# 在慢性B型肝炎患者使用脾臟腫大來診斷肝硬化不是適當的非侵入性指標 Splenomegaly should not be an adequate non-invasive surrogate in diagnosis of liver cirrhosis in patients with chronic hepatitis B

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Background: Oral antiviral agents have been proved to improve the prognosis of patients with chronic hepatitis B (CHB) related liver cirrhosis (LC). In Taiwan, the National Health Insurance reimburses lifelong antiviral agents to cirrhotic patients with HBV DNA higher than 2000 IU/ml. However, the requirement of image diagnosis of LC is splenomegaly. The aim of this study is to evaluate the validity of splenomegaly in diagnosis of LC in patients with CHB.
Materials and Methods: A total of 743 consecutive patients with CHB with available reports of liver biopsy were enrolled. All of them underwent liver biopsy to meet reimbursement criteria after October 2003. Their Metavir Fibrosis score (0~4) were abstracted. F4 means LC. The splenic indices were measured retrospectively from the ultrasonographic pictures mostly close to the biopsy day. The splenic index is “a” (from tip to hilar in cm) x ”b” (vertical line to “a”, from hilar to splenic margin in cm). Splenomegaly is defined as splenic index ≥20. A total of 684 spleen images were adopted and analyzed as all populations group. In addition, we used four parameters (liver surface, parenchymal texture, intrahepatic vessel and splenomegaly) to prescribe a liver parenchymal condition as the ultrasound cirrhosis score (UCS). UCS has been routinely used in every patient. UCS of 7 was the best cutoff point for the prediction of CHB related LC proposed by Hung et al. Therefore, total of 222 patients whose UCS ≥7 was selected as UCS ≥7 populations group for another analysis.
Result: The prevalence of pathological LC was 26.2% (179/684) in all populations group. The splenic index was significantly but not strongly correlated to fibrosis score (Spearman correlation test, rs = 0.304, p<0.0001; Pearson correlation test, r2 = 0.147, p<0.0001). The area under ROC curve of splenic index in diagnosis of LC was 72.3%. Using 20 as a cutoff, the sensitivity, specificity and accuracy were 48.6% (87/179), 81.8% (413/505) and 73.1% (500/684), respectively. In this group, the positive and negative predictive values were 48.6% (87/179) and 81.8% (413/505), respectively. Based on ROC curve, the best cutoff of splenic index with sensitivity (70.4%) and specificity (63.4%) should be 17. The prevalence of pathological LC was 64.4% (143/222) in UCS ≥7 populations group. The splenic index was significantly but weakly correlated to fibrosis score (Spearman correlation test, rs = 0.269, p<0.0001; Pearson correlation test, r2 = 0.064, p<0.0001). The area under ROC curve of splenic index in diagnosis of LC was 68.2%. Using 20 as a cutoff, the sensitivity, specificity and accuracy were 53.1% (76/143), 74.6% (59/79) and 60.8% (135/222), respectively. In this group, the positive and negative predictive values were 79.2% (76/96) and 53.2% (59/126), respectively. Based on ROC curve, the best cutoff of splenic index with sensitivity (65.7%) and specificity (64.6%) should be 18.
Conclusions: In Taiwan, using splenomegaly to be a requisite of the reimbursement criteria of

oral antiviral agents to CHB related LC patients might be unreasonable. Splenomegaly should not be an adequate non-invasive surrogate in diagnosis of LC in patients with CHB.