Guy's and St Thomas' NHS Foundation Trust

Switching to tenofovir alafenamide fumarate (TAF) in the over 60s: has it made a difference?

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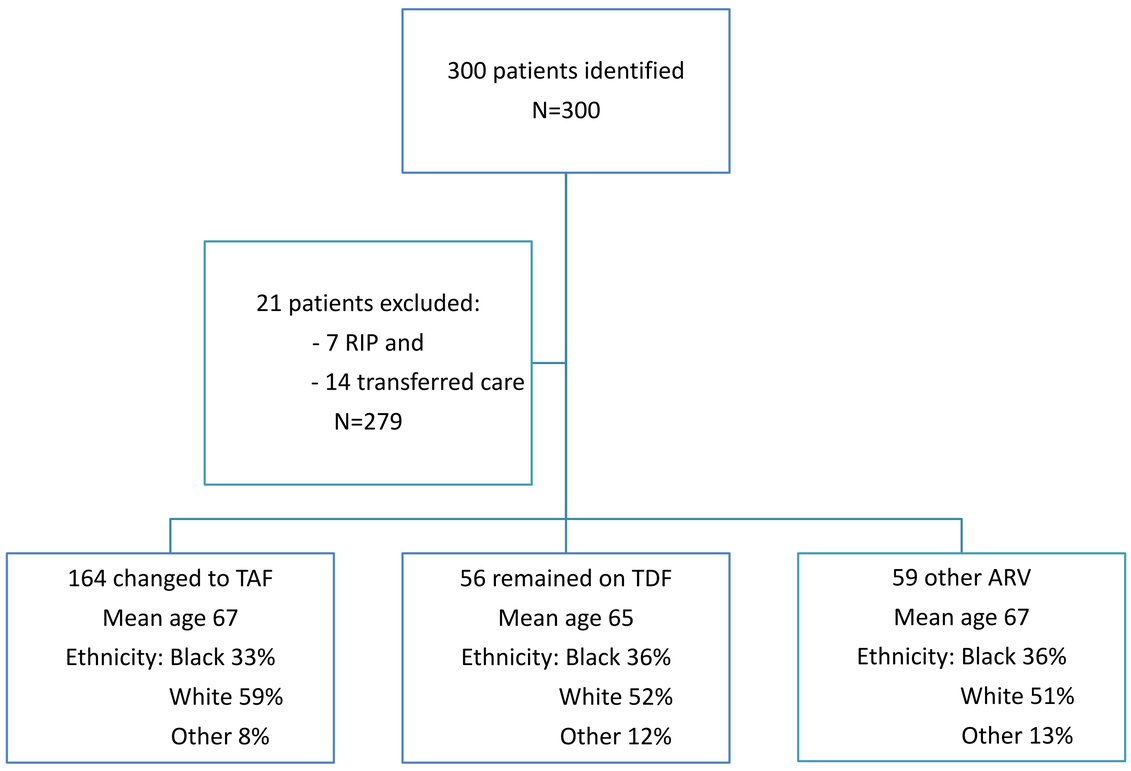
Introduction

- Co-morbidities including osteoporosis, chronic kidney disease (CKD) and cardiovascular disease are an increasing concern in the elderly population of people living with HIV (PLWH).
- The introduction of tenofovir alafenamide fumarate-emtricitabine (FTC-TAF) fixed dose combination provides an alternative nucleoside reverse transcriptase inhibitor (NRTI) backbone for PLWH with multiple co-morbidities. (1,2)
- We assessed the impact on renal markers, lipid profile and bone mineral density in a cohort of PLWH aged over 60 attending clinic, following the introduction of tenofovir alafenamide NHS commissioning guidelines in July 2016. (3)

