

4th International Conference on

HEPATOLOGY

April 27-28, 2017 Dubai, UAE

Correlation between ultrasound and histologic findings of fatty liver changes among morbidly obese patients**Abdel Rahman Abdulla Al Manasra**

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Background & Aim: Non-alcoholic fatty liver disease (NAFLD) is highly prevalent in obese patients and the commonest cause of liver disease in western countries. Although liver biopsy is essential for diagnosis, ultrasound may predict its presence. We aim to evaluate sensitivity, specificity and predictive value of ultrasound in diagnosing NAFLD's patterns among morbidly obese patients.

Methods: 45 morbidly obese patients submitted to sleeve gastrectomy were prospectively studied. They underwent true cut liver biopsy during the surgery. Classification of histological patterns was based on the NIH-sponsored NASH Clinical Research Network NAFLD Activity Score (NAS). Prior to surgery, patients had an assessment for fatty liver changes by ultrasound (5 grades). The findings from histology (being the gold standard test) and ultrasound (being the test in question) were compared.

Results: 71% of patients were females (32/45). The mean age was 35 (range: 17-58) and the mean BMI was 43 (range: 35-52). The prevalence of NAFLD histologically was 91.8%. 19/45 patients (39%) had non-alcoholic steatohepatitis (NASH) on histology. Ultrasound's sensitivity, specificity and positive predictive value in diagnosing either NAFLD or NAS were 50%, 85% and 25%; respectively. While its sensitivity, specificity and positive predictive value in diagnosing NASH were 28%, 100% and 100%; respectively. There was significant correlation between ultrasound grades and each of steatosis histologic grades ($P<0.001$), NAS (score) ($P<0.001$) and the presence of NASH ($P<0.001$).

Conclusion: NAFLD has a very high prevalence among morbidly obese patients. Assessment by ultrasound showed an absolute positive predictive value (100%) for NASH. This supports its routine use as a low-cost, non-invasive diagnostic tool for this co-morbidity in morbidly obese patients. The frequently reported low sensitivity of ultrasound may be attributed to technical difficulties inherited by the body habitus of morbidly obese patients. Liver ultrasound may contribute to identify obese patient's candidate for bariatric surgery.

Biography

Abdel Rahman Abdulla Al Manasra, MD, has completed his graduation in 2005 from Jordan University of Science and Technology, Irbid, Jordan with Bachelor's in Medicine and Surgery. Later, he obtained a higher specialization degree in General Surgery from same university after 5 years of residency training at King Abdullah University Hospital. In 2013, he graduated from the Medical University of South Carolina and became an American Society of Transplant Surgeons' (ASTS) Certified Abdominal Multi Organ Transplant Surgeon. This was followed by a one year of specialized fellowship training in pediatric abdominal transplant surgery. Since 2014, he has been working as a Consultant Abdominal Transplant and Hepatobiliary Surgeon at King Abdullah University Hospital, as well as an Assistant Professor of Surgery at Faculty of Medicine, Jordan University of Science and Technology.

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