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*Presenting on behalf of the authors.

Key Takeaways

Median changes in weight, body mass index, and body composition measurements were similar between virologically suppressed adults who switched to CAB+RPV LA dosed twice monthly (Q2M) and who continued daily oral BIC/FTC/TAF through Month 11/Month 12, with no clinically relevant changes

Introduction

- Cabotegravir (CAB), an integrase strand transfer inhibitor (INSTI), plus rilpivirine (RPV), a non-nucleoside reverse transcriptase inhibitor, administered monthly or every 2 months (Q2M) is the first complete long-acting (LA) regimen recommended by treatment guidelines for the maintenance of HIV-1 virologic suppression¹⁻⁴
- Bicitegravir/emtricitabine/tenofovir alafenamide (BIC/FTC/TAF) is an oral, once-daily, 3-drug regimen recommended by treatment guidelines as one of the choices for therapy for people living with HIV-1 (PLWH)²⁻⁴
- Body weight and lipid changes have been observed in participants receiving INSTI-based regimens including CAB+RPV LA, and TAF-based regimens including BIC/FTC/TAF⁵⁻¹¹
- Weight and metabolic changes from baseline to Month 12 were assessed in a standardized manner among PLWH switching to CAB+RPV LA Q2M vs continuing BIC/FTC/TAF in the phase IIIb SOLAR study

