

Probe position may change results in liver stiffness measurements in transient elastography

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A major clinical challenge is to find the best method to evaluate and to manage the increasing numbers of patients with chronic liver disease. Liver biopsy, due to its risks and limitations, is no longer considered mandatory as the first-line indicator of liver injury, and several markers have been developed as non-invasive alternatives.

The assessment of liver fibrosis by non-invasive techniques, such as biomarkers FibroTest® (FT) and liver stiffness measurement (LSM) by Fibroscan®, is now widely performed in countries where these techniques are available and approved. It is therefore essential to identify factors associated with a variability of the results of the techniques to reduce the risk of false positives or false negatives. There are no published procedures for the most accurate position of the probe in LSM.

A research article recently published on July 21,2009 in the *World Journal of Gastroenterology* addresses this issue. The research team led by Professor Thierry Poynard from the Hepatology Department of the Pitié-Salpêtrière Hospital in Paris, France, found that the applicability of Fibroscan examinations may increase when the probe is placed in a more anterior position. So far, recommendations for Fibroscan examinations derive from a spot vaguely defined as the "[liver biopsy zone](#)" which is in the axillary line in the 8th to 10th intercostal space. The article further investigates possible changes in fibrosis grades due to the different probe

positions.

The mean LSM was significantly lower (0.5 kPa) at the anterior position versus the reference position. This difference was also clinically significant. When using the anterior position instead of the reference position, 7% of patients changed status from advanced fibrosis to non-advanced fibrosis when a cutoff of 7.1 kPa was chosen. The difference of 0.5 kPa is particularly clinically relevant in the zone of 7 kPa to 9 kPa for the risk of a false negative/positive diagnosis of advanced fibrosis; it is less relevant for the diagnosis of cirrhosis as LSM cutoffs are usually recommended at a 12.5 kPa or 14 kPa cutoff with a range to 75 kPa.

Interestingly, the estimated fibrosis scores were compared with FibroTest® and not with liver biopsy in this study. The diagnostic value of LSM and FT has been validated in the most common chronic liver diseases and FT has shown as having at least a similar prognostic value to liver biopsy (which is also an imperfect gold-standard) in patients with chronic hepatitis C and B.

Non-invasive techniques will increasingly replace liver biopsy in chronic liver disease because they are easy-to-do and well accepted by patients. This study helps to improve the understanding of possible limitations of transient elastography. Further research will be needed to define advantages and pitfalls of this technique.

More information: Ingiliz P, Chhay KP, Munteanu M, Lebray P, Ngo Y, Roulot D, Benhamou Y, Thabut D, Ratziau V, Poynard T. Applicability and variability of liver stiffness measurements according to probe position. *World J Gastroenterol* 2009; 15(27): 3398-3404, www.wjgnet.com/1007-9327/15/3398.asp

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