GILEAD | Medical Information

Biktarvy® (BIC/FTC/TAF) Use in Pregnancy

This document is in response to your request for information regarding the use of Biktarvy® (bictegravir/emtricitabine/tenofovir alafenamide [BIC/FTC/TAF]) or its components in pregnant women with HIV-1.

This document includes content from, or references to, clinical practice guidelines, and inclusion should not be interpreted as a treatment recommendation or an endorsement of the guidelines by Gilead Sciences, Inc.

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The full indication, important safety information, and boxed warnings are available at: www.gilead.com/-/media/files/pdfs/medicines/hiv/biktarvy/biktarvy_pi.

Summary

Product Labeling[1]

The recommended dosage of BIC/FTC/TAF in pregnant individuals is one tablet containing 50 mg of BIC, 200 mg of FTC, and 25 mg of TAF taken orally once daily with or without food in pregnant individuals who are virologically suppressed (HIV-1 RNA <50 c/mL) on a stable ARV regimen with no known substitutions associated with resistance to any of the individual components of BIC/FTC/TAF. Lower exposures of BIC/FTC/TAF were observed during pregnancy; therefore, VL should be monitored closely.

Available data from observational studies and the APR with BIC, FTC, and TAF use during pregnancy have not established a drug-associated risk of major birth defects, miscarriage, or other adverse maternal or fetal outcomes.

APR Data on BIC/FTC/TAF Use in Pregnancy

The APR was established to monitor fetal outcomes of pregnant women exposed to ARV agents. No significant increases in risk of overall birth defects with FTC, BIC, or TAF have been detected to date.[2]

Clinical Data on BIC/FTC/TAF Use in Pregnancy

In three phase 3 studies that compared the efficacy of switching to BIC/FTC/TAF with that of staying on EVG/COBI/FTC/(TAF or TDF) or ATV + RTV + FTC/TDF in Study 1961, DTG/ABC/3TC in Study 1489, and DTG + FTC/TAF in Study 1490, outcomes for the 28 confirmed pregnancies across all trial participants were reported.[3-5]

A phase 1b, single-arm, open-label study evaluated PK parameters and virologic outcomes in pregnant women with HIV-1 treated with BIC/FTC/TAF for up to 38 weeks. PK parameters indicated that BIC crosses the placenta, and the median $t_{1/2}$ was longer in neonates than in postpartum women. All participants maintained virologic suppression during pregnancy and delivery and through postpartum Week 18. No treatment-emergent resistance or MTCT

occurred. Most AEs were Grade 1/2 in severity and no AE-related discontinuations occurred.[6,7]

Real-World Data on BIC/FTC/TAF Use in Pregnancy

In a retrospective cohort study that evaluated outcomes in all live infants born to pregnant women with HIV within the CPHSP, of the infants exposed to BIC (n=161), most were exposed preconception and during pregnancy (52%). One case (3.1%) of MTCT occurred in a mother who started BIC during pregnancy. In a multivariate analysis that compared infant outcomes among those exposed to BIC and those exposed to non-BIC-based ART (n=1095), there was no significant increase in the risk of preterm birth with BIC exposure vs no BIC exposure (n=741; OR, 1.39; 95% CI: 0.78–2.49; *P*=0.261).[8]

In a retrospective study of pregnant women with HIV who received BIC/FTC/TAF at any point during pregnancy (N=147), virologic suppression (HIV-1 RNA <50 c/mL) at delivery was highest (96.2%) among women who initiated BIC/FTC/TAF prior to conception, with continued use in pregnancy; congenital anomalies were reported in 2.4% of infants in that group.[9]

In a cohort study that assessed birth outcomes of 144 infants born to women with HIV who received ≥7 days of BIC/FTC/TAF during pregnancy, there were no reports of neonatal deaths or perinatal HIV transmissions.[10]

PK Data on BIC/FTC/TAF Use in Pregnancy

PK data for BIC, FTC, and TAF suggest a reduction in AUC and C_{max} during pregnancy. No dose adjustments were described or recommended in the literature.[6,11-18]

Clinical Guidelines on BIC/FTC/TAF Use in Pregnancy

See below for the US DHHS guidelines for the recommendations on the use of ARVs in pregnant people.

