Obesity paradox in elderly patients with cardiovascular diseases

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1. Introduction

Recent publications have shown that obesity in different populations such as elderly people and patients with cardiovascular diseases (CVD), like heart failure (HF) or coronary artery disease (CAD), is surprisingly not associated with a higher but with a lower mortality risk. This fact has thus been termed “obesity paradox”. A major overlap between those two population groups, in which the obesity paradox is usually observed, should here be taken into account: many elderly people are affected by CVD and the majority of CVD patients are elderly people [1,2].

In the general population overweight and obesity are well-known risk factors for the development of cardiovascular diseases [3,4] like HF [5], ischemic heart diseases [6], abnormal left ventricular geometry, endothelial dysfunction, systolic and diastolic dysfunction and atrial fibrillation [4]. Overweight and obesity increase overall mortality and predict premature death [7–10]. Furthermore obesity is associated with the development of cardiovascular risk factors like increased insulin resistance and type 2 diabetes mellitus, hypertension and dyslipidemia. The majority of studies evaluating obesity-related cardiovascular risk factors have been conducted in middle-aged, not in older adults, however, the prevalences of most of the obesity-related cardiovascular risk factors, such as hypertension and diabetes mellitus increase with age.

Prevalence of overweight and obesity are increasing in all age groups, including elderly people [11–13]. On the other hand, until recently, underweight, malnutrition and frailty in elderly people constituted the most important issues. However, the increase in prevalence of overweight and obesity due to an increase in this overall prevalence and due to the ongoing expansion of the elderly proportion in the population in industrial nations has led to a focus of this problem in the elderly, too. Obesity in older subjects is associated with increased morbidity such as infections [14], functional limitations and poor quality of life [15,16], and obese older persons are admitted more frequently to nursing homes compared to those who are not [17]. Additionally, obesity in the elderly is correlated with decreased autonomy and mobility, with increased handicap in activities of daily living (such as personal hygiene, washing and eating) and instrumental activities of daily living (such as climbing stairs and shopping) [18]. A high BMI is associated with a lower quality of life, as a study in 5362 patients with coronary artery diseases one year after their index cardiac catheterization revealed. This is especially marked in subjects with severe obesity [19].

If the role of overweight and obesity in older patients and in patients with heart diseases is controversial, clinical consequences and the role of weight management in elderly patients, in patients...