

Safety Analysis of BIC/LEN Single-Tablet Regimen in People With HIV Who Have Comorbidities of Dyslipidemia, Hypertension, and Diabetes Mellitus From Phase 3 of ARTISTRY-1

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Conclusions

- Bictegravir/lenacapavir (BIC/LEN) was well tolerated through 48 weeks of treatment in people with HIV and select comorbidities of dyslipidemia, hypertension, and diabetes mellitus, who switched from complex regimens
 - Adverse events (AEs) leading to discontinuation of BIC/LEN were rare ($\leq 2\%$), and within each select baseline comorbidity group, the rate of AEs reported by participants was generally similar between BIC/LEN and complex regimens
- These results continue to support switching to BIC/LEN single-tablet regimen (STR) as a treatment option for people with HIV, including those who are older, have comorbidities, and are taking concomitant medications

Plain Language Summary

- Many people with human immunodeficiency virus (HIV) also have other health conditions and take other medicines in addition to their HIV treatment
- Sometimes this means they need to take several HIV medicines each day (known as “complex regimens”) because simpler options may not work well
 - A single tablet containing bictegravir (BIC) and lenacapavir (LEN) may offer a simpler treatment option
- In the ARTISTRY-1 study, switching to BIC/LEN worked as well as continuing a complex regimen, and was equally safe
- This analysis from ARTISTRY-1 looked at side effects in people who had high levels of cholesterol or other fats in the blood (dyslipidemia), high blood pressure, or diabetes
- People with each of these health conditions generally had a similar number of side effects whether they took BIC/LEN or a complex regimen. Very few people stopped taking BIC/LEN because of side effects

Introduction

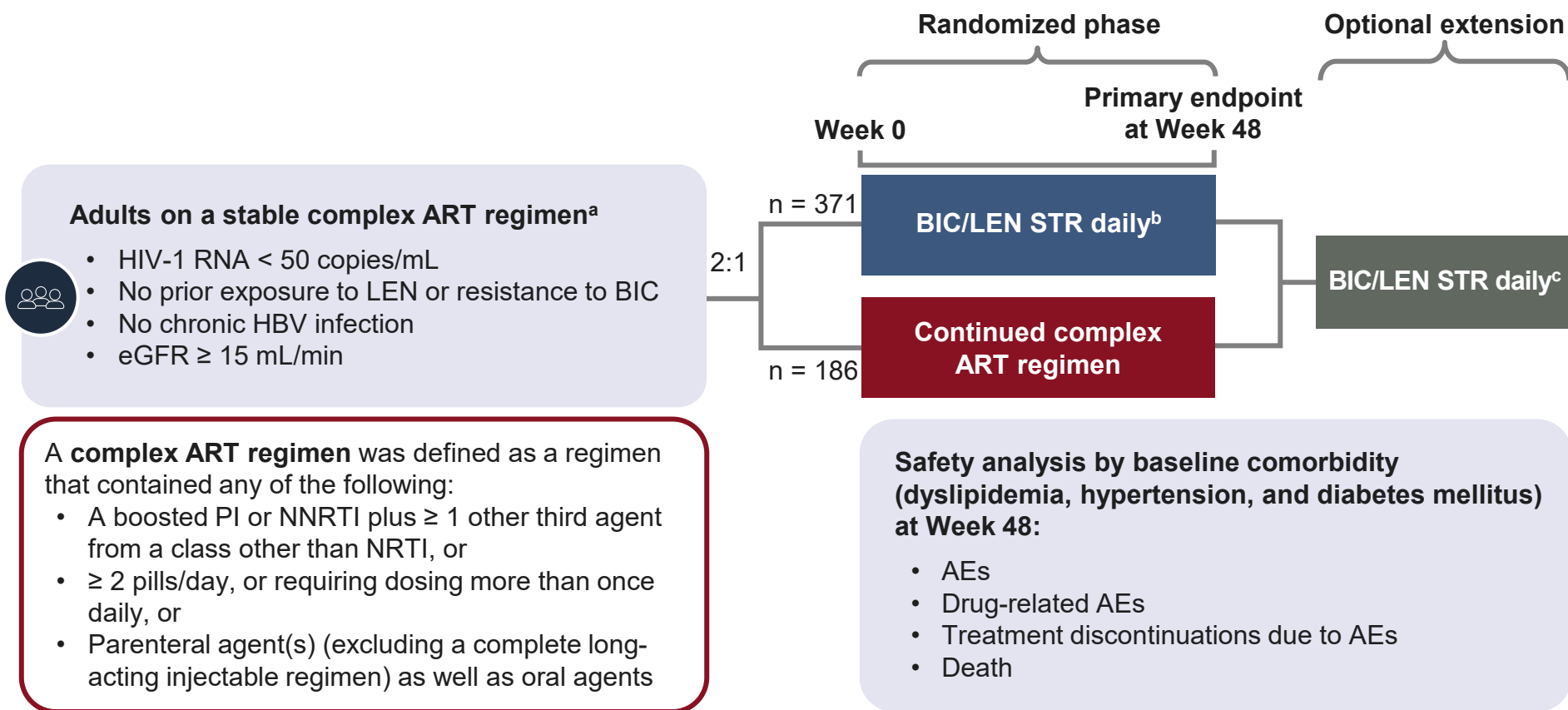
- People with HIV have a high comorbidity and concomitant medication burden,¹ and many are unable to take currently available STRs due to drug-drug interactions, resistance, or intolerance²⁻⁴
- BIC/LEN is a novel, once-daily STR composed of BIC (a guideline-recommended integrase strand-transfer inhibitor)⁵⁻⁷ and LEN (a first-in-class capsid inhibitor with no documented *de novo* resistance in the absence of prior exposure)⁸
- In Phase 3 of the ARTISTRY-1 study (NCT05502341), BIC/LEN STR was well tolerated, highly effective at maintaining virologic suppression, and led to improved fasting lipid profile in people with HIV switching from complex regimens^{9,10}
- ARTISTRY-1 comprised the oldest known population to be enrolled in a registrational trial for antiretrovirals, and most participants had comorbidities that required the use of concomitant medications⁹

