A clinical prediction model predicted absence of significant fibrosis in chronic hepatitis B


Main results

26% of patients had significant fibrosis. 12 variables were associated with significant fibrosis in univariate analysis: age, body mass index (BMI), serum albumin, total bilirubin, alkaline phosphatase, aspartate transaminase (AST), ALT/AST ratio, α fetoprotein, platelet count, international normalised ratio, HBeAG positivity, and HBV-DNA. 2 sensitive models for predicting fibrosis had comparable AUROCcs, and 1 model was preferred because it had only 4 variables (BMI, bilirubin, albumin, and platelet count). The table shows the diagnostic performance of this model. The model is described on the Evidence-Based Medicine website (www.evidence-basedmedicine.com).

Conclusions

In patients with chronic hepatitis B, a clinical prediction model comprising body mass index and 3 routine laboratory tests (bilirubin, albumin, and platelet count) was accurate for predicting absence of significant fibrosis.

Commentary

Non-invasive assessment of fibrosis is a hot topic: patients hate liver biopsies, liver biopsies have their complications, and they are costly. Therefore, replacement of this invasive procedure by a surrogate fibrosis marker is highly desirable. Essentially, 3 different types of surrogate markers are currently being evaluated: (1) scores derived by logistic regression analysis from a variety of clinical and laboratory parameters based on features associated with advanced liver disease, such as platelet count, albumin, bilirubin, or fibrogenic factors including insulin resistance, or BMI; (2) fibrosis markers sensu strictu measuring part of the extracellular matrix in blood (eg, different (pro)collagens, hyaluronate, laminin, and many others); and (3) probing the liver’s elasticity with ultrasonography (Fibroscan). Hui et al settled for the first approach and identified BMI, platelet count, bilirubin, and albumin as strong predictors of fibrosis; like so many scores and fibrosis markers, the negative predictive value was strong (0.92) while the positive predictive value was weak (0.41 to 0.63).

I do not share the authors’ belief that a score has to be sought for each and every liver disease; this is reinforced by the parameters selected for their analysis: most of them appear in other scores derived from patients with hepatitis C or populations with cirrhosis of any aetiology. What is needed now is a well powered, prospective study comparing the many proposed scores. Hopefully, physicians will then decide on the best one and use it in clinical decision making. Will such a fibrosis score replace liver biopsy for good? I do not believe so since liver biopsy gives more information than just extent of fibrosis. But a reliable score will certainly reduce the frequency with which such a procedure is performed—and this already will earn us our patients’ gratitude.

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