (NO) bioavailability. Nutrition plays a crucial part in counteracting both obesity and its related complications, since a strict interconnection between feeding habits and health care has been stated. So, it is not surprising that an increasing attention is given to nutritional strategies and to natural remedies, especially to overcome the
side effects and high costs of the conventional anti-obesogenic drugs therapies. However, understanding the epigenetic and the genetic factors as well as the metabolic pathways underlying this complex pathological condition will be the future gain of research in this field.

The present Special Issue aims to update the knowledge on the complex pathophysiology of obesity and the related nutritional and metabolic aspects.

**Topics to be covered (main bioactive component):**

1. Obesity and cardiovascular diseases
2. Cardioprotection in obesity
3. Epigenetics and cardiovascular risk in obese surgical patient: the role of dietary supplementation with nutraceuticals
4. Targeting the endothelial calcium toolkit to reverse endothelial dysfunction in obesity-associated hypertension
5. Role of Neuroinflammation in Obesity
6. Potential impact of dietary agents in the prevention or treatment of plasma cell dyscrasias
7. The nutritional composition and anti-obesity effect of natural compounds

**Keywords:**

Obesity, cardiovascular diseases, inflammation, intracellular signaling, nutrition, neuroendocrine control, dyscrasias

**Schedule:** April 2018