Objective

- To evaluate safety outcomes through Week 48 of Phase 3 of ARTISTRY-1 in people with HIV who have dyslipidemia, hypertension, and/or diabetes mellitus

Methods

Figure 1. Phase 3 ARTISTRY-1 Study Design



^aDue to antiretroviral resistance, intolerance, drug-drug interactions, or contraindication to existing STRs. ^bBIC/LEN 75/50 mg, with oral loading dose of LEN 600 mg on Days 1 and 2 of treatment. ^cBIC/LEN 75/50 mg. AE, adverse event; ART, antiretroviral therapy; BIC, bictegravir; eGFR_{CG}, estimated glomerular filtration rate by Cockcroft-Gault equation; HBV, hepatitis B virus; LEN, lenacapavir; NNRTI, non-nucleoside reverse transcriptase inhibitor; NRTI, nucleoside/nucleotide reverse transcriptase inhibitor; PI, protease inhibitor; STR, single-tablet regimen.

Results

Table 1. Baseline Demographic and Clinical Characteristics

	BIC/LEN n = 371	Complex Regimen n = 186
Age, years, median (range)	60 (22-84)	60 (24-75)
Assigned female at birth, n (%)	64 (17)	36 (19)
Race, ^a n (%)		
White	260 (70)	124 (67)
Black	64 (17)	33 (18)
Asian	16 (4)	9 (5)
Other ^b	12 (3)	3 (2)
Hispanic or Latine, ^c n (%)	80 (22)	42 (23)
Duration of HIV treatment, years, median (Q1, Q3)	28 (22, 32)	28 (21, 32)
Number of antiretroviral pills/day, median (range)	3 (2-11)	3 (2-9)
2-3, n (%)	248 (67)	122 (66)
≥ 4, n (%)	123 (33)	64 (34)
Twice-daily dosing, n (%)	152 (41)	66 (35)
PI-containing regimen, n (%)	279 (75)	148 (80)
Select comorbidities, ^d n (%)		
Dyslipidemia	244 (66)	133 (72)
Hypertension	190 (51)	90 (48)
Diabetes mellitus	91 (25)	42 (23)
Chronic kidney disease	49 (13)	29 (16)
Number of select concomitant medications, ^e n (%)		
1	62 (17)	50 (27)
≥ 2	237 (64)	102 (55)

