



Distribution of abdominal adipose tissue as a predictor of hepatic steatosis assessed by MRI

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AIM:

To evaluate the relationship between the distribution of visceral and subcutaneous adipose tissue and hepatic steatosis assessed using magnetic resonance imaging (MRI).

MATERIALS AND METHODS:

One T1-weighted, in-/out-of-phase, single-section sequence at the L3/L4 level and one multi-echo gradient MRI (MGRE) sequence were performed on 65 patients [19 females and 46 males; age 57+/-9.5 years; body mass index (BMI) 31+/-5.1kg/m(2)]. Visceral adipose tissue (VAT), subcutaneous adipose tissue (SAT) surfaces, and hepatic steatosis were automatically calculated using in-house software. Weight, height, BMI, waist circumference, hip circumference, and waist:hip ratio were recorded. The probability of having a steatosis greater than 10% on MRI was evaluated by receiver operating characteristic (ROC) curves.

RESULTS:

The anthropometric parameter best correlated to hepatic steatosis was the waist-to-hip ratio ($r=0.301$). VAT and proportion of VAT were correlated to liver fat content ($r=0.307$ and $r=0.249$, respectively). No significant correlations were found for BMI, hip circumference, and SAT. The area under the receiver operating characteristics (AUROCs) for the relationship between liver steatosis and BMI, waist circumference, waist:hip ratio, VAT surface, and proportion of VAT, were respectively 0.52, 0.63, 0.71, 0.73 and 0.75.

CONCLUSION:

Adipose tissue distribution is more relevant than total fat mass when assessing the possibility of liver steatosis in overweight patients.

Résumé en anglais

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