Obesity paradox versus frailty syndrome in first-ever ischemic stroke survivors

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Dear editor,

Results of large studies, primarily conducted in North America and Europe, have inferred an association between a body mass index (BMI) \( \geq 25 \text{ kg/m}^2 \) and improved survival after stroke (1,2). This phenomenon, termed the ‘obesity paradox’, may have implications for the management of susceptible groups.

We investigated the implications of this paradox in a group of patients with first-ever ischemic stroke (FES) in Mashhad, Iran. The study cohort consisted of 360 prospectively enrolled patients [mean age: 65.9 ± 14.3 years; 174 (48.3%) females] who were followed for five-years. Patients were placed into four categories based on their admission BMI (Fig. 1). Two hundred (55.6%) patients died during the study period. Survival differed significantly across the four groups (Fig. 1). Patients with BMI \( \geq 30 \text{ kg/m}^2 \) showed higher probability of survival, compared with other groups (\( P < 0.001 \)). Those with BMI < 20 kg/m\(^2\) had the poorest survival rates but were also significantly older than patients with BMI > 20 kg/m\(^2\) (mean age = 73.3 ± 16.6 years; \( P = 0.002 \)).

Our data suggest that in Iranian FES patients with a BMI < 20 kg/m\(^2\) and who may also be at risk of the frailty syndrome, there is a compelling argument for nutritional interventions aimed at improving outcomes. Abnormally low BMI appears to be a predictor of mortality and may serve as an indicator for more proactive and systematic nutritional support in FES survivors. Whether weight reduction in survivors of FES with BMI \( \geq 30 \text{ kg/m}^2 \) is beneficial or harmful will need to be formally tested.

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