UNDERSTANDING CHANGES IN METABOLIC PARAMETERS SWITCHING TO 2DR VERSUS 3DR INTEGRASE STRAND INHIBITORS (InSTIs)

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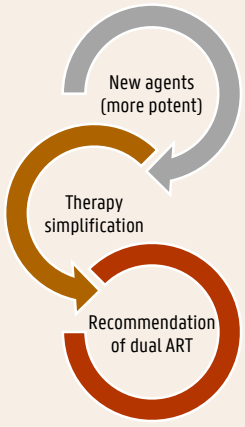
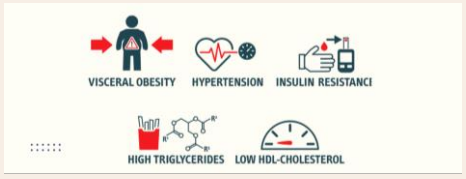
Background



- **Recommendation of 2DR** = **paradigm shift** in HIV treatment
- 2nd generation integrase inhibitors and tenofovir alafenamide (TAF) have been associated with **weight gain**

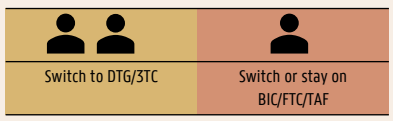
→ impact on **metabolic health and cardiovascular risk**?



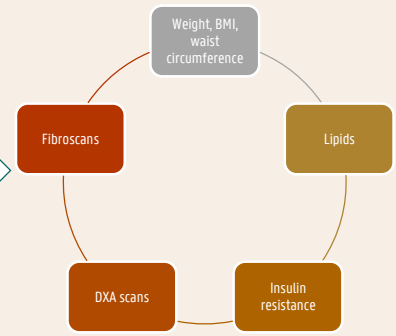
RUMBA study

- First randomized clinical trial evaluating the **impact on metabolic health** of switch from a 2nd generation integrase inhibitor (InSTI)-based triple ART regimen towards DTG/3TC.
- Open-label longitudinal study

- Randomization 2:1



Outcomes:



Results

- 134 subjects were randomized & 130 subjects were included in the intention to treat - exposed analysis
- Baseline data of both groups are presented in Table 1.

	N	DTG/3TC	BIC/FTC/TAF	p-value
Gender (n (%))	130			0.984
Male		79 (90.8)	39 (90.7)	
Female		8 (9.2)	4 (9.3)	
Age (mean ± SD)	130	47.31 ± 11,94	44.98 ± 11,60	0.292
Ethnicity (n (%))	130			0.676
European		70 (80.5)	32 (74.4)	
African		9 (10.3)	5 (11.6)	
Other		8 (9.2)	6 (14.0)	
Sexual orientation (n (%))	130			0.526
Gay/lesbian		58 (66.7)	25 (58.1)	
Heterosexual		24 (27.6)	13 (30.2)	
Bisexual/pansexual		3 (3.4)	4 (9.3)	
Not disclosed		2 (2.3)	1 (2.3)	
ART regimen at baseline (n (%))	130			0.072
DTG/ABC/3TC		27 (31.0)	22 (51.2)	
BIC/FTC/TAF		59 (67.8)	21 (48.8)	
DTG + FTC/TAF		1 (1.1)	0 (0)	
Months on ART (median (IQR))	123	97 (87.45 – 112.52)	72 (68.07 – 98.71)	0.128
Months on 2nd generation INSTI (median (IQR))	125	42 (35.90 – 46.00)	51.00 (38.96 – 51.44)	0.491
CD4 nadir (cells/µl; median (IQR))	121	324.00 (292.83 – 382.86)	269.00 (247.25 – 377.91)	0.510
Weight (kg; mean ± SD)	130	81.21 ± 12.39	75.30 ± 13.00	**0.013**
Waist (cm; mean ± SD)	128	95.35 ± 11.78	89.21 ± 11.20	**0.006**
BMI (kg/m²; median (IQR))	130	25.9 (23.4 – 28.4)	24.8 (21.8 – 26.1)	**0.024**

Table 1: Baseline data of both groups.

	DTG/3TC	BIC/FTC/TAF	p-value
ALT (U/L)	- 0.73	+ 4.6	**0.035**
HDL Cholesterol (mg/L)	- 0.07	- 2.80	**0.044**
Lean trunk mass (gram)	+ 105.77	- 489.37	**0.027**
Fat percentage	- 0.04	+ 1.33	**0.003**

Table 2: Significantly different estimated mean differences over time (baseline – week 48) between the groups.

- **Linear mixed models (unadjusted)** revealed significantly different estimated mean differences over time between the groups with regard to **ALT, HDL cholesterol, lean trunk mass and fat percentage** (see Table 2 and Figure 1).

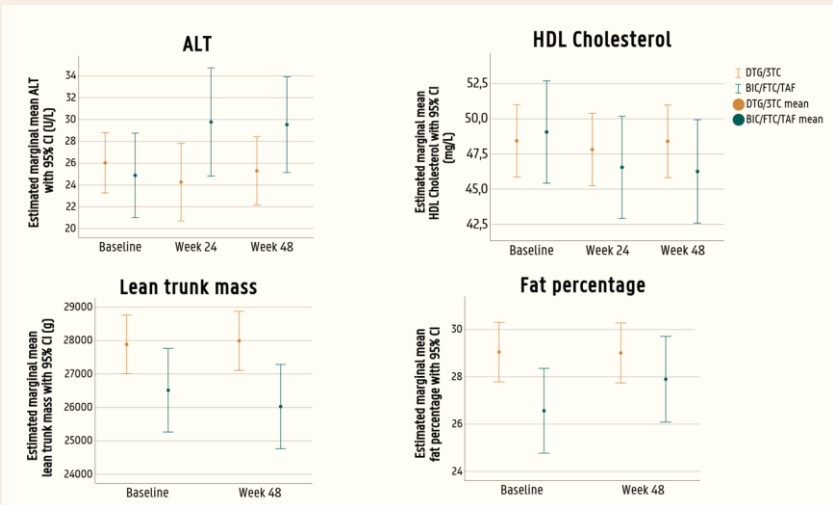


Figure 1: Estimated marginal mean ALT, HDL, lean trunk mass and fat percentage with their 95% CI in both groups.

- There were no significant differences with regard to the other outcomes, as listed in Table 3.

	DTG/3TC	BIC/FTC/TAF	p-value
Weight (kg)	+ 0.256	+ 0.18	0.918
Waist (cm)	-0 .02	+ 1.02	0.204
BMI (kg/m²)	+ 0.07	+ 0.04	0.919
Cholesterol (mg/dL)	- 2.52	- 9.30	0.287
LDL cholesterol (mg/dL)	- 1.82	- 7.56	0.311
Triglycerides (mg/dL)	- 3.79	- 21.15	0.198
HOMA-IR	- 0.166	- 0.43	0.347

Table 3: Other estimated mean differences over time (baseline – week 48) between the groups.

Conclusion

- Our data suggest that treatment with **DTG/3TC** may have a **favorable impact** on metabolic outcomes at week 48 as compared to BIC/FTC/TAF.
- Further longitudinal data (week 72, 96 & 144) are being collected and analyzed to investigate whether these trends can be confirmed over longer term.

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