

Renal disease in HIV; early experience with Tenofovir Alafenamide in Worcestershire, UK

Birkhamshaw E¹, Bhaduri S¹, Leese R¹, Roberts M¹

1. Worcestershire Acute Hospitals NHS Trust

INTRODUCTION

- With an aging population of people living with HIV in the UK, comorbidities of chronic kidney disease (CKD), heart disease and osteoporosis become increasingly important.
- Tenofovir Alafenamide (TAF) has been demonstrated to carry a lower risk of progression of chronic kidney disease when compared to Tenofovir Disoproxil Fumarate (TDF).
- Conversion of TAF to active Tenofovir is a predominantly intra-cellular process; this results in lower plasma concentrations, which is the main predictor for toxicity.
- Since 2016 NHS England has approved the use of TAF for patients with CKD stage 3, or stages 1 and 2 where additional risk factors for renal disease exist.¹
- We present our experience with TAF in an ageing cohort in Worcestershire NHS Trust, including audit of compliance with current guidelines.

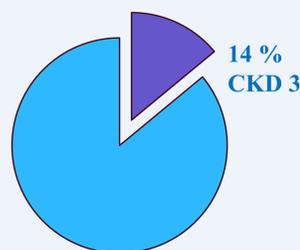
METHODS

- A database of 257 patients managed by the Worcestershire HIV service was analysed.
- Patients treated with TAF-containing regimes, and all patients with CKD stage 3 were identified.
- The cohort was assessed for features of existing renal disease and factors including cardiovascular risk (Qrisk), diabetes and hypertension.
- Screening for renal disease was through urine dipstick, creatinine and eGFR measurement, with urine protein:creatinine ratio for patients at high risk.
- Progression, stabilisation or improvement of CKD after commencing TAF was identified, and the compliance of our service with NHSE standards was analysed.

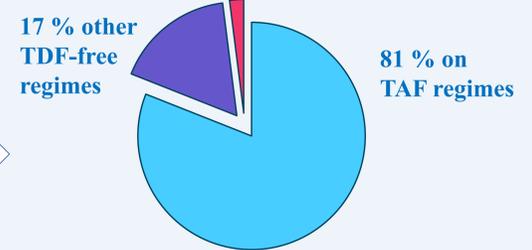
Current criteria for TAF-containing regimes

- Patients with confirmed osteoporosis on DEXA or high risk on FRAX scoring
- Established renal disease;
 - CKD stage 3
 - CKD stage 1 or 2 plus;
 - A3 proteinuria
- Renal disease approaching the above thresholds;
 - CKD 1 or 2 with A2 proteinuria plus other risk factors;
 - Older age; diabetes; cardiovascular risk; hypertension; nephrotoxic meds
 - Where Abacavir is contraindicated (due to HLA status or cardiovascular risk)
- MDT discussion essential for all switches to TAF-containing regimes

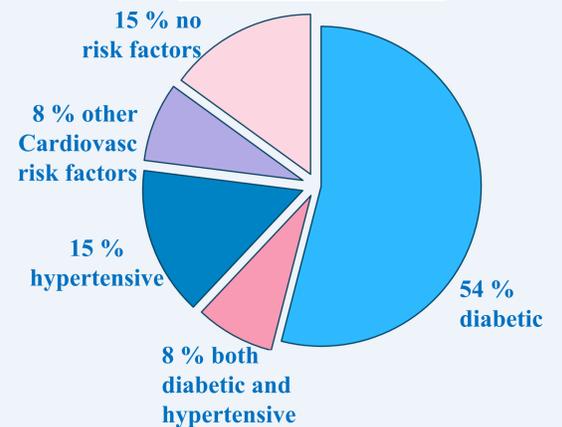
Worcester cohort
257 patients



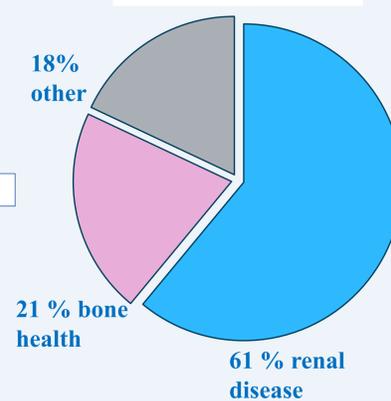
Patients with CKD stage 3



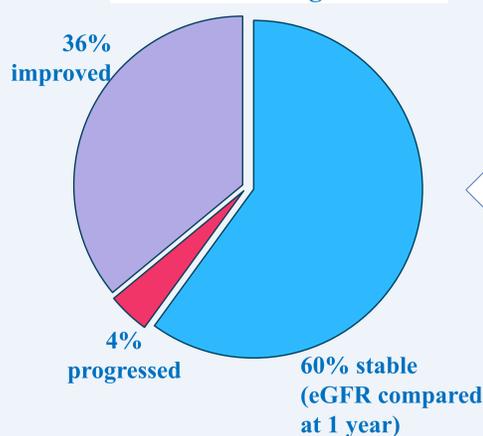
Comorbidities in TAF cohort



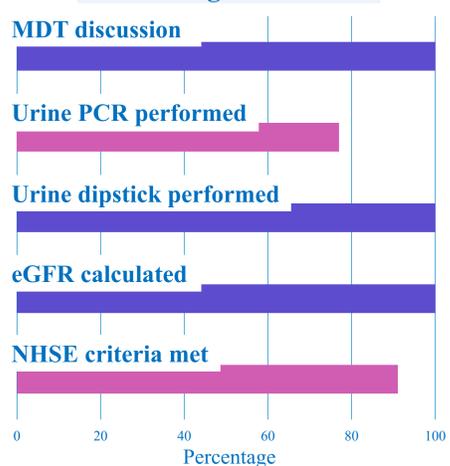
Reason for switch to TAF



Progression of renal disease after switching to TAF



Audit standards for TAF regimes



RESULTS

- 257 patients are managed with antiretroviral therapy by the Worcestershire HIV service (median age 55; 77% male), of whom 43 (17%) are on TAF.
- Of the entire population 14% (36 patients) have CKD stage 3; 81% of these patients are on TAF, 17% are on other TDF-sparing regimes.
- The cohort of patients on TAF have high rates of cardiovascular comorbidities (77% diabetic or hypertensive).
- Kidney disease was the most common reason for switching to TAF, with NHSE criteria being fully met in 91% of cases.
- Progression of CKD occurred in 4% switching to TAF, with improvement in 36% and stabilisation in 60%.
- Median creatinine prior to TAF = 112 and 1 year post TAF = 103 (8% reduction).

CONCLUSIONS

- The Worcestershire HIV service has an aging, highly comorbid cohort, in whom renal disease is common and multifactorial. This will become the norm for UK HIV services in the future.
- In this group TAF is becoming a regularly-used option for 2 reasons;
 1. Direct TDF-related toxicity (progression of CKD on TDF)
 2. Reducing risk of CKD in patients with other factors (diabetes, HTN, CVD)
- In this cohort there is a trend towards stabilisation/improvement in GFR after switching to TAF.
- NHSE criteria are applicable and effective in identifying those with established renal disease.
- However there is an increasingly large cohort of older patients with current eGFR >60, but risk factors for future development of CKD, who may benefit from early TAF-switching.
- Future guidelines & research will need to address whether earlier switching away from TDF confers a benefit to this at-risk group.

Acknowledgements & declarations

- The patients and staff of the Worcestershire HIV service
- The authors have no relevant conflicts of interest or declarations

References

1. NHS England; Clinical commissioning policy: Tenofovir Alafenamide for treatment of HIV 1 in adults and adolescents; February 2017.