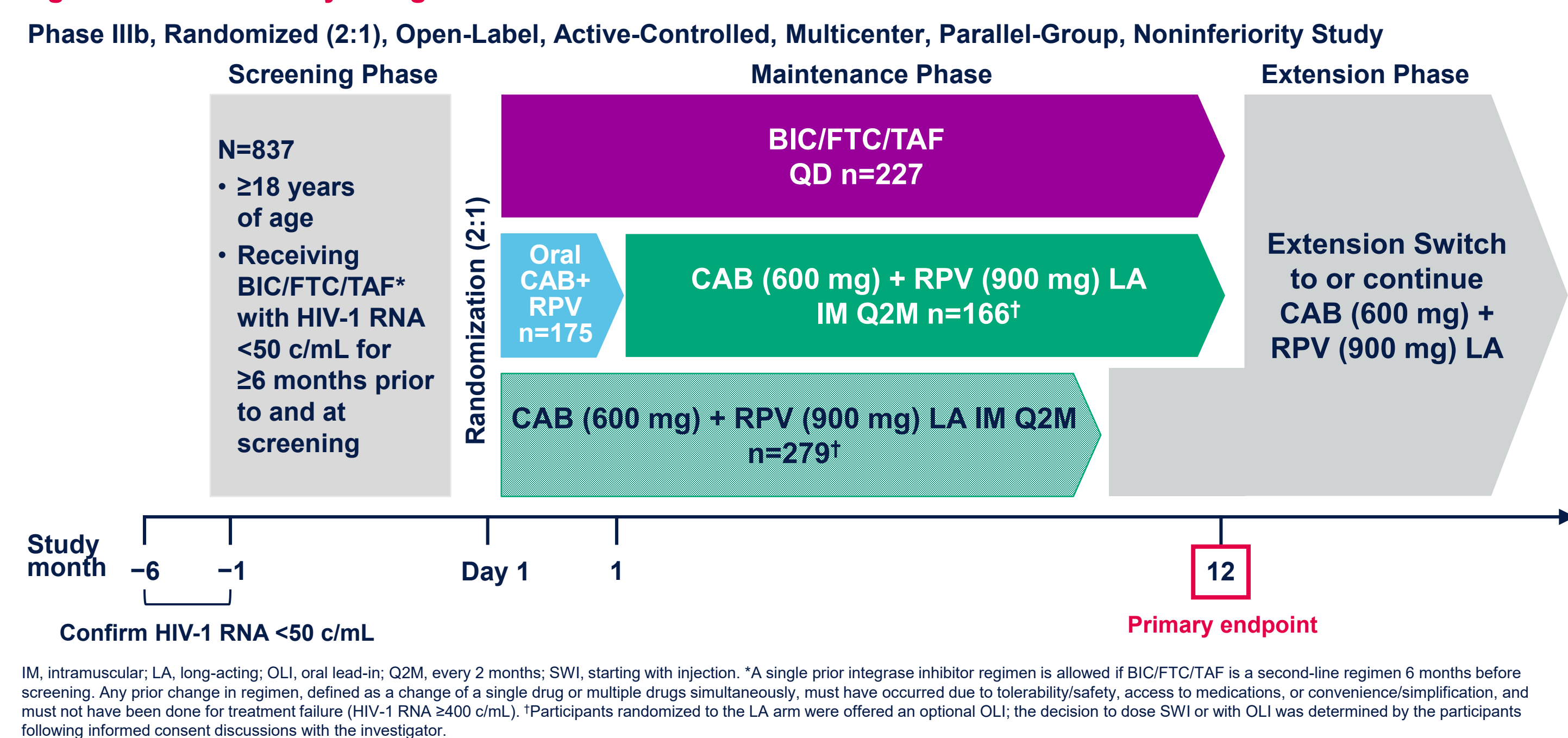
Methods

- SOLAR (ClinicalTrials.gov identifier, NCT04542070) is the first randomized, large, head-to-head comparison of CAB+RPV LA dosed Q2M vs daily oral BIC/FTC/TAF (Figure 1)
 - Evaluating weight and metabolic changes from baseline to Month 11/12 were additional endpoints
- Among 687 participants randomized (2:1; n=6 not dosed), 454 switched to CAB+RPV LA Q2M (175 elected for oral lead-in [OLI] and 279 elected to start with injections [SWI]) and 227 continued on BIC/FTC/TAF

Metabolic Objectives

- Changes in body weight, body mass index (BMI) category, waist and hip circumferences, waist-to-height and waist-to-hip ratios, and the proportion of participants with insulin resistance or metabolic syndrome (as defined by standard clinical criteria) were assessed from baseline (Day 1) to Month 11 (starting with injection)/12 (OLI) (hereafter referred to as Month 12)
 - Standardized weight and anthropometric measurements were performed using circumference tapes and Tanita scales

Figure 1. SOLAR Study Design



Results

Participants

- Among study participants, 12 transgender females, 1 transgender male, and 1 gender non-conforming individual were included (Table 1)
- In total, 59% (n=401/681) of participants were in the overweight or obesity category at baseline

