Dolutegravir-based therapy, diet, activity & weight gain: 48-week prospective cohort in South Africa

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Background

PWH in South Africa who transition to dolutegravir (DTG) experience clinically significant weight gain (≥10% increase in body weight). If and how behavioral factors drive this weight gain is unknown.

Aim: To evaluate the change in behavioral factors between PWH with and without clinically significant weight gain over 48 weeks post transition to DTG

Methods

Prospective, observational cohort (DISCO) from a public-sector clinic in KwaZulu-Natal, South Africa.

Inclusion Criteria:

Adult ≥18 years old

On NNRTI-based ART for >6 months prior to switch to DTG

Exposures: We considered changes in:

Fruit intake (servings/week)

Fast food intake (servings/week)

Sugar-sweetened beverage (SSB) intake (frequency)

Physical Activity (MET-minutes/week)

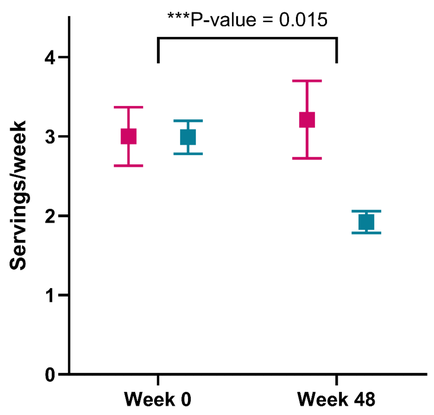
Multivariable regression of ≥10% weight gain, adjusted for age, sex, education and ART duration (not shown)

Results

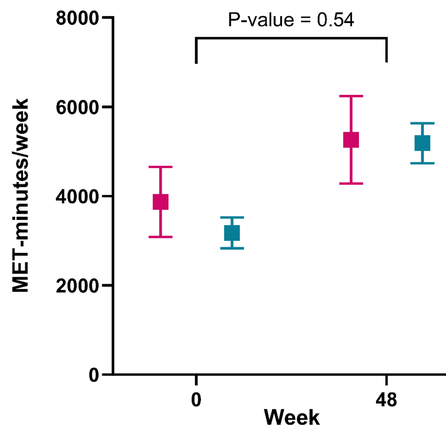
- The 66 (18%) individuals who experienced ≥10% body weight gain reported a small increase in fruit intake (0.21 servings/week [95% CI: -0.9 to 1.3]) compared to those without (-1.07 [95% CI: -1.5 to -0.7])
- No significant change in frequency of fast-food intake, SSB consumption, or physical activity between groups

Participants with clinically significant weight gain had greater fruit intake but no difference in fast-food or sugary beverage intake compared to those without.

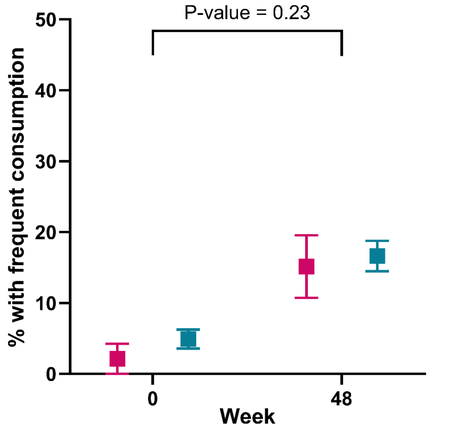
Mean fruit intake across 48 weeks



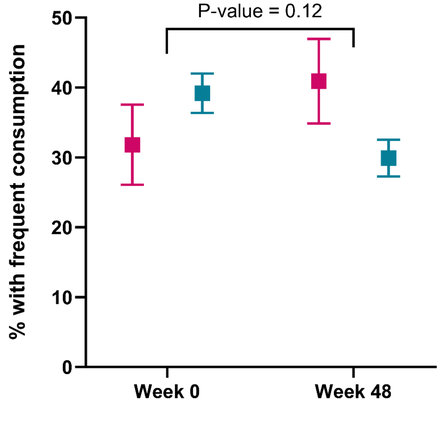
Mean physical activity across 48 weeks



Fast food intake across 48 weeks



SSB intake across 48 weeks



The p-values included here reflect tests of differences in the designated outcome over 48 weeks, comparing those who experienced clinically significant weight gain versus those who did not. Means were compared using t-tests and proportions using chi-squared tests.

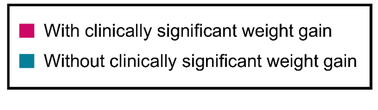


Table 1. Cohort Characteristics	Without clinically significant weight gain (n = 301)	With clinically significant weight gain (n = 66)
Age (years) (n, %)		
≤42	154 (51)	36 (55)
42+	147 (49)	30 (45)
Mean (SD)	43 (12)	42 (12)
Sex (n, %)		
Male	70 (23)	10 (15)
Female	231 (77)	56 (85)
Education (n, %)		
No schooling	38 (13)	7 (11)
Primary school	59 (20)	14 (21)
Secondary school	192 (64)	40 (61)
Tertiary	12 (4)	5 (8)
Weight (kg) (n, %)		
≤55	164 (54)	48 (73)
56-70	137 (46)	18 (27)
71+		
BMI (kg/m^2) (n, %)		
<18.5	144 (48)	41 (62)
18.5-24.9	157 (52)	25 (38)
≥25		
ART duration (years) (IQR)	6.8 (4.8, 9.7)	6.5 (3.6, 10.7)

Conclusions & Future Directions

- Behavioral interventions to address weight gain in PWH on TLD may not be effective
- Need further exploration into obesity mitigation for PWH and obesity on TLD

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