Product Labeling[1]

Dosage and Administration

Recommended dosage in pregnant individuals

The recommended dosage of BIC/FTC/TAF in pregnant individuals is one tablet containing 50 mg of BIC, 200 mg of FTC, and 25 mg of TAF taken orally once daily with or without food in pregnant individuals who are virologically suppressed (HIV-1 RNA <50 c/mL) on a stable ARV regimen with no known substitutions associated with resistance to any of the individual components of BIC/FTC/TAF. Lower exposures of BIC/FTC/TAF were observed during pregnancy; therefore, VL should be monitored closely.

Use in Specific Populations

Pregnancy

Risk summary

Available data from observational studies and the APR with BIC, FTC and TAF use during pregnancy have not established a drug-associated risk of major birth defects, miscarriage or

other adverse maternal or fetal outcomes. Reports of pregnant individuals treated with products containing BIC, FTC, or TAF contribute to APR's overall risk assessment for these components. Available data from the APR show no statistically significant difference in the overall risk of major birth defects for BIC, FTC, or TAF compared with the background rate for major birth defects of 2.7% in a US reference population of the MACDP. The rate of miscarriage is not reported in the APR. The estimated background rate of miscarriage in the clinically recognized pregnancies in the US general population is 15 to 20%.

BIC/FTC/TAF safety has also been evaluated in an open-label trial that demonstrated safety findings that were consistent with other trials in adults.

In animal reproduction studies, no evidence of adverse developmental outcomes was observed with the components of BIC/FTC/TAF at exposures that were either not maternally toxic (rabbits) or greater than (rats and mice) those in humans at the recommended human dose. During organogenesis, systemic exposures (AUC) to BIC were approximately 36 (rats) and 0.6 times (rabbits), to FTC were approximately 60 (mice) and 108 times (rabbits), and to TAF were approximately 2 (rats) and 78 times (rabbits) the exposure at the recommended human dose of BIC/FTC/TAF. In rat pre/postnatal development studies, maternal systemic exposures (AUC) were 30 times (BIC), 60 times (FTC), and 19 times (TDF) the exposures of each component in humans at the recommended human dose.

APR Data on BIC/FTC/TAF Use in Pregnancy[2]

Healthcare providers are encouraged to register patients who become pregnant to the APR by calling 1-800-258-4263.

The APR is intended to provide an early signal of teratogenicity associated with prenatal use of ARVs. The registry is ongoing; healthcare providers are strongly encouraged to report eligible patients to the registry. Further information is available at https://apregistry.com/.

BIC/FTC/TAF Component Data in the APR

The June 2025 interim report included prospective reports of 24,443 pregnancies with follow-up data through January 31, 2025. For FTC and TAF, there are sufficient numbers of first-trimester exposures to detect at least a 1.5-fold increase in the risk of overall birth defects and a 2-fold increase in the risk of birth defects in the most common classes. No such increase has been detected to date. The prevalence of pregnancies exposed to TAF in the first trimester was 4.06% (95% CI: 3.13–5.16%), which is significantly higher than the reports included in the CDC MACDP population-based birth defects surveillance system (2.72%; 95% CI: 2.68–2.76%) but not those included in the TBDR (4.66%; 95% CI: 4.64–4.67%). A detailed review of cases did not identify any pattern of birth defects related to TAF. BIC reached the threshold of 200 first trimester exposed cases during the 31 July 2022 report period with a prevalence of 4.26% (95% CI: 2.06 - 7.69). The prevalence of birth defects is now 4.39% (95% CI: 3.04 – 6.11), and is statistically significantly elevated compared with MACDP (2.72%; 95% CI: 2.68 - 2.76). BIC has never been statistically significantly different from TBDR (4.66%; 95% CI: 4.64 - 4.67). A detailed review of cases did not identify a pattern of birth defects for BIC.

