

Letter to Editor

Noninvasive evaluation of nonalcoholic steatohepatitis (NASH)

Sir

Non-alcoholic fatty liver disease (NAFLD) encompasses a wide spectrum of conditions, ranging from a simple fatty liver to non-alcoholic steatohepatitis (NASH) with or without fibrosis, to cirrhosis and its complications (1). It is important to distinguish NASH from simple fatty liver because NASH patients are in greater risk of developing cirrhosis, liver failure and hepatocellular carcinoma (2). At the present time, the gold standard for determining severity and morphology of fatty liver is liver biopsy (3). Although liver biopsy determines liver damage, liver structure and inflammation process, this technique is invasive and to somehow life threatening, so it cannot be applied for screening or the early detection of NASH or follow up of the cases. According to these problems it needs to apply simple, valid and non-invasive imaging techniques. The most common simple, non-invasive imaging modality which can be used for NASH detection is ultrasound (US) (1). Previous studies showed that sensitivity of US in NASH increases with increasing degrees of fatty infiltration and decreases when the degree of steatosis is 30% or lower as well as its sensitivity is lower than 40% in morbid obese cases possibly due to technical problems in performing US in such patients (4). Some previous studies showed that grading of hepatic fat content by means of US is subjective and categorization of fat content to mild, moderate and severe is based on visual assessment of the operator (5).

This study was conducted to determine the diagnostic value of ultrasonography (US) in the detection of NASH in thirty nine outpatients. They underwent ultrasonography (Hitachi EUB-525) and biopsy of liver. In our study, comparing sonographic findings with biopsy resulted in the calculation of 89% sensitivity, 100% positive predictive value, and 89% accuracy. Previous studies reported the sensitivity of US in the determination of fatty liver disease from 60% to 94% and the specificity from 84% to 95% (6, 7). Van Werven et al. found 65% sensitivity of US in the assessment of hepatic steatosis in patients undergoing liver resection (8). While US is a useful technique for detecting hepatic steatosis, there is a controversy if it can provide a precise estimation of hepatic fat content. Grading of hepatic

fat into mild, moderate and severe steatosis is based on subjective hepatic echogenicity patterns (6). In our study, the most common grade of liver damage was grad II followed by grade III. The most frequent stage in our cases was 0 which determines no fibrosis. According to biopsy findings, liver damages were mild in (28.2%), moderate in (48.7%) and severe in (23.1%). Sonographic findings were normal in (10.3%), mild in (10.3%), moderate in (53.8%) and severe in (25.6%). Many studies showed that despite the utility of these imaging modalities in the diagnosis of diffuse fatty liver, none of these modalities can distinguish between fatty liver versus steatohepatitis. Moreover, diffuse fibrosis is also associated with a hyper echogenic US pattern and cannot be distinguished from fatty liver with accuracy by ultrasonography. Thus, liver biopsy remains the only accurate way to diagnose steatohepatitis (9)

However, ultrasonography as a noninvasive method can be applied in the detection of NASH considering its high sensitivity and positive predictive value.

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