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Clinical Science

Renal function with use of a tenofovir-containing initial antiretroviral regimen

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Abstract

Objectives: To determine whether tenofovir disoproxil fumarate (TDF) is associated with renal dysfunction when used as part of an initial antiretroviral regimen and to assess the effect of ritonavir-boosted protease inhibitor (PI/r) coadministration on renal function in TDF-treated patients.

Design: Analysis from a prospective observational cohort.

Methods: We compared all antiretroviral-naive patients with an estimated glomerular filtration rate (eGFR) of more than 50 ml/min per 1.73 m² (modification of diet in renal disease equation) who initiated either TDF (*n* = 201) or any alternative nucleoside reverse transcriptase inhibitor (NRTI) (*n* = 231) after 1 January 2002.

Results: Patients taking both TDF and NRTIs experienced an initial decline in eGFR during the first 180 days of therapy, but eGFR stabilized between 180 and 720 days. There was no difference between TDF and NRTI use in 25 or 50% decline in eGFR at 1 or 2 years or in change in eGFR at 6, 12, or 24 months. Those taking TDF and a PI/r had a greater median decline in eGFR than those taking TDF and a non-NRTI at 6 months (*P* = 0.01), with trends at 12 (*P* = 0.08) and 24 months (*P* = 0.08). There was no difference in median GFR decline between those on an NRTI and PI/r vs. an NRTI and non-NRTI.

Conclusion: Our data are consistent with results of clinical trials, which have shown no evidence of renal toxicity when TDF is used as part of an initial regimen. Our results support the use of TDF as a component of the initial antiretroviral regimen, and suggest that the eGFR should be monitored more closely when TDF is used with a PI/r.

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