Table 1. APR: Number of Birth Defects by Trimester of Earliest Exposure[2]

Drug Regimen	Pregnancies Enrolled	First Trimester		Second/Third Trimester	
		Defects per Live Births[a]	Prevalence, % (95% CI)[b]	Defects per Live Births[a]	Prevalence, % (95% CI)[b]
Any ARV-containing	24,443	382/12,853	3 (2.7 , 3.3)	292/10,273	2.8 (2.5 , 3.2)
FTC-containing	7939	165/5430	3 (2.6 , 3.5)	56/2037	2.7 (2.1 , 3.6)
TAF-containing	2044	63/1552	4.1 (3.1 , 5.2)	16/394	4.1 (2.3 , 6.5)
BIC-containing	992	33/752	4.4 (3.0 , 6.1)	4/206	1.9 (0.5 , 4.9)

[a]Proportion of defects was calculated by dividing the number of defects that met the CDC criteria by the number of live births reported.
[b]Prevalence and 95% CIs were reported for drugs associated with ≥200 defect -positive live births, where the earliest exposure to drug was the first trimester.

Clinical Data on BIC/FTC/TAF Use in Pregnancy

Phase 3 Studies: 1961, 1489, and 1490

Study GS-US-380-1961 compared switching to BIC/FTC/TAF (n=234) with staying on a baseline regimen of EVG/COBI/FTC/(TAF or TDF) or ATV + RTV + FTC/TDF (n=236) in virologically suppressed women with HIV-1. Study participants were enrolled from completed Gilead-sponsored studies. Participants who became pregnant in the BIC/FTC/TAF arm discontinued the study drug, while participants in the baseline regimen arm were treated with a regimen per the investigator's discretion. Among participants who received BIC/FTC/TAF, 12 women became pregnant, with 7 live births (1 infant with patent urachus), 1 fetal death of twins (not attributed to study drug), 2 elective abortions, and 2 pregnancy outcomes unknown.[3] In the baseline regimen arm, 7 women became pregnant through Week 48, with 5 live births (1 with twins) and 2 spontaneous abortions.[4]

Studies GS-US-380-1489 and GS-US-380-1490 compared BIC/FTC/TAF (n=314 in Study 1489; n=320 in Study 1490) to DTG-containing regimens (DTG/ABC/3TC in Study 1489 [n=315] and DTG + FTC/TAF in Study 1490 [n=325]. Women with confirmed pregnancies while on the study drug were instructed to either discontinue or interrupt the study drug. In Study 1489, 3 women became pregnant; there were 2 pregnancies in the BIC/FTC/TAF arm (a full-term birth and a spontaneous abortion) and 1 elective termination in the DTG/ABC/3TC arm. In Study 1490, 10 women had 13 confirmed pregnancies. Pregnancy outcomes in the BIC/FTC/TAF arm consisted of uncomplicated term birth (n=4), spontaneous abortion (n=3), elective termination (n=1), and unknown outcome (n=1). In the DTG + FTC/TAF arm, 3 uncomplicated term births and 1 elective termination were observed.[5]

Phase 1b Study

A phase 1b, single-arm, open-label study evaluated PK parameters and virologic outcomes in 33 pregnant women with HIV-1 treated with BIC/FTC/TAF for up to 38 weeks. Participants were aged between 18 and 40 years, with a VL <50 c/mL on a stable ARV regimen for ≥6 months. Intensive steady-state PK sampling and HIV VL testing were performed during pregnancy and 6 to 12 weeks postpartum; neonates underwent sparse washout PK sampling (6 and 12 weeks).[6,7]

BIC plasma concentrations during the second/third trimesters were generally lower than those observed at postpartum Weeks 6 and 12; however, C_{trough} levels remained above the $paEC_{95}$ value of 0.162 mcg/mL. The mean BIC AUC_T in pregnant women was similar to that observed in non-pregnant adult PWH (Table 2).[6,7]

Table 2. Phase 1b Study: BIC PK Outcomes[6,7]

Parameter, Mean (%CV)	Second Trimester (n=21)	Third Trimester (n=30)	Postpartum Week 6 (n=31)	Postpartum Week 12 (n=32)	Third Trimester vs Postpartum Week 12, %GLSM Ratio (90% CI)	Non-Pregnant Adult PWH[1]
Total AUC_T, h × mcg/mL	62.8 (32.2)	60.2 (29.1)	135 (26.9)	148 (28.5)	40.6 (36.8–44.8)	102 (26.9)
Unbound AUC_T, h × mcg/mL	0.224 (42)	0.219 (33.9)	0.354 (34.2)	0.374 (32.2)	58.8 (52.7–65.7)	–
C_{max}, mcg/mL	5.82 (30.1)	5.37 (25.9)	9.77 (23.3)	11 (24.9)	48.2 (43–53.9)	6.15 (22.9)
C_{trough}, mcg/mL	1.05 (45.2)	1.07 (41.7)	3.53 (38.4)	3.64 (34.1)	29 (25.7–32.7)	2.61 (35.2)

Abbreviation: GLSM=geometric least-squares mean.

