The correlation between body mass index, routine clinical and laboratory parameters and in-hospital survival in patients with acutely decompensated heart failure

Introduction: Recent studies have investigated the existence of so-called “obesity paradox” in heart failure (HF) patients, suggesting that obese patients might have a better prognosis than underweight and normal weight patients. It seems that body mass index (BMI) may be an independent prognostic factor in patients with acute and chronic HF.

Patients and Methods: We investigated the correlation between BMI, in-hospital survival and routine clinical and laboratory parameters in patients hospitalized for acutely decompensated HF.

Results: Total number of 145 patients (mean age 76±10.2 years) were divided in three groups: 37 with normal body weight (20-24.9 kg/m²), 64 overweight (25-29.9 kg/m²), and 44 obese patients (≥30 kg/m²) patients. At the end of approximately 9 days of hospitalization, 24 of all patients died (16.5%). In-hospital mortality was significantly lower in obese patients (7%; p=0.05). Patients with normal body weight were older than obese patients: 80 (75-87) compared to 72 (65-80); p=0.001 and significant negative correlation between BMI and patients age existed (r=-0.383; p<0.001). There was no significant difference in left ventricular ejection fraction between three compared groups of patients. Obese patients had significantly lower NT-proBNP (pmol/l): 319 (182-758) compared to overweight 862 (342-3013) and compared to normal body weight 1209 (616-2378); p=0.001, hs-cTnT (ng/l): 23 (15-57) compared to overweight 38 (27-70) and compared to normal body weight 44 (29-60); p=0.009 and serum urea (mmol/l) concentration: 8.1 (6.2-12.3) compared to overweight 9.7 (6.6-12.3) and compared do normal body weight 11.3 (8.2-14.7); p=0.039. No significant difference in serum creatinine, uric acid and hemoglobin existed, but significant negative correlation between BMI and NT-proBNP was found (r=-0.22; p=0.013).

Conclusions: In-hospital mortality was significantly lower in obese HF patients. Obese patients had significantly lower NT-proBNP, hs-cTnT and serum urea concentrations. There was significant negative correlation between BMI and NT-proBNP.

LITERATURE