Table 1. Demographics and Baseline Clinical Characteristics

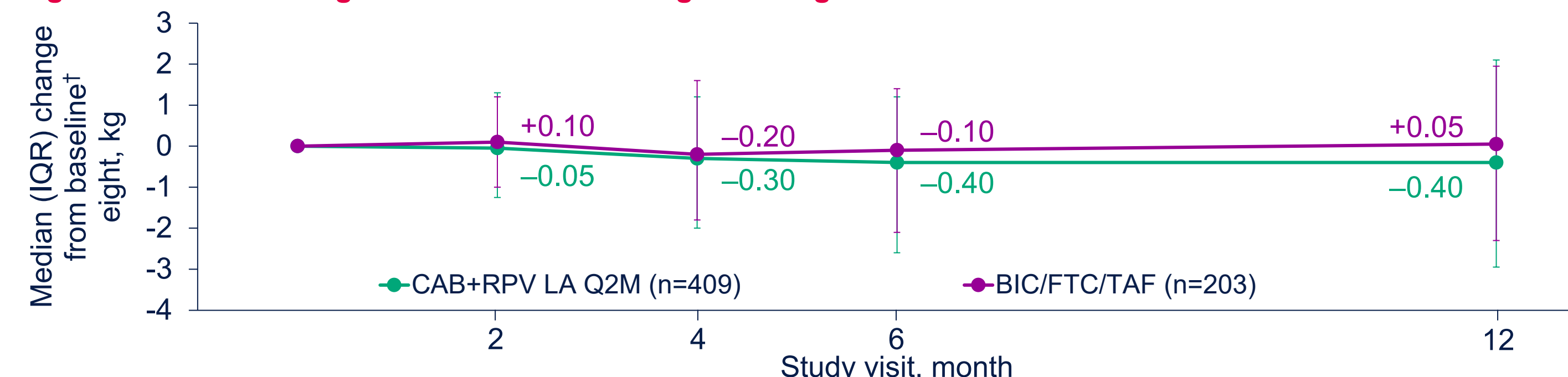
Parameter	CAB+RPV LA Q2M (n=454)	BIC/FTC/TAF (n=227)
Age, median (range), years	37 (18-74)	37 (18-69)
≥50 years, n (%)	89 (20)	45 (20)
Female (sex at birth), n (%)	79 (17)	41 (18)
Race, n (%)		
Black	96 (21)	49 (22)
White	313 (69)	160 (70)
Asian	23 (5)	11 (5)
Other races*	22 (5)	7 (3)
CD4+ cell count, median (IQR), cells/mm ³	662 (487-853)	645 (489-823)
Duration of prior ART, median (IQR), years [†]	2.6 (1.6-4.9)	2.5 (1.5-4.7)
Weight, median (IQR), kg	81.3 (70.7-91.8)	79.0 (69.4-91.7)
BMI, median (IQR), kg/m ²	26.0 (23.2-29.3)	25.4 (23.6-29.6)
≥30 kg/m ² , n (%)	97 (21)	52 (23)
BMI category, n (%)		
Underweight (<18.5 kg/m ²)	8 (2)	3 (1)
Normal (18.5 to <25 kg/m ²)	175 (39)	94 (41)
Overweight (25 to <30 kg/m ²)	174 (38)	78 (34)
Obesity (≥30 kg/m ²)	97 (21)	52 (23)
Baseline lipids, median (range)		
TG, mmol/L	1.07 (0.32-20.42)	1.06 (0.38-4.01)
TC, mmol/L	4.58 (2.25-9.66)	4.77 (2.72-8.94)
LDL, mmol/L	2.74 (0.55-5.41)	2.77 (1.01-6.97)
HDL, mmol/L	1.22 (0.47-2.38)	1.26 (0.60-3.06)
TC/HDL ratio	3.71 (1.45-20.55)	3.56 (1.82-8.25)
Relevant medical history, n (%)		
Hypertension	48 (11)	26 (12)
Diabetes	19 (4)	7 (3)
Relevant co-medications, n (%)		
Lipid-lowering therapy [‡]	40 (9)	21 (9)

BMI, body mass index; HDL, high-density lipoproteins; IQR, interquartile range; LDL, low-density lipoproteins; Q2M, every 2 months; TC, total cholesterol; TG, triglycerides. *Other race participants: American Indian or Alaska Native, n=14 (CAB+RPV LA Q2M) and n=2 (BIC/FTC/TAF); Native Hawaiian or other Pacific Islander, n=1 (BIC/FTC/TAF); multiple, n=8 (CAB+RPV LA Q2M) and n=4 (BIC/FTC/TAF). †BIC/FTC/TAF must have been the participant's first or second regimen. If BIC/FTC/TAF was the second regimen, the first regimen must have been an integrase inhibitor. ‡Started lipid-lowering medication during maintenance phase: CAB+RPV LA Q2M, n=17 (4%); BIC/FTC/TAF, n=8 (4%).

Weight Outcomes

- At Month 12, median (interquartile range; IQR) change in weight in the CAB+RPV LA Q2M group was -0.40 (-2.95, +2.10) kg and +0.05 (-2.30, +1.95) kg in the BIC/FTC/TAF group (Figure 2)