PK parameters indicated that BIC crosses the placenta (mean [%CV] cord blood to maternal blood plasma concentration ratio: 1.4 [35%]; n=29), and the median $t_{1/2}$ was longer in neonates than in postpartum women (43.1 hours [n=10] vs ~18 hours, respectively).[6,7]

All participants maintained virologic suppression during pregnancy and delivery and through to postpartum Week 18 (1 discontinuation due to protocol violation). No treatment-emergent resistance occurred during the study. No MTCT occurred.[6,7]

Most AEs were Grade 1/2 in severity (Table 3). No AE-related discontinuations occurred.[6,7]

Table 3. Phase 1b Study: Maternal and Neonatal Safety Outcomes[6,7]

Safety Outcomes, n (%)	Maternal Outcomes (N=33)	Neonatal Outcomes (N=29)
Any AE	26 (79)	12 (41)
Common AEs	Back pain: 4 (12) Gestational diabetes: 4 (12) Anemia: 3 (9); False labor: 3 (9) Preeclampsia: 3 (9)	Neonatal jaundice: 3 (10) Respiratory distress: 3 (10)
Grade ≥3 AEs	2 (6)[a]	1 (3)[b]
Drug-related AEs	1 (3)[c]	0
Serious AEs	6 (18)	5 (17)

[a]Gestational diabetes and pyrexia, n=1 each. [b]Neonatal asphyxia. [c]False labor.

Real-World Data on BIC/FTC/TAF Use in Pregnancy

Canadian Retrospective Cohort Study of Outcomes in Infants Exposed to BIC[8]

Study design

A population-based, multicenter, retrospective cohort study evaluated outcomes in all live infants born to pregnant women with HIV within the CPHSP and included a comparison of outcomes among those who were exposed to BIC-based ART (n=161) and those exposed to non-BIC–based ART (n=1095) during pregnancy between 2018 and 2023. The primary outcome was the rate of congenital abnormalities, preterm births, birth weights, and perinatal HIV transmission.

Results

There was no significant association between the timing of BIC exposure and perinatal outcomes (*P*>0.05; Table 4); however, 1 case (3.1%) of MTCT occurred in a mother who started BIC during pregnancy.

Table 4. Infant Outcomes by Timing of BIC Exposure (Wong et al)[8]

Outcomes, n/N (%)	Timing of BIC Exposure			*P*-Value
	Preconception and Pregnancy (n=81)	Started in Pregnancy (n=41)	Preconception and Discontinued in Pregnancy (n=34)	
Delivery <37 weeks gestation	17/80 (21.3)	8/41 (19.5)	3/34 (8.8)	0.277
Birth weight <2.5 kg	15/79 (19)	6/41 (14.6)	3/34 (8.8)	0.386
SGA[a]	13/79 (16.5)	7/40 (17.5)	7/34 (20.6)	0.869
Congenital anomalies	5/76 (6.6)	2/39 (5.1)	1/31 (3.2)	0.894
Perinatal HIV transmission	0/67 (0)	1/32 (3.1)	0/32 (0)	0.489

[a]SGA was defined as birth weight <10th percentile.

In a univariate analysis of perinatal outcomes according to BIC exposure or non-BIC–based ART exposure, there were significant between-group differences in the following outcomes (each, *P*<0.05): maternal adherence to ART during pregnancy, continuation of ART at delivery and postpartum, preterm birth, maternal race, and maternal transmission risk category. In a multivariate analysis (n=741), there was no significant increase in the risk of preterm birth with BIC exposure vs non-BIC–based ART exposure (OR, 1.39; 95% CI: 0.78–2.49; *P*=0.261); however, there was a greater risk among those in the IDU risk category (OR, 1.94; 95% CI: 1.02–3.71; *P*=0.044) and mothers with a VL >400 c/mL nearest to delivery (OR, 4.44; 95% CI: 1.84–10.74; *P*<0.001). Select outcomes are shown in Table 5.

