



PONE-D-19-35784 Proximal renal tubular function in HIV-infected children on tenofovir disoproxil fumarate for treatment of HIV infection at two tertiary hospitals in Harare, Zimbabwe

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1 Abstract

This laboratory protocol describes urine and blood sample collection and measuring the concentration of urine glucose and protein, urine protein creatinine ratio, urine, and serum phosphate as well as urine and serum creatinine to determine the prevalence of proteinuria, estimated glomerular filtration rate and proximal renal tubular function among HIV infected patients on tenofovir disoproxil fumarate.

Variable	Category	eGFR<90ml/min/1.73m ²		Univariate		Multivariate ^a	
		Yes	No	OR (95%CI)	p-value	OR(95% CI)	p-value
Age (years)	0 -14	29 (42.6)	60 (49.2)	0.77 [0.42, 1.40]	0.387	0.78[0.33; 1.84]	0.574
	≥ 15	39 (57.4)	62 (50.8)	1		1	
Gender	Female	23 (33.8)	64 (52.5)	1		1	
	Male	45 (66.2)	58 (47.5)	2.16 [1.17, 3.99]	0.014*	1.32[0.57; 3.08]	0.517
Current ART Regimen.	TDF/3TC/EFV	38 (55.9)	99 (81.1)	1		1	
	TDF/3TC/NVP	9 (13.2)	14 (11.5)	1.67 [0.67, 4.19]	0.270	1.05[0.29; 3.82]	0.937
	TDF/3TC/PI	21 (30.9)	9 (7.4)	6.08[2.56, 14.45]	<0.001*	4.43[1.32; 4.89]*	0.016*
Stunting	>-2SD	47 (69.1)	101 (82.8)	1		1	
	<-2SD	11 (16.2)	13 (10.7)	1.82 [0.76, 4.36]	0.180	1.56[0.41; 6.00]	0.518
	<-3SD	10 (14.7)	8 (6.6)	2.69 [1.00, 7.24]	0.051	2.17[0.49; 9.50]	0.305
Baseline CD4 Count	201 – 500	18 (40)	42 (56.8)	1		1	
	501 – 800	8 (17.8)	16 (21.6)	1.19 [0.43, 3.28]	0.731	1.16[0.40; 3.36]	0.788
	≤ 200	11 (24.4)	13 (17.6)	2.02 [0.76, 5.35]	0.156	1.71[0.60; 4.87]	0.313
	≥800	8 (17.8)	3 (4)	6.37[1.51, 6.79]	0.012*	5.38[1.16; 5.04]*	0.032*

[†]8 samples not processed due to a technical fault at laboratory

*Statistically significant at $\alpha=0.05$

^aOnly age had a p-value greater than 0.25 in the univariate model but it was also included in the multivariate model to account for any confounding effects age may have on eGFR.

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4 Keywords

Proteinuria, serum and urine phosphate, urine protein creatinine ratio, tubular function, glomerular filtration rate

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