

論 文 要 旨

Nonalcoholic fatty liver disease is associated with both subcutaneous and visceral adiposity -A cross-sectional study-

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Abstract

Objective:

Nonalcoholic fatty liver disease (NAFLD) is recognized as a hepatic manifestation of metabolic syndrome because of the association with visceral obesity. However, the association between NAFLD and subcutaneous fat accumulation remains unclear.

Methods:

The study population included 3197 participants in regular health checkups, who were both hepatitis B virus surface antigen-and hepatitis C virus antibody-negative, and consumed < 20 g of alcohol per day. They were divided according to four quantiles of subcutaneous (SFA) and visceral fat areas (VFA) on computed tomography. Fatty liver was diagnosed using ultrasonography (FL-US).

Results:

The prevalence of FL-US increased across the SFA categories, even after adjusting for the VFA, in both men ($P < 0.001$) and women ($P < 0.001$). This significant association between FL-US and the SFA was already detected from the second SFA quantile. It is noteworthy that the mean body mass index (BMI) of the subjects in the second quantile was 23.7 kg/m^2 in men and 22.6 kg/m^2 in women. Independent positive associations were observed between alanine aminotransferase elevation and both the SFA and VFA in men, while gamma glutamyl transpeptidase elevation was independently associated with the VFA but not the SFA in both men and women. Similarly, the components of metabolic syndrome were independently associated with the VFA, but were less strongly associated (or not associated at all) with the SFA.

Conclusion:

This cross-sectional study suggests that NAFLD is independently associated with both visceral and subcutaneous adiposity *ab initio*, which is a characteristic that distinguishes NAFLD from other components of metabolic syndrome.