Methods

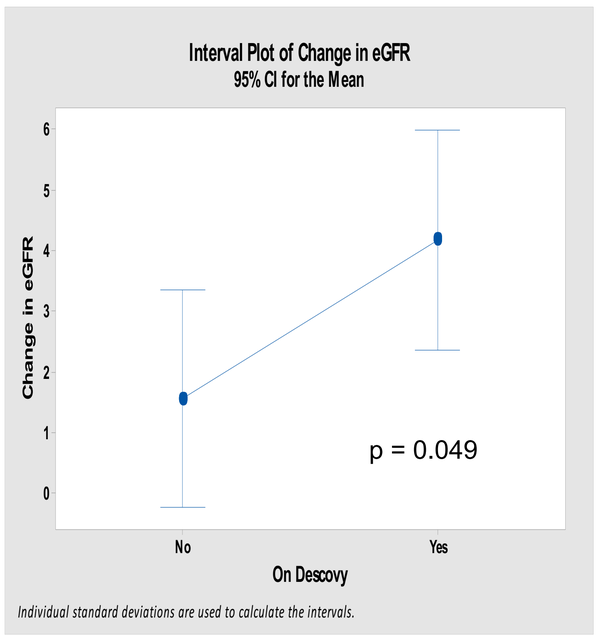
- Patients were identified using a database of PLWH aged over 60 regularly attending one HIV clinic in London in September 2017.
- Notes were reviewed and results including anti-retroviral history, estimated glomerular filtration rate (eGFR) using MDRD4 equation adjusted for ethnicity, urinary protein creatinine ratio (uPCR), lipid profile and bone mineral density (BMD) were collected.
- Analysis was stratified into two groups:
    - Patients who switched from any antiretroviral regime to FTC-TAF based regimes with baseline results taken closest to time of FTC-TAF switch and current results from January 2019
    - Patients on non-FTC-TAF antiretroviral regimes, with baseline results taken from September 2017 to current results in January 2019.
- All analysis was performed using SPSS and Microsoft Excel

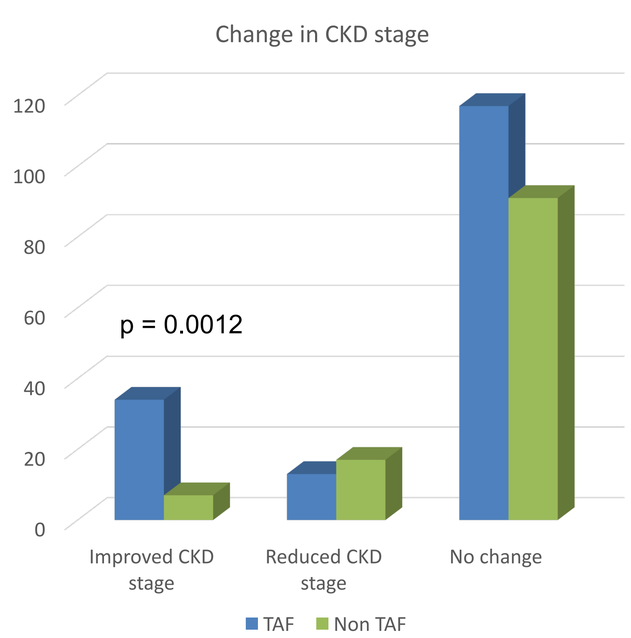
Results



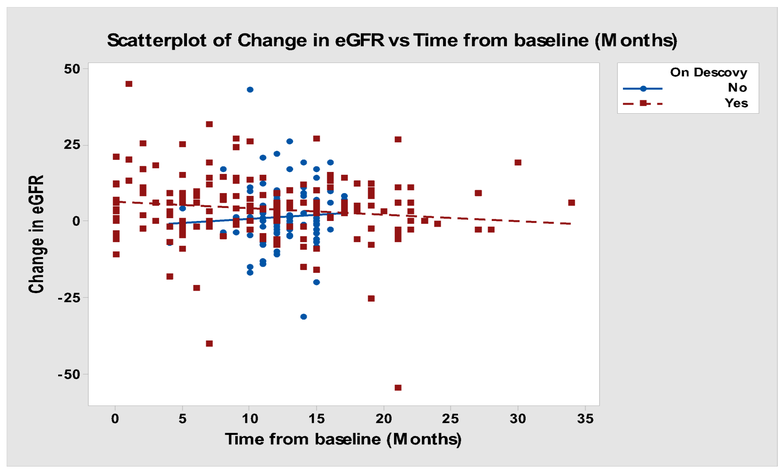
279 patients were included for analysis. Baseline characteristics were similar in each group. Median duration of follow up was 10 months for the FTC-TAF arm and 12 months for the comparator group.

