1 What did this study explore?

Answer：This study aims to illustrate the relationship between liver and spleen shear wave velocity of liver cirrhosispatients with portal hypertension, and assess the value of liver and spleen shear wave velocity in predicting the prognosis of patients with portal hypertension.

2 How did the authors perform all experiments?

Answer： The acoustic radiation force impulse imaging(ARFI) was applied to detect the portal hypertension. Sixty-seven patients with liver cirrhosis diagnosed as portal hypertension by hepatic venous pressure gradient were enrolled into this study. The baseline information of these patients were recorded. They were followed-up at 20 mo after treatment, and liver and spleen shear wave velocity were measured by acoustic radiation force impulse (ARFI) at the 1st wk, 3rd mo and 9th mo after treatment and were divided into favorable and unfavorable group according to their prognosis. The value of the SWV of the liver and spleen of the two group were analyzed and compared by statistic methods.Then, the predictive value of liver and spleen shear wave velocity for the prognosis of patients were evaluated and explored.

3 How did the authors process all experimental data?

Answer: Analysis was performed by SPSS 19.0. Shear wave velocity values, the values of serological indicators ALB, AST and ALT and other measurement data were expressed as MEAN±SD. The unfavorable prognosis rate of patients and follow-up results were expressed via survival curve and pie chart, respectively. The variationof shear wave velocity valuesbetween two groups at different weeks after treatment were compared by repeated measures analysis of variance. Age, gender, prognosis results, ALT, ALB and AST shear wave velocity values and other possible influences were included in the Cox's proportional hazard regression model analysis. ROC curve was used to compare AUCof the indicators that have statistically significant differences between two groups.Cox's proportional hazard regression model analysis was applied to evaluate the effect of liver and spleen hardness on the prognosis of liver.The predicting efficiency for portal hypertension was evaluated by ROC curves.

4 How did the authors deal with the pre-study hypothesis?

Answer: We speculated that the SWV is a predictor for portal hypertension. The hardness of the liver and spleen can be measured quantitively by ARFI imaging. The unfavorable prognosis liver cirrhosisgroup tend to have higher rate of portal hypertension as well as higher liver and spleen harshness.

5 What are the novel findings of this study?

Answer：Spleen hardness at the 3rd mo, and liver and spleen shear wave velocity at the 9th mo could be used to evaluate the prognosis of patients with portal hypertension, which is expected to be applied as an indicator of predicting the prognosis of patients with portal hypertension.