^aLocal regulators did not allow the collection of race information for 19 participants in the BIC/LEN group and 17 in the complex regimen group; percentages were calculated using total number of participants as the denominator. ^bCategory includes American Indian or Alaska Native, Native Hawaiian, Pacific Islander, and other. ^cLocal regulators did not allow the collection of ethnicity information for 21 participants in the BIC/LEN group and 16 in the complex regimen group; percentages were calculated using total number of participants as the denominator. ^dSelect comorbidities were identified by MedDRA, Version 28.0, using a standardized MedDRA query narrow search; the full search term used for diabetes mellitus was “hyperglycemia/new onset diabetes mellitus”. Comorbidities are not mutually exclusive as participants may have ≥ 1 comorbidity of dyslipidemia, hypertension, diabetes mellitus, and chronic kidney disease. ^eConcomitant medications were coded using the WHOdrug dictionary (BMAR25 update), and include antidiabetic, antihypertensive, and lipid-lowering agents. BIC/LEN, bictegravir/lenacapavir; MedDRA, Medical Dictionary for Regulatory Activities; PI, protease inhibitor; Q, quartile.

For additional details on comorbidities at baseline, please scan the QR code



There was a high rate of comorbidities at baseline in ARTISTRY-1

Results (cont.)

Table 2. Select Concomitant Medications by Comorbidity at Baseline

	Dyslipidemia		Hypertension		Diabetes Mellitus	
	BIC/LEN n = 244	Complex Regimen n = 133	BIC/LEN n = 190	Complex Regimen n = 90	BIC/LEN n = 91	Complex Regimen n = 42
Number of select concomitant medications, n (%)						
1	43 (18)	34 (26)	16 (8)	9 (10)	10 (11)	1 (2)
≥ 2	190 (78)	93 (70)	168 (88)	79 (88)	79 (87)	41 (98)
Type of select concomitant medications, n (%)						
Antidiabetic agents	67 (27)	38 (29)	56 (29)	33 (37)	66 (73)	32 (76)
Antihypertensive agents	154 (63)	86 (65)	170 (89)	84 (93)	62 (68)	36 (86)
Lipid-lowering agents	225 (92)	119 (89)	156 (82)	75 (83)	76 (84)	39 (93)
Any GLP-1 agents	26 (11)	15 (11)	24 (13)	14 (16)	22 (24)	9 (21)
Antidiabetic and antihypertensive agents	46 (19)	32 (24)	49 (26)	32 (36)	48 (53)	28 (67)
Antidiabetic, antihypertensive, and lipid-lowering agents	44 (18)	28 (21)	42 (22)	28 (31)	40 (44)	26 (62)

Select comorbidities were identified by MedDRA, Version 28.0, using a standardized MedDRA query narrow search; the full search term used for diabetes mellitus was “hyperglycemia/new onset diabetes mellitus”. Comorbidities are not mutually exclusive as participants may have ≥ 1 comorbidity of dyslipidemia, hypertension, and diabetes mellitus. Concomitant medications were coded using the WHOdrug dictionary (BMAR25 update), and include antidiabetic, antihypertensive, lipid-lowering agents and GLP-1 agents. GLP-1 agents were searched for by drug ingredients including tirzepatide, semaglutide, or liraglutide. BIC is an OCT2 and MATE1 inhibitor *in vitro*¹¹ and LEN is a moderate inhibitor of CYP3A and a P-glycoprotein inhibitor.¹² Clinicians were given guidance in the package insert on drug-drug interactions. BIC/LEN, bictegravir/lenacapavir; CYP3A4, cytochrome P450 3A4; GLP-1, glucagon-like peptide-1 receptor agonists; MATE1, multidrug and toxin extrusion transporter 1; MedDRA, Medical Dictionary for Regulatory Activities; OCT2, organic cation transporter 2.

