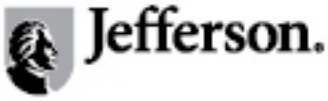

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Invited Commentary on: Orthotopic Heart Transplantation in Patients With Metabolic Risk Factors

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Invited Commentary

Obesity affects ~50-60% of a nation's population and can be associated with insulin resistance and the metabolic syndrome (MetS).[1] The prevalence of the MetS in the global population is ~ 20-30% and people with metabolic syndrome (MetS) are twice as likely to die of cardiovascular disease.[2] As more advanced heart failure patients are presented for evaluation for heart transplantation such risk factors are often overlooked or marginalized in an effort to provide care. Kilic et al. queried the UNOS database to evaluate the impact of risk factors for MetS and their effect on mortality after Orthotopic heart transplantation (OHT). Their work demonstrated that increasing number of metabolic risk factors contributed to increased mortality and decreased survival in OHT patients.

But are the metabolic risk factors reviewed from the UNOS database in this review substantial enough to define them as the metabolic syndrome?

The definition for MetS for use in clinical practice include central obesity measured by waist circumference (WC), plus any two of the following: raised triglyceride (TG) >150 mg/dl; reduced HDL cholesterol <40 mg>/dl, systolic blood pressure > 130; raised fasting blood sugar(BS) or type 2 diabetes mellitus.[3] The World Health Organization (WHO), The Europe group for the study of Insulin Resistance (SGIR), The National Cholesterol Education Program (NCEP:ATP111), The American Association of Clinical Endocrinology (AACE), the International Diabetic Federation (IDF), and the AHA/NHLBI have attempted to incorporate all the different parameters used to define metabolic syndrome. The core manifestations of the metabolic syndrome (MetS) which prevail throughout all definitions remain **central obesity** and **insulin resistance**, key data missing from the UNOS database.[4, 5] The UNOS database does not contain waist circumference, TG, HDL or BS data; the authors substituted BMI > 30 kg/m2 for obesity, history of hypertension and diabetes for risk factors to evaluate for MetS.

Although there is a well defined gradient relationship between the level of BMI and probability of the MetS, most obese individuals do not have MetS and conversely most patients with MetS are not obese or overweight. Central obesity, measured simply by waist circumference, is more indicative of the MetS then BMI across all BMI groups for both men and women.[5] Overall adiposity defined by BMI is not a surrogate marker for insulin resistance.

Despite the sample size and their significant finding that multiple metabolic risk factors in OHT are associated with mortality, this study does not use standard accepted definitions of MetS. The core manifestations of the MetS, central obesity and insulin resistance, were not reported in this review due to the lack of data available in the database. To optimize long term survival for these patients, clinicians should carefully evaluate candidates for acceptance for transplant, envision steroid sparing immunosuppression protocols, and acknowledge and create an algorithm for post OHT physical rehabilitation to minimize the development of the MetS. A prospective treatment plan will mitigate and hopefully improve long term survival and quality of life in patients with metabolic risk factors.

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