Utility of abdominal ultrasound for diagnosis of hepatic steatosis in patients with morbid obesity

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Dear Editor,

Metabolic dysfunction-associated fatty liver disease is the most prevalent liver disease in our environment. The gold standard for diagnosis continues to be liver biopsy, although since it’s an invasive test, the role of other easy-to-use test like non-invasive test (NITs) or abdominal ultrasound is becoming increasingly important. (1,2)

In morbid obesity patients, NITs like NFS to predict steatosis do not seem to be accurate since they have not been designed in this population and also include BMI or waist circumference in their formulas (3)

Obesity is a limitation for ultrasound assessment. In published series of morbidly obese patients, ultrasound has a sensitivity of 49%-64.9% and a specificity of 70%-90.9% to predict steatosis (4,5)

We present the results on the diagnostic utility of ultrasound for the detection of steatosis in the population of morbidly obese patients who underwent bariatric surgery from 2004 to 2019 in our centre.
The presence of hepatic steatosis in the abdominal ultrasound performed before the intervention, as part of the preoperative study, was compared with the findings of the liver biopsy performed during the intervention, classified from 0 to 3 by the NAFLD Activity Score.

Data from 219 patients were analysed, 71.8% of whom were women. The mean age was 43.4 years (Standard deviation – SD 10.2); 23.6% were diagnosed with DM and 35.6% with hypertension. The mean BMI was 40.0 kg/m2 (SD 5.37). The mean GOT was 22.4 IU/L (DS 10.1) and GPT 31.8IU/L (SD21.1). Table 1 shows the number of patients with or without steatosis on ultrasound according to the degree of steatosis on biopsy.

Ultrasound to detect more than 5% of liver fat was found to have a sensitivity of 74.9%, specificity of 34.1%, PPV of 89.7% and NPV of 39.7%. To detect more than 33% of liver fat, it was found to have a sensitivity of 82.1%, specificity of 44%, PPV 47.3% and NPV of 79.5%.

In morbidly obese patients, therefore, ultrasound continues to be a useful technique in the detection of hepatic steatosis, increasing its diagnostic yield in patients with a higher degree of steatosis in liver biopsy.

References

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May 1;14(5):635–7.

<table>
<thead>
<tr>
<th>Abdominal ultrasound steatosis</th>
<th>Degree of steatosis on biopsy</th>
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<tr>
<td></td>
<td>0 (&lt; 5%)</td>
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<tr>
<td>No</td>
<td>29 (65.9%)</td>
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<tr>
<td>Yes</td>
<td>15 (34.1%)</td>
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<td>44</td>
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Table 1: Patients with steatosis on abdominal ultrasound and liver biopsy