# Distribution of adipose tissue: Quantification and relationship with hepatic steatosis and vascular profiles of type 2 diabetic patients with metabolic syndrome



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| Résumé en anglais | AimAs the distribution of fat is increasingly related to cardiovascular events, we examined whether or not abdominal-fat quantification using magnetic resonance imaging (MRI) software is reliable, and whether or not it is related to clinical markers of fat distribution as well as to metabolic and vascular status. Methods We recorded the anthropometric measurements of 34 obese type 2 diabetic patients with metabolic syndrome. The patients were enrolled to evaluate their abdominal (visceral and subcutaneous) adipose tissue by single-slice L3–L4 MRI. Manual and automated analyses were compared. The relationships between anthropometric measurements, biological markers and intima-media thickness of the common carotid artery were also assessed. Results We validated the automated software to quantify abdominal-fat deposition with MRI compared with manual measurements (r2 = 0.95). The waist-to-hip-circumference ratio (WHR) was the only clinical parameter that correlated with the proportion and quantity of visceral and subcutaneous abdominal-adipose tissue evaluated by MRI (r = 0.60). In addition, fat repartition as evaluated by WHR was related to hepatic steatosis parameters (ferritin and ALAT) and to intima-media thickness, whereas simple waist circumference was not a determinant in these obese patients. We also showed that the adiponectin-to-leptin ratio was related to adipose tissue distribution. Conclusion Distribution of abdominal fat, as evaluated by MRI, can be reflected by clinical determination of the WHR. Differences in regional accumulations of abdominal fat may be specifically related to variations in the risks of steatosis and vascular rigidity among obese type 2 diabetic patients. |

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