Table 5. Select Univariate Analyses of Infant Outcomes (N=1256; Wong et al)[8]

Outcomes, n (%) or n/N (%)		BIC Exposure (n=161)	Non-BIC–Based ART Exposure (n=1095)	*P*-Value
Adherence to ART during pregnancy	Excellent	129 (82.2)	937 (89)	0.014
	Suboptimal	28 (17.8)	116 (11)	
	Unknown	4	42	
ART continuation at delivery		155/158 (98.1)	1073/1077 (99.6)	0.049
ART continuation postpartum		132/139 (95)	959/979 (98)	0.031
Preterm birth		31/160 (19.4)	139/1081 (12.9)	0.025
Congenital anomalies		8/151 (5.3)	58/1057 (5.5)	0.924
Birth weight <2.5 kg		27/159 (17)	127/1071 (11.9)	0.069
SGA		28/158 (17.7)	176/1069 (16.5)	0.692

US Multicenter Study[9]

Study design and demographics

A multicenter, retrospective study was conducted at four clinical sites across the US and assessed outcomes of pregnant women with HIV who received BIC/FTC/TAF at any point during pregnancy. Outcomes were stratified by patients who initiated BIC/FTC/TAF prior to pregnancy and either continued use or discontinued use, and patients who initiated BIC/FTC/TAF during pregnancy (N=147).

The overall baseline demographics were the following: mean (range) age, 29 (16–43) years; Non-Hispanic Black/White/Hispanic/Other race, 75.5%/1.4%/21.7%/1.4%; HIV-1 RNA <50 c/mL, 57.3%; and CD4 <200 cells/mm^3, 11.8%.

Results

The rate of virologic suppression (HIV-1 RNA <50 c/mL) at delivery was highest in the group that initiated BIC/FTC/TAF prior to pregnancy with continued use in pregnancy (Table 6).

Table 6. Virologic Suppression at Delivery and Perinatal Outcomes (Holt et al)[9]

Key Outcomes		Overall (N=147)	Preconception BIC/FTC/TAF; Continued Use (n=83)	Initiated BIC/FTC/TAF During Pregnancy (n=59)	Preconception BIC/FTC/TAF; Discontinued Use (n=5)
HIV-1 RNA VL at delivery,[a] n/N (%)	<50 c/mL	131/145 (90.3)	78/81 (96.2)	50/59 (84.7)	3/5 (60)
	<200 c/mL	137/145 (94.5)	79/81 (97.5)	54/59 (91.5)	4/5 (80)
Gestational age at delivery, mean (range), weeks		38.1 (26–41)	38.1 (26–40.5)	37.9 (30–41)	39 (38.2–40.3)
Birth weight, mean (range), g		3043 (450–4850)	3126 (450–4560)	3176 (2863–3360)[b]	2911 (990–4850)
Preterm birth (<37 weeks), n (%)		26 (17.7)	16 (19.2)	10 (16.9)	0
Cesarean delivery for HIV, n		6	0	5	1

[a]VL within 4 weeks of birth. [b]n=57; data were missing for 2 infants.

Safety

A congenital anomaly was reported in the overall population at a rate of 4.1% (6/147). In women who initiated BIC/FTC/TAF prior to pregnancy and continued use, congenital anomaly was reported in 2.4% of infants (each, n=1: tetralogy of Fallot and penis chordae; mosaic 8p with atrial septal defect and agenesis of the corpus collosum). In women who initiated BIC/FTC/TAF during pregnancy, congenital anomaly was reported in 6.7% of infants (each, n=1: bicuspid aortic valve and ventricular septal defect, 14 mB duplication resulting in hypotonia, heterotaxy syndrome, and supernumerary digit). One perinatal HIV transmission (intrauterine infection) was reported in a patient who entered prenatal care and initiated BIC/FTC/TAF at 31 weeks and had probable acute HIV infection during pregnancy (HIV RNA 20,000 c/mL); HIV RNA was undetectable by 34 weeks.

US Cohort Study[10]

Study design and demographics

A cohort study evaluated birth outcomes among 144 infants (including 2 sets of twins) born between September 2018 and October 2023 to 134 unique pregnant women with HIV aged 18 to 45 years who had received ≥7 days of BIC/FTC/TAF during pregnancy.

