

Editor's Desk



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SARCOPENIC OBESITY

Introduction: We see in our clinical practice many elderly persons who has obesity and muscle weakness. Recognition of obese patients who have associated muscle problems is an essential goal for clinicians.

- Sarcopenia is characterized by the loss of muscle mass and strength or physical function which occurs naturally with aging.
- Sarcopenia accompanied by an increase in the amount of adipose tissue is sarcopenic obesity, term proposed by Baumgartner. A confluence of two epidemics affects this condition: namely, an aging population and an increasing rate of obesity.

Sarcopenia and obesity share common pathophysiologic mechanisms, including lifestyle behaviors, hormones, and immunological factors, all of which may act synergistically, and sarcopenic obesity may have a greater effect on metabolic disorders, cardiovascular disease (CVD), and mortality than either obesity or sarcopenia alone.

Health Consequences of Sarcopenic Obesity

- Disability and Institutionalization,
- Mortality
- Metabolic Diseases
- Comorbidities
- Poor quality of life

Increased adiposity is often associated with high circulating free fatty acids which inhibit growth hormone production and decrease plasma insulin-like growth factor I (IGF-I) Sarcopenic obese persons had depressed growth hormone secretion and lower testosterone compared to obese persons. Low levels of these anabolic hormones have been reported positively associated with low muscle strength and may therefore contribute to muscle impairment in obese individuals. Excess energy intake, physical inactivity, low-grade inflammation, insulin resistance and changes in hormonal milieu may lead to the development of so called 'sarcopenic obesity'. It was originally believed that the culprit of age-related muscle weakness was a reduction in muscle mass, but it is now clear that changes in muscle composition and quality are predominant.

The progressive mismatch between mass and strength occurs because of a progressive deterioration of muscle "quality", including decrease in fiber size and number, intrinsic



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reduction of contractility in the intact fibers, fat micro and macro-infiltration, increase in collagen, modification of the motor unit, and impaired neurological modulation of contraction.

Evidence has also emerged that muscle strength is more important than muscle mass as a determinant of functional limitation and poor health in older age. Functional limitation and mortality, is better estimated by considering jointly obesity and muscle strength rather than obesity and muscle mass

Treatments for sarcopenic obesity

Lifestyle interventions, *Dietary strategies like calorie restriction and protein supplementation* and physical activity including *Resistance training and aerobic exercise* are hallmarks of treating sarcopenic obesity. Only aerobic exercise without protein supplementation is not good. Even minimal resistance exercise improves muscle strength and mass, and progressive resistance exercises counter sarcopenia by increasing strength. As with any exercise program, clinical consultation and medical clearance is advised.

Future directions and emerging therapies

Anamorelin, a ghrelin analogue, Testosterone and selective androgen receptor modulators, Vitamin K, Myostatin inhibitors, Weight loss therapies, Mesenchymal stem cells, Neuromuscular activation, Whole-body vibration therapy (using electrical stimuli), Periodization strategies, Bariatric surgery, are being tried in management of sarcopenic Obesity.

Sarcopenic obesity is a global health phenomenon due to both the rapid increase in the number of elderly individuals and the obesity epidemic. We have to create awareness about this important geriatrics syndrome.

Further research is needed to identify new target for prevention and cure.

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