Acute heart failure patients with 'metabolically healthy obesity' have better survival

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Acute heart failure patients with 'metabolically healthy obesity' have better survival than those with 'metabolically unhealthy obesity' or with normal weight regardless of metabolic status, according to a study presented today at EuroEcho-Imaging 2018.[1] Obese patients had less deterioration in heart structure and function.

Obesity is an independent risk factor for developing heart failure. However, once heart failure is diagnosed, obesity is associated with lower mortality—the so-called obesity paradox.[2]

This study explored whether this paradox might be explained by metabolic health and by heart structure and function. The term 'metabolically healthy obesity' refers to people who are obese but do not have metabolic risk factors such as high blood pressure, high cholesterol, and glucose intolerance.[3]

This retrospective cohort study enrolled 3,564 patients admitted to hospital with acute heart failure between 2009 and 2016. Of those, 2,021 were overweight-to-obese (BMI 23 kg/m2 or above) and 1,543 were a normal weight (BMI less than 23 kg/m2). Data on blood pressure, cholesterol and glucose were collected. Echocardiography was used to assess left ventricular (LV) ejection fraction, global longitudinal strain (GLS), and geometry.

Patients were followed-up for a median of 33.7 months. The primary outcome was all-cause mortality. Metabolically healthy obese patients had a significantly better survival rate (79.4%) than metabolically unhealthy obese patients (66.5%). Their survival was also significantly better than normal weight patients with good (63.9%) and poor (55.5%) metabolic health.

Compared to normal weight patients, overweight-to-obese patients had a significantly lower rate of eccentric LV hypertrophy (62.4% versus 49.1%) and higher LV GLS (10.5% versus 11.0%) and LV ejection fraction (38.9% versus 41.6%).Higher BMIs were associated with lower mortality risks overall and in all subgroups of LV GLS or LV geometry.

Lead author Dr. Chan Soon Park, cardiologist, Seoul National University Hospital, Seoul, Korea, said: "Our findings provide insights into why obesity is protective in patients with heart failure. Based on our study, obese patients have less eccentric hypertrophy and greater LV GLS and LV ejection fraction, meaning there is less deterioration in the structure and function of the heart. In addition, we found that metabolic health, such as blood pressure, blood cholesterol, and glucose tolerance, plays a role, with metabolically healthy obese patients having the best chance of survival.

Regarding the implications of the results, Dr. Park said: "Assessing heart structure and function, and metabolic health status, in patients with heart failure may be a promising way to identify those at greater risk of premature death. Further studies are needed to see if preventing and treating metabolic abnormalities—for example with statins and blood pressure lowering medications—can improve the prognosis of overweight and obese patients with heart failure."

More information: 1. The abstract 'Obesity, myocardial function, geometry, and prognosis in acute heart failure' will be presented during

the session New insight in the evaluation of myocardial systolic and diastolic function on 6 December, 15:30 to 16:30 CET, in the Moderated ePosters 1 area.

2. Ponikowski P, Voors AA, Anker SD, et al. 2016 ESC Guidelines for the diagnosis and treatment of acute and chronic heart failure. Eur Heart J. 2016;37:2129-2200.

3. Piepoli MF, Hoes AW, Agewall S, et al. 2016 European Guidelines on cardiovascular disease prevention in clinical practice. Eur Heart J. 2016;37:2315-2381.

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