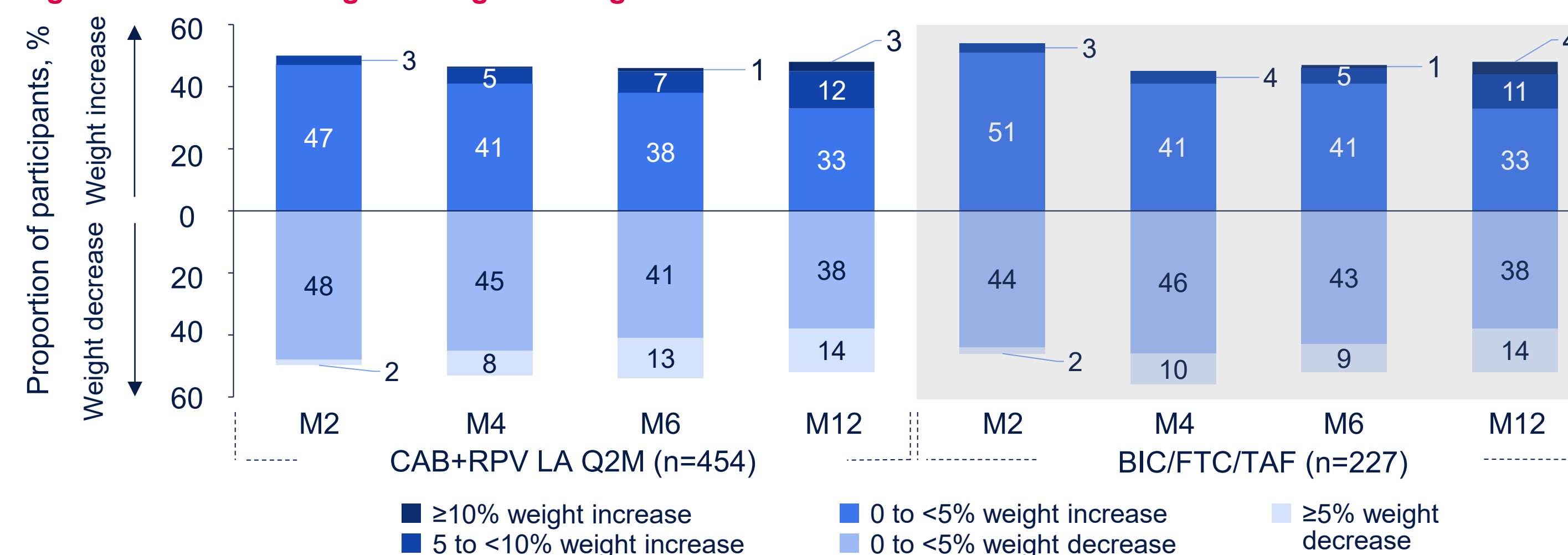
Figure 2. Median Change From Baseline in Weight Through Month 12*



IQR, interquartile range; LA, long-acting; Q2M, every 2 months. *Any participant that started lipid-modifying agents during the study was non-evaluable in anthropometric assessments. †Median (IQR) weight at baseline: CAB+RPV LA Q2M, 81.3 (70.70, 91.80) kg; BIC/FTC/TAF, 79.0 (69.40, 91.70) kg.

- Weight increases of ≥10% by Month 12 occurred in 3% (n=11/454) of participants in the LA arm vs 4% (n=9/227) in the BIC/FTC/TAF arm (Figure 3)

