

各種動脈硬化指標からみた サルコペニア肥満の診断基準の確立

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Establishment of Criteria for Sarcopenia Obesity from Various Arteriosclerotic Indices

by

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ABSTRACT

The aim of this study is to prove how lean mass affect risk factor of arteriosclerosis with sarcopenic obesity. We studied 16 out patients with sarcopenia (Sarco: age; 75.9 ± 5.7 years, BMI; $22.1 \pm 2.3 \text{kg/m}^2$) and 32 obesity (OB: age; 46.0 ± 13.1 years, BMI; $38.2 \pm 4.4 \text{kg/m}^2$). All patients underwent dual energy X-ray absorptiometry (DEXA), cardio pulmonary exercise test (CPX), blood test, HOMA-IR, hand grip, walking speed, branchial ankle pulse wave velocity (baPWV) and reactive hyperemia index (RHI). OB group also underwent CT scan in addition to above examinations. Skeletal muscle mass index (SMI) of Sarco group was conformed with Sarcopenia criteria ($6.7 \pm 0.5 \text{kg/m}^2$). On the other hand, OB group has high SMI and muscle strength

($9.3 \pm 1.0 \text{ kg/m}^2$, $34.4 \pm 6.6 \text{ kg}$). baPWV, RHI, LDL/HDL ratio (L/H) and TG/HDL ratio (T/H) were evaluated as index of arteriosclerosis. There were no significant differences of those index in 2 groups but RHI, LDL/HDL ratio and TG/HDL ratio were showed high value in OB group. OB patients were divided to 2 groups (HOMA-IR low group: HOMA-IR was less than 2.5, HOMA-IR high group: HOMA-IR was more than 2.5) and every data was compared with 2 groups. Lean mass index (SMI, %lean/W, %appendicular skeletal muscle (ASM) /W, lean/fat (Total), VFA/lean) were also assessed with both groups. There were significantly difference with age, peak $\dot{V}O_2$, total fat mass, %lean/W, lean/fat (Total), AST, ALT, IRI, and T/H. ROC analysis showed that the cutoff of %lean/W to identify HOMA-IR was 58.6% and lean/fat (Total) was 1.52 with optimal sensitivity (85.7%) and specificity (72.0%). The area under the curve (AUC) of both indexes was 0.789. In conclusion, it was cleared that characteristics and relationship were observed between body composition and arteriosclerosis of highly obese Japanese male patients. We consider that index of lean mass would predict insulin resistance. It also would be one of diagnostic criteria of sarcopenic obesity.

要 旨

当院健康科学センターを受診しているサルコペニア外来通院患者 16 名, 肥満症外来通院中の肥満症患者 32 名を対象とし, サルコペニア肥満症がどの程度動脈硬化の危険因子に影響するかを明らかにし, 骨格筋を加味した肥満症評価法の確立を目指す。肥満症患者はサルコペニアの基準を満たしていないが, 動脈硬化指標が高値であることが明らかとなった。HOMA-IR を基準値以上と以下の 2 群に分けて比較し, 有意差のあった %lean/W, lean/fat (Total) について HOMA-IR に対する cutoff 値を検討した。cutoff 値は %lean/W: 58.6% (感度 85.7%, 特異度 72.0%), lean/fat (Total) : 1.52 (感度 85.7%, 特異度 72.0%) で, ROC 曲線下面積はともに 0.789 であった。高度肥満症患者のサルコペニアを判断する場合, 除脂肪量 / 体重と除脂肪量 / 脂肪量は動脈硬化関連指標であるインスリン抵抗性を予測することがで

き, 動脈硬化リスクの高い高度肥満症患者のサルコペニア肥満を診断する指標の 1 つとなる可能性が示唆された。