



Steatosis degree, measured by morphometry, is linked to other liver lesions and metabolic syndrome components in patients with NAFLD:

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Background and aim: We carried out morphometric measurements of steatosis to evaluate relationships between steatosis degree and other liver lesions or metabolic syndrome components in nonalcoholic fatty liver disease (NAFLD). Patients and methods: We developed an algorithm to measure steatosis area. Two hundred and fourteen patients with NAFLD were included in derivation (10) and validation (204) groups. Controls consisted of patients who were steatosis-free (12), patients with chronic hepatitis C (188), and patients with alcoholic chronic liver disease (94). Results: Accuracy of steatosis area was considered as good or very good in at least 72% of cases by three pathologists. Steatosis areas were as follows: NAFLD=10.3±9.7%, virus=2.4±3.1%, alcohol=7.8±8.2% (P<0.0001). Steatosis area was closely related to steatosis grades in NAFLD (P<0.0001 for linear trend). Steatosis area increased from the fibrosis stage F0 to the fibrosis state F2, then decreased in the stages F3 and F4 (cirrhosis) (P<0.0001 for quadratic trend). Fibrosis was present in an average steatosis area of approximately 4% (defining significant steatosis) and in nonalcoholic steatohepatitis by approximately 8% (defining severe steatosis). Steatosis and fibrosis area increased symmetrically until approximately 10%, then steatosis area decreased to null as average fibrosis area reached 32%. Average fasting glycemia (approximately 92 mg/dl) or triglycerides and BMI plateaued before a steatosis area of approximately 4%, then increased thereafter. Significant steatosis was present in 61.3% of NAFLD versus 20.2% of viral hepatitis (P<0.0001) and in 58.7% of alcoholic liver diseases (P=0.674). Conclusions: The average threshold of steatosis area is 4% for the development of fibrosis or metabolic syndrome components and 8% for nonalcoholic steatohepatitis. Steatosis area may contribute to defining the normal range and clinical course of metabolic components.

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