

# Detecting Liver Fibrosis: a Non-invasive Era

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Liver fibrosis is a dynamic process, which occurs due to exposures of various substances or organisms that may result in chronic inflammation process in the liver. The exposures may include viral infection, particularly by hepatitis B virus (HBV), hepatitis C virus (HCV) or substances such as alcohol, etc.

Determining the presence or absence of liver fibrosis is a very important issue in order to evaluate deterioration phase of advanced inflammation process in the liver and to decide when to provide appropriate treatment. Liver biopsy is the gold standard procedure to identify the severity of fibrosis since it has extra advantage, i.e. its ability to identify other abnormalities in the liver in addition to fibrosis problem. However, as a main diagnostic procedure, liver biopsy is not a perfect major option. Drawbacks often mentioned include problems on sampling error, inability to demonstrate liver fibrosis globally and complication risk at biopsy procedure, which causes reluctance to perform biopsy; however, the risk of complication rarely occurs in experienced hand.

Further developments demonstrate that various techniques of detecting liver fibrosis through non-invasive methods have emerged, i.e. by performing examination of transient elastography, by using various scoring system such as aspartate aminotransferase to platelet ratio index (APRI), Hepascore, Fib-4 and blood test using FibroTest, which actually aim to detect the presence or absence of significant liver fibrosis with high accuracy level.

By using such techniques, the determination of liver fibrosis severity does not have to be performed using liver biopsy and it can be used by general physician; however, the techniques are still not able to determine when treatment of chronic hepatitis B and C should be given.

This issue contains a study conducted by Tarigan et al, about utilization of parameters for detecting non-invasive fibrosis in the form of a scoring system, which is called as the S-index. The index has enriched the numerous available scoring systems, which are the blood-based

markers, with at least of 12 non-invasive methods for detecting liver fibrosis based on the examinations of blood marker.<sup>1</sup> Previous study on the S-index conducted by Zhou et al in 386 patients who were hepatitis B carrier and compared to liver biopsy demonstrated a high level of accuracy, sensitivity and specificity over 80% to detect significant liver fibrosis and the index is superior than the other six scoring systems.<sup>2</sup>

A study of S-index conducted by Tarigan et al had smaller sample size (40 patients) than the study conducted by Zhou et al and used FibroScan as the control, which is not the gold standard of procedure in the context of research, which usually make a comparison to liver biopsy.<sup>2</sup>

When previous studies were taken into consideration, FibroScan was also only able to detect moderate and advanced liver fibrosis.<sup>3</sup> Body mass index, which has frequently become the confounding factor of FibroScan, was also not mentioned in this study. However, the study results show a high level of accuracy for S-index in the case of hepatitis B infection and chronic hepatitis C, which was made into one sample.

Those preliminary studies should be appreciated for guiding further measures in order to discover the standard method on detecting liver fibrosis in Indonesian population and therefore, further studies with large sample size are necessary and improvements of should be made on drawbacks of the available studies.

## REFERENCES

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