Practical implications of tenofovir toxicity monitoring

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INTRODUCTION

The 2011 BHIVA HIV Monitoring Guidelines recommend regular renal function assessment in patients prescribed tenofovir (TDF) with eGFR and urinary protein creatinine ratio (uPCR). We have a high uptake of ART home delivery in our unit and want to ensure this has not adversely impacted on TDF toxicity monitoring.

METHODS

A retrospective case note review of all 309 patients within the GUM cohort prescribed TDF on 1st January 2012 was performed. For each patient eGFR results in addition to uPCR and urinary albumin creatinine ratio (uACR) were reviewed from commencing TDF. Our local laboratory reports uACR in addition to uPCR for all patients.

RESULTS

Patients were 86% male with a mean age of 42 years and had been prescribed TDF for an average of 39 months. Viral load was undetectable in 99%. The median CD4 count was 634cells/cmm(104-1884cells/cmm).

All patients had at least one eGFR measurement, 99% in the last year. Two patients (0.6%) had eGFR <60mL/min. Urinary investigations were performed in 87%, 99% in the last year. Of these 269 patients, 35(13%) had abnormal results; 9% with albuminuria (>30mg/L) and/or raised uACR (>2.5 mg/mmol), 0.5% with proteinuria and/or raised uPCR (>30mg/mmol) and 3.5% had raised uACR and uPCR. TDF was prescribed 5.2 months longer in patients with abnormal results, although this was not statistically significant (p=0.086). TDF was discontinued in 4 patients due to abnormal eGFR and/or urinary markers. The mean time from the first abnormal result to therapy switch was 1.25 months (table 1)

CONCLUSIONS

Our audit shows good adherence to BHIVA guidelines, despite home ART delivery, and TDF appears well tolerated. However, a significant number of patients had unexpected albuminuria, increasing workload for repeat testing although not frequently resulting in TDF discontinuation. These findings highlight the need for further studies to evaluate the significance of albuminuria in monitoring TDF toxicity in addition to the implications for everyday practice.

Case	ART	TDF (months)	Results pre TDF switch			Results post TDF switch		
			eFGR	Albuminuria (mg/L)/ uACR (mg/mmol)	uPCR (mg/mmol)	eGFR	Albuminuria (mg/L)/uACR (mg/mmol)	uPCR (mg/mmol)
1	Darunavir Ritonavir TDF/FTC	43	>60	107/6.9	N/A	>60	31/2.1	N/A
2	Raltegravir TDF/FTC	14	55	600/27.7	88	>60	68/6.8	43
3	Darunavir Ritonavir TDF/FTC	10	55	45/1.9	33	>60	20/2.5	13
4	Nevirapine TDF/FTC	19	>60	382/24.5	38	>60	78/22.9	29

REFERENCES

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