P6333

Therapy-induced weight gain is associated with higher appendicular muscle mass in patients with heart failure

A. Stefaniak[1], W. Ostrega[1], M. Buczkowska[1], A. Mroczek[1], E. Zbrojkiewicz[1], J. Niedziela[2], J.U. Nowak[2], M. Gasior[2], P. Leszek[3], T. Rywik[3], P. Rozentryt[2]

[1]*Department of Toxicology and Health Protection, School of Public Health in Bytom, Medical University, Katowice, Poland;* [2]*Silesian Center for Heart Diseases (SCHD), 3rd Department of Cardiology, School of Medicine with the Division of Dentistry in Zabrze, Zabrze, Poland;* [3]*National Institute of Cardiology, Department of Heart Failure and Transplantology, Warsaw, Poland*

Background: The catabolic predominance in acute heart failure (HF) leads to significant weight loss. The low body weight before HF (preHF) and the loss during its natural course, both are risk factors of sarcopenia and worse clinical outcome in HF. Modern therapy can inhibit or even reverse catabolism resulting in oedema-free weight gain. It is unknown if therapy-induced weight gain can protect against low appendicular skeletal muscle mass (ASM) – the key prerequisite of sarcopenia.

Aims: We intended to assess whether therapy-induced oedema-free weight gain protects against low ASM.

Material and methods: In 802 patients with HF (age: 52±10 years 13% women, LVEF: 24±7%, NYHA: 2.6±0.7), we analysed weight changes from preHF to minimal oedema-free weight during HF (minHF), and then weight occurring after removal of all reversible factors aggravating HF with optimisation of therapy (indexHF). At index date we performed dual X-ray densitometry (DXA) calculating ASM as the sum of lean mass within the legs and arms adjusted to body size. The low ASM was defined as ≤ 7 and 6 kg/m^2 in men and women respectively. The catabolic (C) and anabolic (A) components of weight change ware calculated based of formulas: C=100*(minHF-preHF)/preHF, A=100*(indexHF-minHF)/minHF. Using logistic regression we estimated the risk of low ASM after adjustment for potential confounders.

Results: The median C and A were –11.7% and 3.3% respectively. The low ASM was found in 230 (28.7%) patients. In multivariable model comprising age, gender, weight preHF, C and A, the odds for low as compared to normal ASM are shown in table 1.

Conclusions: In HF higher body weight preHF and oedema-free weight gain decreases the risk of low ASM independently of age, gender and weight loss.

	Odds ratio ± 95% CI	
	Normal ASM	Low ASM
Gender (man v. women)	1.0	0.87 (0.81–0.94), p=0.0002
Weight preHF (per 1 kg/m^2 increase)	1.0	0.85 (0.83–0.87), p<0.0001
Age (per 5 years increase)	1.0	1.05 (1.02–1.08), p=0.0003
C (per 1% increment)	1.0	1.05 (1.04–1.06), p<0.0001
A (per 1% increment)	1.0	0.98 (0.97–0.99), p<0.0001