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## Adult overweight and cardiovascular system: risk or disease?

*Yetişkin kilolu ve kardiyovasküler sistem: Risk veya hastalık mı?*

To the Editor,

Obesity is a major health problem of modern civilization that presents high risk for development of cardiometabolic diseases. Effects of adiposity are mediated through conventional risk factors and also act as independent predictor for tissue and organ damages. However, it is not clear whether overweight persons with body mass index from 25 to 29.99 kg/m<sup>2</sup> have the same risk for development of diseases as obese persons with body mass index above 30 kg/m<sup>2</sup>. Both conditions are marked with increased volume of adipose tissue with altered value of adipokines and activated inflammation and most studies included obese persons. Not so long ago, being overweight was considered as a sign of good social status and health, today attitudes are changing dramatically due to new insights into the adipose tissue as an endocrine organ. Therefore, it is necessary to conduct research including overweight persons to find out the level of these pathologic mediators, the changes they induce and the level of risk for development of cardiovascular diseases in order to know what to recommend to our patients.

According to latest studies, the number of overweight and obese people is growing progressively in all age groups and the number of

overweight persons has increased in comparison to the number of obese persons. Obesity is not only associated with development of conventional risk factors for cardiovascular diseases, it is also an independent predictor of heart failure in general population (1).

While it has been confirmed that a number of diseases and conditions are obesity-related, health consequences of being mildly to moderately overweight remain controversial and need thorough investigation. For example, only few existing evidence indicate that overweight also carries increased risk for heart failure (2). In overweight persons increased volume of adipose tissue as well as its distribution directly affect cardiac structure and function through neurohumoral factors associated with changes in preload and afterload, hyperdynamic circulation, chronic volume overload, peripheral vascular resistance, adipokines related hypertrophic effect and myocardial matrix remodeling and result in left ventricular mass growth (3). Left ventricular diastolic dysfunction and sub-clinical right ventricular dysfunction, represent impairment in the filling properties of the heart as a result of overweight/obesity related cardiovascular risk factors and cardiac structural changes, that becomes more pronounced with the increase in body weight (4-6).

It can be concluded that being overweight is a condition where changes in adipose tissue composition and biochemical activity occur and it present risk for early cardiovascular changes. Due to high rates of morbidity and mortality from cardiovascular disease and the epidemic proportion of overweight in population, it is important to conduct further investigations in this area to clarify pathophysiologic processes in this pre-obesity stage and to prepare effective prevention and treatment strategies.

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