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Title: Noninvasive evaluation of hepatic steatosis and fibrosis in OSA patients at diagnosis

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Body: In morbidly obese patients, non-alcoholic fatty liver disease (NAFLD) frequently occurs in patients with obstructive sleep apnea (OSA) compared to patients without OSA, and OSA may play a role in the pathogenesis of steatohepatitis. We non-invasively assessed hepatic steatosis (ultrasound) and fibrosis (Fibroscan elastometry) in 20 consecutive patients (mean age±SD: 48±11 yr; BMI: 34.9±5.9 kg/m²; 4 women) with newly diagnosed OSA and no history or serologic evidence of hepatic disease. Inclusion criteria were: alcohol consumption <30 g/die, no use of statins or other lipid-lowering drugs. Patients underwent nocturnal 8-channel monitoring, venous blood sampling (hepatic function tests, fasting blood insulin and glucose, serum lipids), hepatic ultrasound evaluation, and Fibroscan elastometry. Severe OSA was found in most patients (mean AHI±SD 52±22 events/h; mean nocturnal SaO2 90.7±3.8%; Epworth Sleepiness Scale score 12.7±4.9). Twelve patients showed the metabolic syndrome (MetS, NCEP-ATP III). Three patients showed increased serum ALT (>40 U.I.); they were significantly younger (age 36.7±1.5 vs. 50.3±11.1 yr) and more obese (BMI 40.9±8.2 vs 33.8±5.0 kg/m²) than the rest of the sample. Hepatic steatosis (n=19) was mild in 4 patients, moderate in 1, and severe in 14; all patients with increased ALT showed severe steatosis. Severe steatosis occcured in most patients with MetS and tended to be associated with severe OSA. Fibroscan elastometry (n=14) gave an average value of 6.2±2.3 (normal <5, fibrosis >12). Therefore, noninvasive evaluation revealed a trend for hepatic steatosis to be associated with severe OSA and obesity, while hepatic fibrosis appeared absent or mild in our patients.