Increased Risk of Cirrhosis and Its Decompensation in Chronic Hepatitis B with New Onset Hypertension

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Background/Objective
The effect of systemic hypertension on development of cirrhosis with portal hypertension remains unclear. We aimed to determine whether hypertension increases the risk of cirrhosis and its decompensation in chronic hepatitis B patients.

Method
A retrospective population based cohort study by using Taiwanese National Health Insurance Research Database from 1997 to 2009. 14,523 chronic hepatitis B patients were identified by the 9th edition of International Classification of Diseases. Chronic hepatitis B patients with new onset hypertension (n=1,766) were compared with age-, gender-, and hypertension diagnosis date- matched non-hypertension patients (n=1,755). New onset hypertension was defined as a diagnosis of hypertension in the years 1999-2006 but not in 1997-1998. Chronic hepatitis B patients with new onset hypertension were followed-up from the hypertension diagnosis date and the non-hypertension controls from the hypertension diagnosis date of matched cases until the development of cirrhosis or its decompensation, withdrawal from insurance, or December 2009.

Result
Kaplan-Meier survival analysis showed a significant higher cumulative incidence of cirrhosis (relative risk [RR]=2.04; 95% confidence interval [CI]=1.64-2.55; $p<0.01$) and decompensated cirrhosis (RR=6.95; 95% CI=3.47-13.95; $p<0.01$) in patients with new onset hypertension compared with those without hypertension. After adjusted for age, gender, comorbidity index, hyperlipidemia, diabetes, and chronic hepatitis B treatment by Cox proportional hazard model, hypertension was still an independent predictor for cirrhosis (hazard ratio [HR]=2.50; 95% CI=1.95-3.19; $p<0.01$) and its decompensation (HR=8.38; 95% CI=4.08-17.19; $p<0.01$).

Conclusion
Chronic hepatitis B patients who develop hypertension are at an increased risk of liver cirrhosis and its decompensation over time.