Impact of obesity paradox between genders on in-hospital mortality in cardiogenic shock: a retrospective cohort study


1Samsung Medical Center, Seoul, Korea (Republic of); 2Chonnam National University Hospital, Gwangju, Korea (Republic of); 3Yonsei Cardiovascular Center, Seoul, Korea (Republic of); 4Korea University Anam Hospital, Seoul, Korea (Republic of); 5Ewha Womans University Seoul Hospital, Seoul, Korea (Republic of); 6Konkuk University Hospital, Seoul, Korea (Republic of); 7Inje University Sanggye Paik Hospital, Seoul, Korea (Republic of)

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Background: In a few studies, obesity was associated with better outcomes in patients with cardiogenic shock (CS). Although this phenomenon, the “obesity paradox”, reportedly manifests differently based on sex in other disease entities, it has not yet been investigated in CS patients.

Methods and results: 1,227 patients with CS from The Retrospective and prospective observational Study to investigate Clinical oUtcomes and Ef- ficacy of left ventricular assist device for Korean patients with cardiogenic shock (RESCUE) registry in Korea were analyzed. The study population was classified into obese and non-obese groups according to Asian-Pacific criteria (BMI >25.0 kg/m² for obese). Clinical impact of obesity on in-hospital mortality according to sex was analyzed using logistic regression analysis and restricted cubic spline curves. In-hospital mortality rate was significantly lower in obese men than non-obese men (34.2% vs. 24.1%, p=0.004) while the difference was not significant in women (37.3% vs. 35.8%, p=0.884). As a continuous variable, higher BMI showed a protective effect in men conversely, BMI was not associated with clinical outcomes in women. Comparing to normal-weight patients, obesity was associated with a decreased risk of in-hospital death in men (multivariable-adjusted OR 0.63, CI 0.43–0.92, p=0.016), not in women (multivariable-adjusted OR 0.94, 95% CI 0.55–1.61, p=0.828). Interaction P value for the association between BMI and sex was 0.023.

Conclusions: Obesity paradox exists and apparently occurs in men among CS patients. The differential effect of BMI on in-hospital mortality was observed according to sex.