Table 3. Use of Select Concomitant Medications During the Study by Comorbidity at Baseline

	Dyslipidemia		Hypertension		Diabetes Mellitus	
	BIC/LEN n = 244	Complex Regimen n = 133	BIC/LEN n = 190	Complex Regimen n = 90	BIC/LEN n = 91	Complex Regimen n = 42
Lipid-lowering agents, n (%)						
Use at baseline	215 (88)	113 (85)	146 (77)	70 (78)	73 (80)	38 (90)
Use at Week 48	217 (89)	119 (89)	151 (79)	74 (82)	73 (80)	39 (93)
Initiated during the study ^a	10 (4)	6 (5)	10 (5)	5 (6)	3 (3)	1 (2)
Stopped during the study ^b	5 (2)	0	4 (2)	0	2 (2)	0
Antihypertensive agents, n (%)						
Use at baseline	143 (59)	81 (61)	165 (87)	82 (91)	61 (67)	36 (86)
Use at Week 48	151 (62)	83 (62)	166 (87)	82 (91)	61 (67)	36 (86)
Initiated during the study ^a	11 (5)	5 (4)	5 (3)	2 (2)	1 (1)	0
Stopped during the study ^b	4 (2)	3 (2)	3 (2)	3 (3)	2 (2)	1 (2)
Antidiabetic agents, n (%)						
Use at baseline	53 (22)	29 (22)	46 (24)	25 (28)	59 (65)	29 (69)
Use at Week 48	61 (25)	37 (28)	52 (27)	32 (36)	65 (71)	31 (74)
Initiated during the study ^a	14 (6)	9 (7)	10 (5)	8 (9)	7 (8)	3 (7)
Stopped during the study ^b	1 (< 1)	0	2 (1)	0	0	0
GLP-1 agents, n (%)						
Use at baseline	20 (8)	8 (6)	20 (11)	8 (9)	19 (21)	6 (14)
Use at Week 48	22 (9)	15 (11)	20 (11)	14 (16)	21 (23)	9 (21)
Initiated during the study ^a	6 (2)	7 (5)	4 (2)	6 (7)	3 (3)	3 (7)
Stopped during the study ^b	3 (1)	0	3 (2)	0	2 (2)	0

See Table 2 footnotes for details on select comorbidities and concomitant medications.

^a“Initiated during the study” refers to participants who did not take that class of medication at baseline but who started it during the study; ^b“Stopped during the study” refers to participants who took that class of medication at baseline and stopped all medications of this class during the study. BIC/LEN, bictegravir/lenacapavir; CYP3A4, cytochrome P450 3A4; GLP-1, glucagon-like peptide-1 receptor agonists; MATE1, multidrug and toxin extrusion transporter 1; MedDRA, Medical Dictionary for Regulatory Activities; OCT2, organic cation transporter 2.

Select Concomitant Medications by Comorbidity at Baseline

Most participants with select comorbidities of dyslipidemia, hypertension, or diabetes mellitus at baseline were taking at least two concomitant medications during the study (**Table 2**)

- Use of concomitant lipid-lowering, antihypertensive, or antidiabetic agents did not change meaningfully from baseline to Week 48 (**Table 3**)

Table 4. Safety Outcomes in the Overall ARTISTRY-1 Population and by Comorbidity at Baseline

