

Obesity and Metabolic Disorders. Healthy Lifestyle for Kidney Health

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Medicine has long ceased to be an isolated and strictly separated profession, so that an individually applicable model of integrated different medical professions is now one of the main characteristics of modern medicine. Therefore, continuous knowledge refreshment and life-long education should be adopted as a necessary segment of the development of medicine, along with promotion of clinical practice based on empirical knowledge.

Obesity is an omnipresent and topical problem all over the world; therefore, it is no surprise that obesity and kidney disease were the main topics of the World Kidney Day 2017. Obesity is a condition of excessive accumulation of adipose tissue in the body with a number of adverse health sequels. In 2014, the World Health Organization reported alarming data pointing to the epidemic extent of obesity with more than 600 million adult persons facing this problem. In Europe, the prevalence of obesity is estimated to 4% - 28% in male and 6.2% - 36.5 % in female individuals; the prevalence of obesity increases with age (25% of persons aged 45 - 72 are overweight) and shows male predominance (20.7% of men and 16.8% of women are obese). What is most disturbing is the high prevalence of obesity in young age groups, children in particular (8.8%). Therefore, correct and timely recognition of the problem and ensuring appropriate treatment in childhood and adolescence is of utmost importance, along with follow up and necessary modifications in adulthood. The interaction of gene factors and environmental factors from the youngest age leads to predisposition to kidney disease, which can be related to the growing prevalence of prehypertension associated with obesity.

The impairments related to obesity are characterized by the mechanism of insulin resistance that is pronounced in diabetes mellitus type 2, aging and lipodystrophy, and by ectopic fat accumulation that contributes to organ damage in metabolic diseases. This ectopic fat storage in the kidney is accompanied by increased oxidative stress, which result in premature aging. The effect of increased oxidative stress on adipose tissue occurs due to the reduced level of glutathione, which inhibits pre-adipocyte differentiation.

Obesity is a much more complex issue because obesity is a state of chronic inflammatory response. The leptin and adiponectin imbalance is the main factor associated with insulin resistance, cardiovascular disease, and glomerular injury. Leptin receptor is found predominantly in renal medulla and belongs to the family of class I cytokine receptors associated with inflammatory response in obesity. Visceral adipose tissue produces large amounts of interleukin-6, supporting the comprehensive theory on obesity as a state of systemic inflammatory response. Many metabolic components of obesity cause dysfunction of the kidney and other organs due to accelerated aging process.

The topical issue of obesity management in 2017 is best illustrated by the importance attached to this problem worldwide, as obesity is a disease of the 21st century.

One should not neglect the fact that obesity is a preventable risk factor for development of cardiovascular disease, diabetes mellitus, dyslipidemia, arterial hypertension and chronic kidney diseases. Professional debate and analysis of this issue, its causes, sequels and optimal therapies should remain in the focus of our professional interest and efforts. Promoting healthy lifestyle and habits, and continuing education for prevention and raising public awareness of the issue must be the key priorities in our daily work with patients. A comprehensive and interdisciplinary approach to the prevention of renal and cardiovascular diseases is necessary from childhood to adult age.

Bibliography

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