Correlation of Body Composition Analysis Parameters with Prevalence of Metabolic Dysfunction-Associated Steatotic Liver Disease in Bariatric Surgery Patients

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No Disclosures to Report

Background & Innovation

- A large proportion of obese patients undergoing bariatric surgery exhibit concomitant Metabolic Dysfunction-Associated Steatotic Liver Disease (MASLD)
- Several non-invasive methods exist to evaluate for MASLD in obese patients, including abdominal ultrasound
- SECA, a type of body composition analysis scanner, has been previously validated in obese patients across multiple ethnicities

Objective

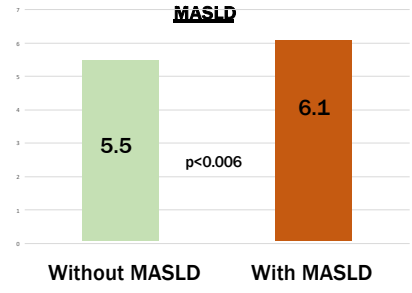
To evaluate the potential of body composition analysis parameters to predict MASLD in bariatric surgery patients

Methods

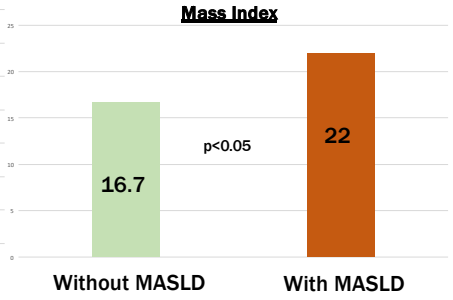
A cohort of 39 patients undergoing bariatric surgery (laparoscopic Roux-En-Y gastric Bypass or sleeve gastrectomy) between May-September 2024 were included. On routine pre-operative abdominal ultrasound, 18 patients exhibited evidence of MASLD versus 21 who exhibited normal sonographic liver parenchyma. Liver function test values were normal for all 39 patients at the time of ultrasound and body composition analysis. Patient demographics, body composition, and laboratory values were compared using multiple logistic regression and t-test for evaluation of MASLD.

Results

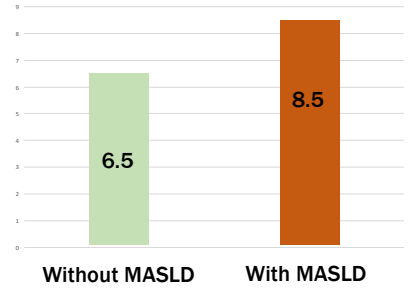
1) HgA1c of bariatric patients with and without MASLD



2) Bariatric patients with MASLD exhibit higher Fat Mass Index



3) Bariatric patients with MASLD exhibit higher Basal Metabolic Rate to Resting Energy Expenditure



4) Age, BMI, AST, ALT, and total cholesterol did not differ in patients with vs. without MASLD on abdominal ultrasound

MASLD	(-)	(+)	P-value
Age	49	46	P<0.48
BMI	43.9	41.1	P<0.32
AST	23	21	P<0.48
ALT	21	16	P<0.30
Total Cholesterol	189	173	P<0.47

Conclusions

- Body composition analyses, including fat mass index, may be indicators of MASLD in obese patients and may delineate patients who can benefit from further imaging and/or liver biopsy at the time of bariatric surgery
- Further research and larger sample size is needed to determine whether body composition analysis may serve as a screening modality to assess for MASLD

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