Figure 3. Percent Change in Weight Through Month 12*

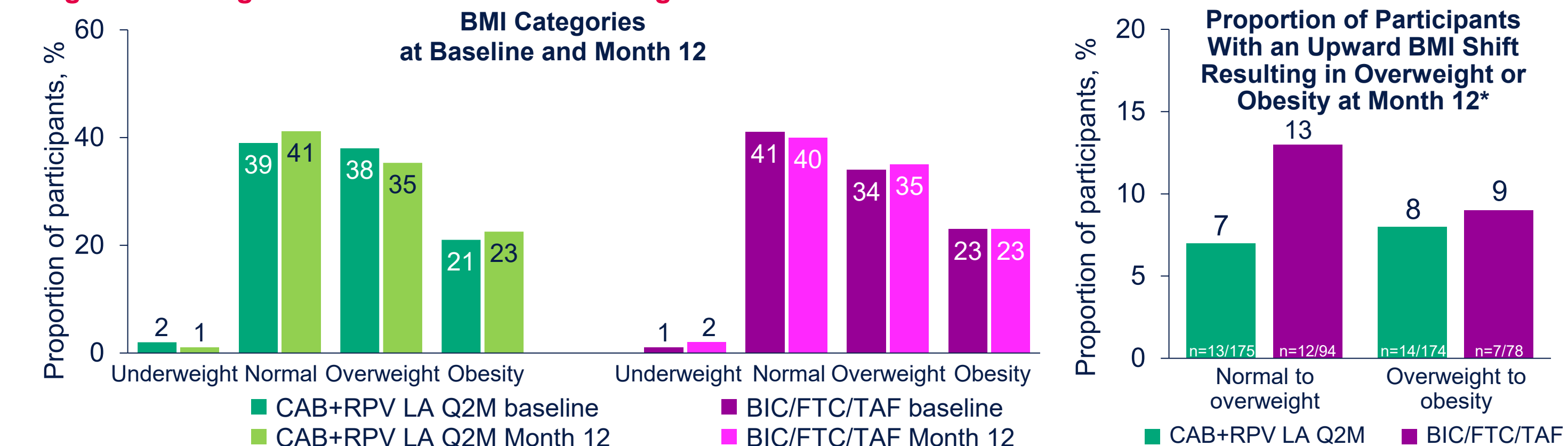


LA, long-acting; Q2M, every 2 months. *Any participant that started lipid-modifying agents during the study was non-evaluable in anthropometric assessments.

BMI Outcomes

- Overall, the proportion of individuals in BMI categories remained similar at Month 12 (Figure 4)

Figure 4. Change From Baseline in BMI Through Month 12

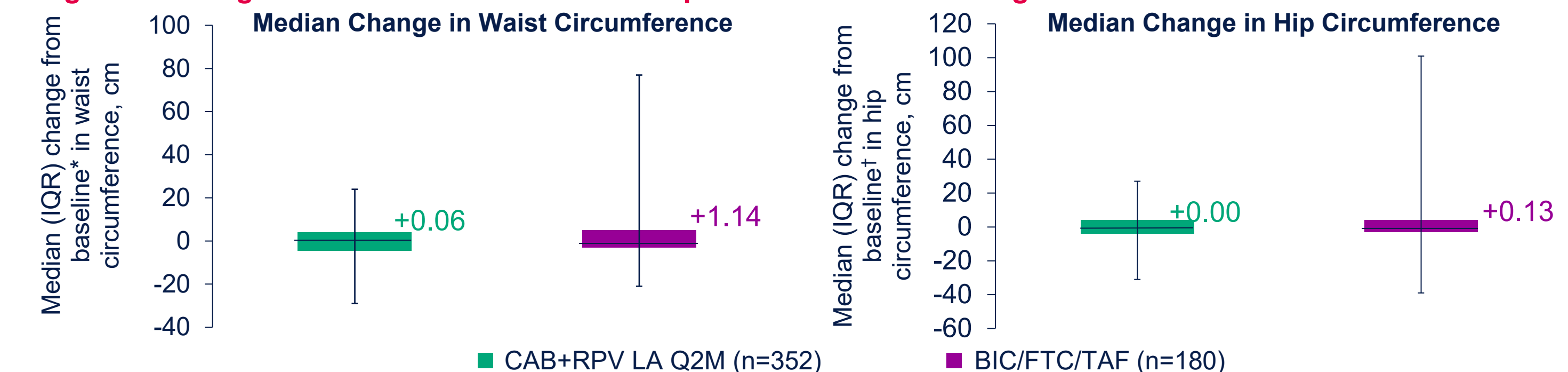


BMI, body mass index; LA, long-acting; Q2M, every 2 months. *No participant shifted from normal to obesity or underweight to overweight.

Waist and Hip Circumference Outcomes

- Mean (SD) change in waist circumference and hip circumference was +0.19 cm (8.01) and +0.26 cm (7.81) in the CAB+RPV LA Q2M arm, respectively, and +1.64 cm (9.19) and +0.51 cm (11.44) in the BIC/FTC/TAF arm at M11/12, respectively (Figure 5)
- There were no clinically relevant changes from baseline to Month 12 in the median (IQR) waist-to-height ratio (CAB+RPV LA Q2M, +0.00 [-0.020, 0.020]; BIC/FTC/TAF, +0.010 [-0.020, 0.030]) and median waist-to-hip ratio (CAB+RPV LA Q2M, +0.00 [-0.040, 0.040]; BIC/FTC/TAF, +0.010 [-0.030, 0.040])

