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### Tenofovir renal toxicity in HIV-infected patients

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Tenofovir disoproxil fumarate (TDF) is a nucleotide analogue widely recommended in international HIV treatment guidelines. The association of TDF and renal dysfunction has remained an area of interest.

We conducted a retrospective review of all patients on TDF for 2.5 years in our institution (Tan Tock Seng Hospital), and evaluated their renal function. Absolute change of creatinine clearance (CLCr) using Cockcroft-Gault equation from baseline was calculated at 6, 12, 18 and 24 months. Mixed-effects models were used to analyze predictors of change in log transformed CLCr from baseline.

Overall, 226 patients were included in the study. Ninety percent were male. The median age was 46 yrs old (23-82), median weight was 60 kg (IQR 53.75-68), median CD4 count was 127 cells/mm<sup>3</sup> (IQR 38-258) and median CLCr 82.7 mL/min (IQR 71.4-101.7) on initiation of TDF. After excluding patients without baseline CLCr, 165 patients were left in the mixed effects analyses.

At baseline, the adjusted CLCr was 80.7 ml/min; this was 0.3% lower with every 1 year higher age and 0.1% higher with every 1 kg higher weight. After adjustment, there was a 3.0% (95% CI -0.8% to 6.6%) CLCr decline per year on average. This decline was 0.86% (95% CI 0.40% to 1.32%) steeper with 1 year age increase, 0.3% (95% CI 0.09 to 0.51%) steeper with 1 unit increase in baseline CLCr and 0.62% (95% CI 0.26 to 0.99%) gentler with 1 kg increase in weight. There was no association with CD4 count, age, NNRTI or PI, existing co-morbidities.

Treatment with TDF was associated with a gentle decline in renal function over 24 months. The decline was greater in older patients, patients with higher baseline CLCr and patients with lower body weight. The results underscore the need for monitoring of CLCr patients receiving TDF.

#### Biography

Dr Lawrence Lee Soon-U is an assistant professor in clinical pharmacologist and infectious diseases physician at the National University of Singapore and Tan Tock Seng Hospital / Institute of Infectious Diseases and Epidemiology. He graduated from medical school with honours at the University of New South Wales, Australia, and then completed infectious diseases training in Singapore. He subsequently completed his PhD in Clinical Investigation with Phi Beta Kappa honors, and post-doctoral fellowship in Clinical Pharmacology at the John Hopkins University. He has published more than 35 papers in reputed journals and has been serving as an editorial board member.

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