Mean change in eGFR from baseline was higher following switch to FTC-TAF



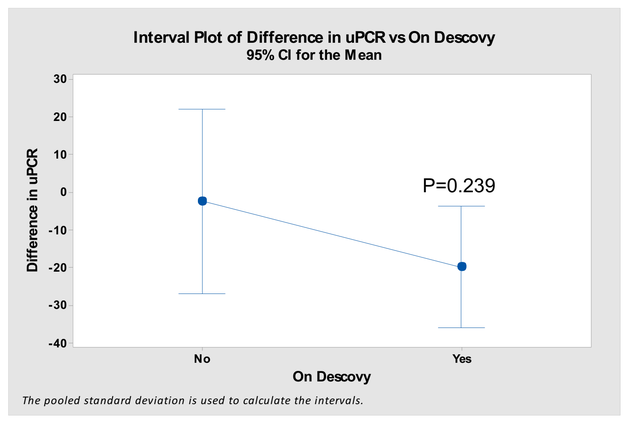


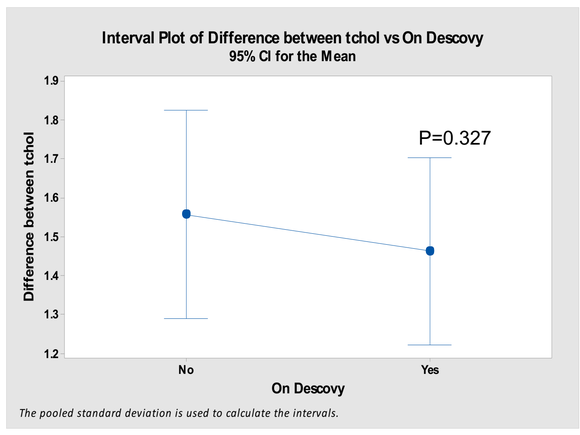
However change in EGFR trended towards baseline overtime.

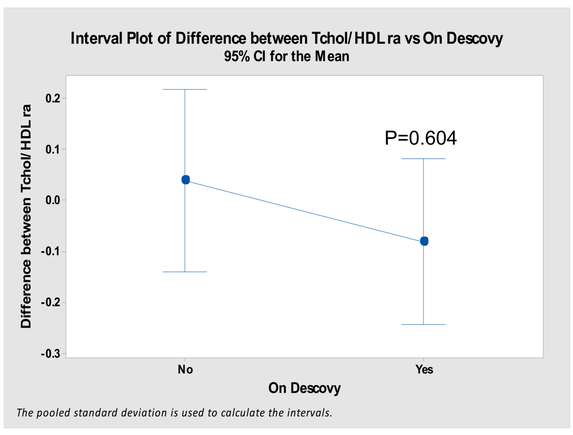


Switching to FTC-TAF was not associated in a significant change in mean uPCR, total cholesterol or total cholesterol/HDL ratio in our cohort of patients.

	Statistical Value	FTC-TAF	Non TAF	P value
Tchol mmol/L	Mean	+0.039	-0.081	P=0.327
Tchol/HDL mmol/L	Mean	+1.46	+1.56	P=0.604
uPCR mg/mmol	Mean	-19.79	+2.31	P=0.239







Switching to FTC-TAF was not associated with a significant difference in BMD in our cohort however the number of patients with repeat DEXA scans was low (30%) therefore longer follow up is required to fully assess the impact of TAF on bone health.

Conclusion

- In PLWH aged over 60 switching to FTC-TAF based regimen resulted in a statistically significant improvement in eGFR which resulted in a significant improvement in CKD stage in our cohort of elderly patients. This data from real world clinical practice appears to mirror that of previous studies.
- eGFR appeared to trend back towards baseline overtime. This could reflect the trend of decline in renal function over time.
- Lipid profile was unchanged over the short follow-up period, and longer follow up is required to assess BMD changes over time.
- Long term follow up is required to assess impact of FTC-TAF but may be beneficial in slowing rate of renal function decline in high-risk groups such as older PLWH.

References:

1. Sax PE, Wohl D, Yin MT et al. Tenofovir alafenamide versus tenofovir disoproxil fumarate, coformulated with elvitegravir, cobicistat, and emtricitabine, for initial treatment of HIV-1 infection: two randomised, double-blind, phase 3, non-inferiority trials. Lancet 2015; 385: 2606-15.
2. Laura N Walti, Julia Steinrücken, Andri Rauch et al. Tenofovir Alafenamide in Multimorbid HIV-Infected Patients With Prior Tenofovir-Associated Renal Toxicity Open Forum Infectious Diseases, Volume 5, Issue 11, November 2018
3. NHS England: 16043/P Clinical Commissioning: Tenofovir Alafenamide for treatment of HIV 1 in adults and adolescents 15 July 2016.