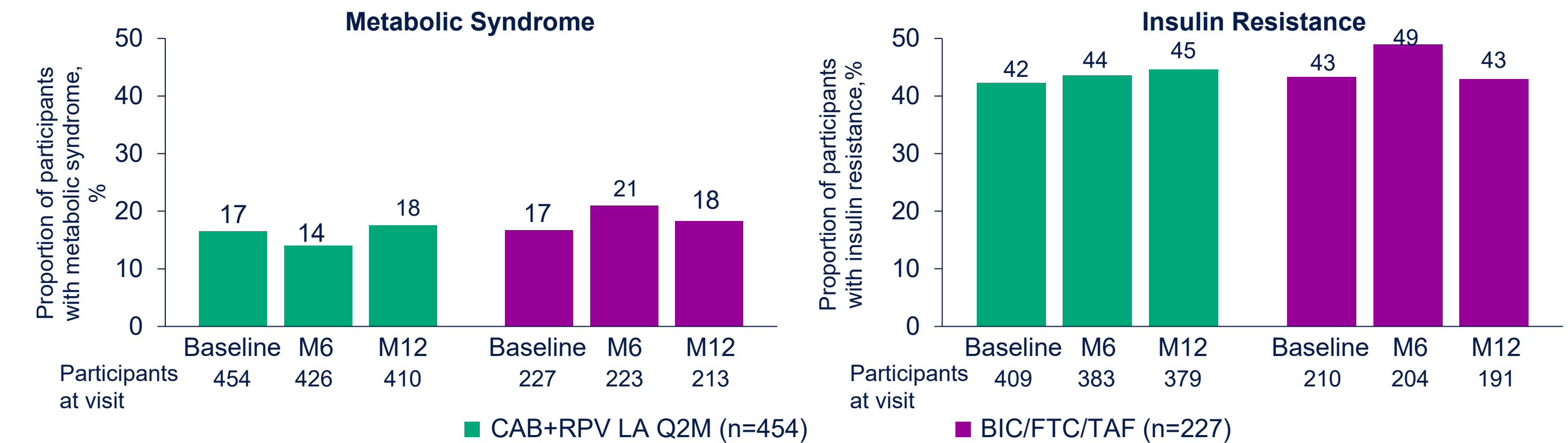
Figure 5. Change From Baseline in Waist and Hip Circumferences Through Month 12



IQR, interquartile range; LA, long-acting; Q2M, every 2 months. *Median (IQR) waist circumference at baseline: CAB+RPV LA Q2M, 90.35 (82.20, 100.98) cm; BIC/FTC/TAF, 90.00 (81.30, 101.00) cm. †Median (IQR) hip circumference at baseline: CAB+RPV LA Q2M, 99.00 (92.00, 106.00) cm; BIC/FTC/TAF, 97.0 (90.00, 106.66) cm.

Metabolic Outcomes

- There were no clinically relevant changes from baseline to Month 12 in the proportion of participants with metabolic syndrome or insulin resistance in either arm (Figure 6)



HDL-C, high-density lipoprotein cholesterol; HOMA-IR, Homeostasis Model of Assessment for Insulin Resistance; LA, long-acting; M, month; Q2M, every 2 months. *Three abnormal findings out of the following five qualifies a person for metabolic syndrome: elevated waist circumference (females: ≥88 cm [≥35 in]; males: ≥102 cm [≥40 in]), elevated triglycerides (≥150 mg/dL [1.7 mmol/L]), reduced HDL-C (females: <50 mg/dL [1.3 mmol/L]; males: <40 mg/dL [1.0 mmol/L]), elevated blood pressure (meeting either or both criteria: systolic ≥130 and/or diastolic ≥85 mm Hg), and elevated fasting glucose (≥100 mg/dL). †HOMA-IR ≥2.

Conclusions

- This is the first randomized phase IIIb study to compare weight, anthropometric, and metabolic changes in a standardized manner among PLWH switching to CAB+RPV LA Q2M or continuing BIC/FTC/TAF
- Median changes in weight, BMI, and body composition measurements were similar between CAB+RPV LA Q2M and BIC/FTC/TAF through Month 12
- There were no clinically relevant changes in the proportion of participants with metabolic syndrome or insulin resistance between arms at Month 12
- These data on weight and metabolic changes with CAB+RPV LA dosed Q2M support its use for maintenance treatment in adults with HIV-1