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Article (Published Version)

Kazemi-Bajestani, Seyyed Mohammad Reza, Ghayour-Mobarhan, Majid, Thrift, Amanda G, Ferns, Gordon A, Frazadfar, Mohammad Taghi, Mokhber, Naghme, Behrouz, Reza and Azarpazhooh, Mahmoud Reza (2015) Obesity paradox versus frailty syndrome in first-ever ischemic stroke survivors. *International Journal of Stroke*, 10 (7). E75. ISSN 1747-4930

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

Dear editor,

Results of large studies, primarily conducted in North America and Europe, have inferred an association between a body mass index (BMI) ≥ 25 kg/m² 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 ≥ 30 kg/m² showed higher probability of survival, compared with other groups ($P < 0.001$). Those with BMI < 20 kg/m² had the poorest survival rates but were also significantly older than patients with BMI > 20 kg/m² (mean age = 73.3 ± 16.6 years; $P = 0.002$).

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Conflict of interest: None declared.

DOI: 10.1111/ijvs.12567

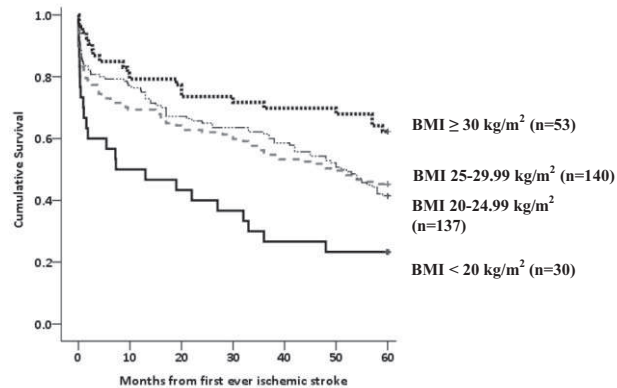


Fig. 1 Kaplan–Meier curves of patients (all followed for five-years) within different groups of BMI at the time of admission for first-ever ischemic stroke (Log-rank tests: BMI < 20 kg/m² versus all other levels, all $P < 0.05$; no detectable differences between the other groups).

Our data suggest that in Iranian FES patients with a BMI < 20 kg/m² 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 ≥ 30 kg/m² is beneficial or harmful will need to be formally tested.

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