S18 - Impact of Antiviral Therapy on Treatment Options and Outcome in Hepatitis B Virus Related Hepatocellular Carcinoma

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Introduction and Project Objectives: Tenofovir disoproxil fumarate (TDF) is a potent antiviral agent. We first aimed to investigate the effectiveness of TDF therapy in chronic hepatitis B (CHB) patients with cirrhosis. Furthermore, we evaluated the risk of hepatocellular carcinoma (HCC) after hepatitis B surface antigen (HBsAg) seroclearance and the impact of gender on HCC.

Methods: In the first study, we studied 808 TDF-treated and 291 untreated CHB cirrhotic patients from 3 centres (Hong Kong, Korea, US). TDF cohort included consecutive patients from three tertiary centres who received TDF 300mg/day for ≥12 months. Control cohort included historical untreated patients. In the second study, all chronic hepatitis B patients under medical care in Hospital Authority, Hong Kong who had cleared HBsAg between January 2000 and August 2016 were identified.

Results: In the first study, at 5-years follow-up, there were 72 decompensating events, 113 HCCs and 41 deaths from both groups combined. 5-year cumulative probabilities in TDF-treated vs. control cohorts were: 8% vs. 22% for decompensation (P=0.002), 10% vs. 15% for HCC (P=0.05) and 1% vs. 12% for death (P<0.001). On multivariate Cox regression, TDF treatment was independently associated with reduced risks of decompensation (hazard ratio [HR] 0.41, P=0.046), HCC (HR 0.43, P=0.001) and death (HR 0.12, P<0.001). In the second study, a total of 4,568 patients with HBsAg seroclearance were identified; 793 (17.4%) were treated by nucleos(t)ide analogues and 60 (1.3%) had received interferon treatment. At a median (interquartile range) follow-up of 3.4 (1.5-5.0)years, 54 patients developed HCC; cumulative incidences of HCC at 1, 3 and 5 years were 0.9%, 1.3% and 1.5%, respectively. Age above 50 years (adjusted hazard ratio 4.31, 95% confidence interval 1.72-10.84; p=0.002) and male gender (2.47, 1.24-4.91; p=0.01) were two independent risk factors of HCC. Female patients aged ≤50 years (n=545) had zero risk of HCC within 5 years of follow-up. Male patients aged ≤50 years (n=769), female patients aged >50 years (n=1,149) and male patients aged >50 years (n=2,105) had a 5-year cumulative incidence of HCC 0.7%, 1.0% and 2.5%, respectively. Similar findings were observed in patients with spontaneous and antiviral treatment-induced HBsAg seroclearance.

Conclusions: Among patients with cirrhosis, TDF treatment reduces risks of hepatic decompensation and HCC by more than 2-fold and death by almost 90% at 5 years. Female patients aged 50 years or below have zero risk of HCC after HBsAg seroclearance, whereas female patients aged above 50 years and all male patients are still at risk of HCC.

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