PROXIMAL RENAL TUBULOPATHY RELATED TO TAF (TENOFOVIR ALAFENAMIDE) – A CASE REPORT

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Background:

The development of TAF has been a major step forward as a backbone medication for HIV treatment and demonstrates greatly reduced renal toxicity compared to tenofovir disoproxil fumarate (TDF). However, there have been a handful of case reports worldwide demonstrating possible renal toxicity. These cases have been disputed - the majority of the patients had significant comorbidities increasing their predisposition to renal complications.

We describe a case where the evidence suggests TAF was the likely cause of a proximal renal tubulopathy which resolved on the cessation of TAF.

Approach:

A 55-year-old Caucasian male with longstanding HIV (diagnosed in 1988) presented with worsening renal function associated with hypophosphatemia, aminoaciduria, minor proteinuria and albuminuria. His original ARV regimen of Raltegravir, Etravirine and Maraviroc had been changed to Descovy (TAF/FTC 10/200mg), Dolutegravir 50mg and Prezcobix (Darunavir 800mg/Cobicistat 150mg) 6 months previously, mainly to reduce his pill burden. On reviewing his new regimen, it was concluded that TAF was the most likely agent to be causing proximal renal tubulopathy specifically.

The TAF was removed from his regimen and despite his complex resistance profile it was decided to not add an additional medication but to closely monitor his renal function and viral load.

In November 2020 he was switched to Dovato (Dolutegravir/3TC) with Prezcobix to reduce his pill burden to 2 tablets. He has remained virologically suppressed with stable renal function, now at 18 months since the cessation of TAF.

Outcomes:

Follow up results at one and two months following the cessation of TAF showed a normalizing of his phosphate, reduction in his aminoaciduria and a small improvement in his eGFR close to his original baseline. His viral load remained suppressed.

Significance:

We, and our renal physician colleagues, have concluded that the most likely explanation is that the TAF did contribute to this patient developing a reversible proximal renal tubulopathy. The presence of a boosted protease inhibitor in his regimen would have increased his level of tenofovir exposure.

TAF is clearly a safer NRTI than TDF. However, in complicated patients with long standing HIV, physicians need to remain mindful that even with significantly lower levels of renal tubule tenofovir exposure - there remains the possibility of renal toxicity.

Disclosure of Interest Statement

No conflicts of interest to declare for the purpose of this case report.