

“Obesity paradox” – is thinner really a winner?

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Introduction: Obesity is considered one of the main reversible risk factors for coronary artery disease development. On the contrary, earlier research demonstrated that higher body mass index (BMI) might have a beneficial effect in some patients after acute myocardial infarction - a phenomenon called the “obesity paradox”^{1,2}. The aim of this study is to determine a relation between the change in BMI and the long-term outcomes of patients treated for acute myocardial infarction.

Patients and Methods: The patient registry for myocardial infarction in Dubrava University Hospital collects data on patients with ST-elevation (STEMI) and non-ST-elevation myocardial infarction (NSTEMI) admitted to Department for Cardiovascular Medicine from January 2017. Patients without noted BMI value after 1-year of follow-up were excluded from this trial. A total of 1400 patients were divided into three groups with maintained, increased, and reduced BMI, the latter of which was further divided into groups with intentional and unintentional BMI reduction. The median follow-up time of all patients was 1298 days. We observed and compared the occurrence of major adverse cardiac events (MACE) among the examined groups of patients.

Results: The group with reduced BMI had a significantly higher incidence of MACE (39.9%) in comparison to the groups with maintained (24.5%, $p < 0.001$) and increased BMI (27.4%, $p < 0.001$). There was no significant difference in the incidence of MACE between the groups with maintained and increased BMI ($p = 0.353$). The patients who died during the follow-up had a significantly greater reduction of BMI than the survivors (1.50 vs 1.14, $p < 0.001$), however, this is not applicable to other MACE. Patients with unintentional reduction of BMI had a much higher incidence of MACE than those with the intention to reduce BMI (69.1% vs 18.9%, $p < 0.001$).

Conclusion: The results of our study imply that reduction of BMI after undergoing treatment for STEMI or NSTEMI might represent a risk factor for the future development of MACE. Greater BMI reduction is connected to higher mortality, but not the occurrence of other MACE. In previously conducted research, we have not found the outcomes being evaluated based on patient’s intention to lose weight. We demonstrated that unintentional BMI reduction goes in pair with the highest incidence of MACE.

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LITERATURE

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