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Similar risk of kidney function decline between tenofovir alafenamide and besifovir dipivoxil maleate in chronic hepatitis B

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Objectives: Although tenofovir alafenamide (TAF) and besifovir dipivoxil maleate (BSV) are potent antiviral agents in the treatment of chronic hepatitis B (CHB) infection. This study compared the risk of kidney function decline among patients with treatment-naïve CHB treated with TAF or BSV.

Methods: This multicenter, retrospective, longitudinal cohort study included 556 patients with treatment-naïve CHB treated with TAF ($n = 366$) or BSV ($n = 190$) between November 2017 and August 2021. The primary outcome was chronic kidney disease (CKD) progression, defined as an increase in CKD stage by at least one stage for at least three consecutive months.

Results: 1:1 propensity score matching yielded 154 patients in each treatment group. The mean estimated glomerular filtration rate (eGFR) was 100.4 vs. 100.3 mL/min/1.73m² in the TAF and BSV groups, respectively. A total of 25 patients developed a progression in CKD stage ≥ 1 , of which 13 and 12 patients were from the TAF and BSV treated groups, respectively (3.1 vs. 3.3 per 1,000 person-years; $P = 0.751$). The unadjusted hazard ratio for risk of progression in CKD stage ≥ 1 of the BSV group (vs. the TAF group) was 1.13 (95% confidence interval, 0.50-2.58; $P = 0.758$). This association persisted even after adjusting for potential confounders. Virological, serological, and biochemical responses were also similar between the two treatment groups (all $P > 0.05$).

Conclusions: TAF and BSV showed similar risk of kidney function decline in patients with treatment-naïve CHB. Further prospective randomized studies are warranted for validation.