	Overall ^a		Dyslipidemia		Hypertension		Diabetes Mellitus	
	BIC/LEN n = 371	Complex Regimen n = 186	BIC/LEN n = 244	Complex Regimen n = 133	BIC/LEN n = 190	Complex Regimen n = 90	BIC/LEN n = 91	Complex Regimen n = 42
AEs, n (%)	305 (82)	157 (84)	198 (81)	117 (88)	156 (82)	78 (87)	72 (79)	40 (95)
Grade ≥ 3	51 (14)	26 (14)	36 (15)	22 (17)	28 (15)	16 (18)	17 (19)	8 (19)
Serious	52 (14)	22 (12)	38 (16)	21 (16)	31 (16)	13 (14)	17 (19)	9 (21)
Occurring in ≥ 2 participants in any select comorbidity subgroup ^b								
CVA	3 (1)	0	3 (1)	0	3 (2)	0	0	0
CAD	2 (1)	1 (1)	2 (1)	1 (1)	1 (1)	0	1 (1)	0
AKI	2 (1)	0	2 (1)	0	2 (1)	0	0	0
AMI	0	2 (1)	0	2 (2)	0	2 (2)	0	1 (2)
Unstable angina	2 (1)	0	2 (1)	0	1 (1)	0	1 (1)	0
COVID-19	2 (1)	0	1 (< 1)	0	2 (1)	0	1 (1)	0
DRAEs, n (%)	53 (14)	3 (2)	28 (11)	3 (2)	26 (14)	1 (1)	15 (16)	0
Grade ≥ 3	2 (1)	0	2 (1)	0	0	0	0	0
Serious	1 (< 1)	0	1 (< 1)	0	0	0	0	0
AEs leading to treatment discontinuation, n (%) ^c	6 (2)	1 (1)	3 (1)	1 (1)	3 (2)	1 (1)	1 (1)	0
Occurring in any participants with baseline dyslipidemia, hypertension, and/or diabetes mellitus								
PE	0	1 (1)	0	1 (1)	0	1 (1)	0	0
HBV reactivation	1 (< 1)	0	1 (< 1)	0	1 (1)	0	1 (1)	0
Newly diagnosed diabetes mellitus	1 (< 1)	0	1 (< 1)	0	0	0	0	0
Erectile dysfunction	1 (< 1)	0	0	0	1 (1)	0	0	0
Worsening hypertension	1 (< 1)	0	0	0	1 (1)	0	0	0
CVA	1 (< 1)	0	1 (< 1)	0	1 (1)	0	0	0
Deaths, n (%)	5 (1)	0	2 (1)	0	3 (2)	0	2 (2)	0

Select comorbidities were identified by MedDRA, Version 28.0, using a standardized MedDRA query narrow search; the full search term used for diabetes mellitus was “hyperglycemia/new onset diabetes mellitus”. Comorbidities are not mutually exclusive as participants may have ≥ 1 comorbidity of dyslipidemia, hypertension, and diabetes mellitus and may be included in more than one group. Multiple events were counted only once per participant. ^aOverall population of all participants in ARTISTRY-1. ^bGroups are defined as participants with each comorbidity in each treatment group. ^cParticipants could have more than one AE leading to discontinuation. AE, adverse event; AKI, acute kidney injury; AMI, acute myocardial infarction; BIC/LEN, bictegravir/lenacapavir; CAD, coronary artery disease; CVA, cerebrovascular accident; DRAE, drug-related adverse event; MedDRA, Medical Dictionary for Regulatory Activities; PE, pulmonary embolism.

Safety Outcomes by Comorbidity at Baseline

- The majority of AEs were Grade ≤ 2 , and few Grade ≥ 3 or serious drug-related AEs were reported
- Few participants had AEs leading to discontinuation of BIC/LEN (**Table 4**)
- All deaths were deemed unrelated to BIC/LEN
 - Causes of death were unknown (n = 2), liver failure secondary to metastatic cancer (n = 1), sudden cardiac arrest (n = 1), and oropharyngeal cell carcinoma (n = 1)

References: 1. Fleming SP, et al. *Curr Med Res Opin.* 2025;41:2263-75. 2. Chang H-M, et al. *BMC Infect Dis.* 2022;22:2. 3. Rolle C-P, et al. *J Virus Erad.* 2020;6:100021. 4. Dubé K, et al. *AIDS Res Hum Retroviruses.* 2020;36:324-48. 5. Department of Health and Human Services. <https://clinicalinfo.hiv.gov/sites/default/files/guidelines/documents/adult-adolescent-art-regimens-adult-adolescent-art.pdf> (accessed July 23, 2026). 6. European AIDS Clinical Society. <https://eacs.sanfordguide.com/en/eacs-hiv/art/eacs-initial-regimens-art-naive-adults> (accessed July 23, 2026). 7. Gandhi RT, et al. *JAMA.* 2025;333:609-28. 8. Dvory-Sobol H, et al. *Curr Opin HIV AIDS.* 2022;17:15-21. 9. Orkin C, et al. *Lancet.* 2026;407:1249-58. 10. Cassetti L, et al. Poster TUPEB089 presented at: AIDS 2026; July 26-31, 2026; Rio de Janeiro, Brazil. 11. Biktany (bictegravir/emtricitabine/tenofovir alafenamide) USPI, Gilead Sciences, Inc., July 2025. 12. Yezugo (lenacapavir) USPI, Gilead Sciences, Inc., June 2026.

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