

## **Multidisciplinary integrated metabolic rehabilitation in elderly obese patients: effects on cardiovascular risk factors, fatigue and muscle performance.**

A. E. Rigamonti, A. De Col, S. Tamini, S. Cicolini, D. Caroli, R. De Micheli, G. Tringali, L. Abbruzzese, N. Marazzi, S. G. Cella, A. Sartorio

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Background: Obesity is a widespread problem in the elderly, being associated with severe comorbidities negatively influencing life expectancy. Integrated multidisciplinary metabolic rehabilitation aimed to reduce body weight (BW) and fatigue, increase physical autonomy and introduce healthy life style changes has been proposed as a useful intervention to improve the general health status and quality of life of the obese geriatric population.

Methods: Six hundred-eighty four severely obese subjects (F/M = 592/92; age range: 61-83 years; mean body mass index, BMI  $\pm$  SD:  $42.6 \pm 5.6$  kg/m<sup>2</sup>) were admitted to take part in a three-week in-hospital BW reduction program (BWRP), entailing energy restricted diet, psychological counselling, physical rehabilitation and nutritional education. Biochemical parameters, cardiovascular risk factors (throughout the Coronary Heart Disease Risk, CHD-R), fatigue (throughout the Fatigue Severity Scale, FSS) and lower limb muscle performance (throughout the Stair Climbing Test, SCT) were evaluated before and at the end of the BWRP.

Results: A 4% BW reduction was achieved at the end of the BWRP. This finding was associated with a significant improvement of the metabolic homeostasis (i.e., decrease in total cholesterol and glucose) and a reduction of systolic blood pressure in both females and males, thus resulting in a reduction of CHD-R in the male group. Total FSS score and SCT time decreased in female and male obese patients. The effects of BWRP were comparable among all age-related subgroups (>60, 60-69 and >70 years), apart from DCHD-R, which was higher in male subgroups. Finally, age was negatively correlated with DBMI and DFSS.

Conclusions: Though only a relatively limited number of outcomes were investigated, the present study shows that a 4% BW reduction in severely elderly obese patients is associated with positive multisystemic effects, particularly, muscle-skeletal and cardiometabolic benefits, which can favorably influence their general well-being and improve the autonomy level in performing more common daily activities. The maintenance of a healthy life style, including controlled food intake and regular physical activity, after a BWRP is obviously recommended in all elderly obese patients to further improve their clinical condition.

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