Obesity : More Than Meets The Eye

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The prevalence of obesity (body mass index >30) is increasing in both the developed and developing countries. In India, the prevalence of overweight individuals is reported from 20-40% in various studies with over 5-10% being obese [1,2].

Obesity is associated with increased mortality and morbidity. Direct association between obesity and several diseases, including diabetes mellitus, hypertension, coronary artery disease, obstructive sleep apnoea, gastroesophageal reflux disease, osteoarthritis and various malignancies is well recognized. In addition to increased risk of coronary artery disease, obesity is associated with heart failure, sharing a complex relationship [3].

In the Framingham Study, almost 6000 individuals without a history of heart failure (mean age 55 years) were followed for a mean of 14 years. The risk of developing heart failure was two-fold higher in obese individuals, as compared to the subjects with a normal body mass index (BMI). Individuals with obesity have a form of cardiomyopathy attributed to chronic volume overload, characterized by left ventricular dilatation, increased left ventricular wall stress and compensatory left ventricular hypertrophy. Most studies have reported abnormal diastolic function without abnormal systolic function. Does presence of left ventricular (LV) dysfunction translate into a bad prognosis? Reports involving stable outpatients suggest that obesity is associated with improved survival after the development of heart failure. This finding is paradoxical because obesity increases the risk and worsens the prognosis of other cardiovascular diseases. This is called the obesity paradox [4].

In this issue, Chadha et al have analysed the impact of BMI on LV function [5]. In this cross sectional study of 51 overweight/obese and 25 normal individuals, various echocardiographic parameters of systolic and diastolic dysfunction were studied. Subclinical LV diastolic dysfunction was found in all grades of obesity that correlated with the BMI. The authors have defined

obesity on the basis of BMI alone. However the Asian Indian phenotype implies higher percentage body fat and abdominal adiposity at lower or similar BMI levels as compared to white Caucasians. Even “non obese” Indians have higher abdominal obesity and use of various anthropometric parameters like waist hip ratio and waist circumference might have been better predictors [6]. The definition of overweight and obesity in the present study is based on western recommendations while more stringent cut off points of anthropometric parameters are emerging for Indian population [7]. The duration of obesity is also an important factor and has not been looked into.

Limitations notwithstanding, the study highlights the presence of LV dysfunction amongst overweight and obese individuals. Most importantly, to the long list of illnesses that are predisposed to by obesity, we have an addition in the form of heart failure. We have one additional reason to shed weight by a judicious combination of diet and exercises.

References

1. Sidhu S, Kaur A, Singh P. Prevalence of overweight and obesity among urban and rural adult females of Punjab. *Anthropol Anz* 2005;63:341-5.
2. Sood RK, Gupta AK, Ahluwalia SK, Dhadwal D, Sharma RK. An epidemiological study of obesity in Shimla Town. *Indian J Med Sci* 1996;50:362-4.
3. Malnick SDH, Knobler H. The medical complications of obesity. *Q J Med* 2006; 99:565-79.
4. Curtis JP, Selter JG, Wang Y, Rathore SS, Jovin IS, Jadbabaie F, et al. The obesity paradox. Body mass index and outcomes in patients with heart failure. *Arch Intern Med* 2005; 165:55-61.
5. Chadha DS, Swamy AJ, Malani SK, Ganjoo RK, Mathew OP. Impact of body mass index on left ventricular function. *MJAFI* 2009; 65: 303-7.
6. Yusuf S, Hawken S, Ôunpuu S, et al. Obesity and the risk of myocardial infarction in 27000 participants from 52 countries: a case-control study. *The Lancet* 2005; 366:1620-9.
7. Mohan V, Deepa M, Farooq S, Venkatnarayan KM, Datta M. Anthropometric cut off points for identification of cardiometabolic risk factors in urban Asian Indian population. *Metabolism* 2007; 56: 961-8.

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