



Response to Raltegravir based third-line Antiretroviral therapy among Ugandan Children: A case series from an urban HIV clinic

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Background

- The number of HIV-infected children on protease inhibitor (PI) –based second line regimens has increased
- There is also an increasing number of children failing and developing resistance to PI based second line therapy
 - These require 3rd line/salvage therapy
- There is limited data on response to raltegravir based 3rd line ART among children in resource limited clinical settings



Methods

- Chart and database review of children (<18yrs) at JCRC Kampala with:
 - 2nd line ART failure
 - Triple class drug resistance (NRTI, NNRTI and PI)
 - On Raltegravir based 3rd line ART



Methods (2)

- **Evaluations:** Weight, CD4 count, Viral load and WHO stage at baseline/switch to 3rd line and afterwards
- ART history and genotypic resistance test results prior to switch were also reviewed
- Follow up was for a minimum of 6months and maximum of 54months (~5yrs)



Patient 1

Particulars	Male; 15yrs			
1 st line ART (Initiation date)	AZT/3TC/EFV (24.08.2004)			
2 nd line ART (Initiation date)	ABC/3TC/LPVr (05.11.2010)			
HIV Genotypic resistance test	HIV Sub type A			
	NRTI RAMs: M41L, D67N, V75M, V118I, M184V, L210W, T215Y, K219E			
	NNRTI RAMs: K103N, V179T, G190A			
	PI RAMs: M46I, I54L, L76V, I84			
3 rd line ART (Initiation date)	ETR/DRVr/RAL (30.11.2011; at age 10yrs)			
Response to 3 rd line ART		Wt (kg)	CD4 cells/ul	VL (copies/ml)
	Baseline	21.5	11	467,542
	Wk 12	26.5	254	126
	Wk 36	30	654	29
	3yrs	39.5	600	<20



Patient 2

Particulars	Female; 9yrs			
1 st line ART (Initiation date)	AZT/3TC/NVP (29.06.2007)			
2 nd line ART (Initiation date)	ABC/3TC/LPVr (05.11.2010)			
HIV Genotypic resistance test	HIV Sub type D			
	NRTI RAMs: M41L, D67N, T69NT, K70R, L74IL, M184V, T215F, K219Q			
	NNRTI RAMs: K101E, Y181C			
	PI RAMs: M46L, I47A, I84IV			
3 rd line ART (Initiation date)	TDF/3TC/DRVr/RAL (08.05.2012; at age 5yrs)			
Response to 3 rd line ART		Wt (kg)	CD4 cells/ul	VL (copies/ml)
	Baseline	15	972	364,526
	Wk 24	15	1179	-
	Wk 36	19	-	<20
	3yrs	27	1639	45



Patient 3

Particulars	Male; 14yrs			
1 st line ART (Initiation date)	AZT/3TC/NVP (01.02.2007)			
2 nd line ART (Initiation date)	ABC/3TC/LPVr (01.03.2012)			
HIV Genotypic resistance test	HIV Sub type A			
	NRTI RAMs: M41L, D67N, T69N, K70EGKR, M184V, T215F, K219Q			
	NNRTI RAMs: K101E, E138Q, G190A			
	PI RAMs: M46I, I54V, L76V, V82A			
3 rd line ART (Initiation date)	RAL/DRVr (08.09.2014; at age 12yrs)			
Response to 3 rd line ART		Wt (kg)	CD4 cells/ul	VL (copies/ml)
	Baseline	25	356	930,534
	Wk 24	29	718	499
	Wk 52	29.5	1102	182



Patient 4

Particulars	Male; 12yrs			
1 st line ART (Initiation date)	d4T/3TC/NVP (04.10.2011)			
2 nd line ART (Initiation date)	TDF/3TC/LPVr (30.08.2013)			
HIV Genotypic resistance test	HIV Subtype A			
	NRTI RAMs: D67G, T69N, K70R, M184V, T215I, K219E			
	NNRTI RAMs: K103N, V108I, Y181C			
	PI RAMs: M46I, I54V, L76V, V82S			
3 rd line ART (Initiation date)	DRV/r/RAL (07.11.2014; at age 11yrs)			
Response to 3 rd line ART		Wt (kg)	CD4 cells/ul	VL (copies/ml)
	Baseline	26.5	857	12,719
	Wk 24	31.5	836	<20



Patient 5

Particulars	Male; 12yrs			
1 st line ART (Initiation date)	AZT/3TC/NVP (04.10.2011)			
2 nd line ART (Initiation date)	TDF/3TC/LPVr (30.08.2013)			
HIV Genotypic resistance test	HIV Sub type B			
	NRTI RAMs: D67G, K70R, M184V, T215F, K219E			
	NNRTI RAMs: Y181C			
	PI RAMs: L10IL,K20I,E35G			
3 rd line ART (Initiation date)	DRVr/RAL (06.11.2015; at age 12yrs)			
Response to 3 rd line ART		Wt (kg)	CD4 cells/ul	VL (copies/ml)
	Baseline	20	79	703,487
	Wk 24	37	-	<20



Clinical Events

- None of the 5 children developed a new WHO stage III/ IV event after switch to 3rd line ART



Conclusions

- The children responded very well to raltegravir based 3rd line ART
 - All achieved viral suppression
 - They had increased weights and CD4 counts
 - None developed new stage III/IV events



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