Baseline demographics and disease characteristics nearest to delivery were as follows: median (IQR) age, 29.7 (26.1–33.9) years; Black or African American, 71%; maternal HIV RNA <50 c/mL, 82%; and median (IQR) CD4 cell count, 466.5 (309–744) cells/mm^3. A total of 53% of pregnant women had initiated BIC/FTC/TAF prior to conception, and 99 infants (69%) were exposed to BIC/FTC/TAF during the first trimester.

Results

The overall mean (SD) gestational age at birth was 38.2 (1.5) weeks. There were 5 (5.1%) congenital anomalies among pregnancies with first trimester BIC/FTC/TAF exposure, including Dandy-Walker malformation, Jacob's syndrome, polydactyly, Turner syndrome, and ventricular septal defect. There were no neonatal deaths or perinatal HIV transmissions reported.

Case Reports

There are limitations in the interpretation of case reports. Case reports cannot be generalized. Unlike controlled clinical trials, causality cannot be inferred based on uncontrolled observational data. In addition, incidence or prevalence cannot be estimated due to the lack of a representative population sample. Other limitations of case reports include the retrospective design and publication bias.[19]

Case studies evaluating the use of BIC/FTC/TAF in pregnant women with HIV-1 have been published in the literature. No significant adverse outcomes were reported in several case studies.[20-22]

One case report described breakthrough viremia in a woman during her third trimester of pregnancy who switched from BIC/FTC/TAF from cabotegravir/rilpivirine at 15 weeks gestation (first detectable VL at 35 weeks gestation; peak VL of 1180 c/mL at 37 weeks). The patient was switched to a different HIV regimen at 38 weeks gestation and remained viremic through delivery. No vertical transmission occurred. The patient achieved virological suppression after delivery and ultimately was switched back to BIC/FTC/TAF 2 months after delivery.[23]

PK Data on BIC/FTC/TAF Use in Pregnancy

BIC

A prospective, open-label, multicenter, phase 4 study (IMPAACT 2026) evaluated PK parameters and safety outcomes in pregnant women with HIV (N=27) who received 50 mg oral BIC once daily during the second and/or third trimester. Intensive steady-state 24-hour PK sampling and HIV VL testing were performed during pregnancy and 6 to 12 weeks postpartum. Relative to paired postpartum data (2-sided significance level, 0.1), the median BIC AUC_{0-24} and C_{max} were 46% (P=0.002) and 35% (P<0.1) lower, respectively, at the second trimester (n=12) and 52% (P<0.0001) and 44% (P<0.1) lower, respectively, at the third trimester (n=24). Three women had C_{trough} levels below the BIC $paEC_{95}$ during the third trimester. Seven of the 12 women (58%) with data in the second trimester and 16 of the 27 women (59%) in the third trimester had a BIC AUC <10th percentile for non-pregnant women, and none had an HIV VL ≥40 c/mL. Five women had ≥1 Grade 3 AE and none of the AEs were attributed to BIC use. All 15 infants with sufficient virologic test results (defined as HIV- on two tests, taken after 1 month of age and after 4 months of age) were HIV-free; an additional 9 infants were determined to be probably HIV-free; 2 infants did not have a definitive HIV status. Two infants had Grade 1 congenital abnormalities (preauricular cyst, n=1; ventricular septal defect related to BIC, n=1).[18]

Another study evaluated PK outcomes in pregnant women with HIV (N=9) during the third trimester and 4 to 6 weeks postpartum, as well as in cord blood at delivery. Blood samples were taken predose and at regular intervals up to 24 hours after dosing. Although BIC

exposure was lower in the third trimester than at postpartum, C_{trough} levels remained above the estimated BIC paEC$_{95}$ in all participants throughout, and no incidences of virologic failure occurred. No infants acquired HIV, and no congenital anomalies were reported.[17]

FTC[11-14]

PK studies have reported lower FTC AUC during pregnancy compared to the postpartum period; however, this was not associated with virological failure or perinatal transmission.

TAF[16]

Among women who received a TAF 10 mg + COBI-containing regimen, TAF exposure was not significantly different between pregnancy (second or third trimester) and postpartum assessments. Lower TAF exposures were observed in women on regimens containing TAF 25 mg during the second and third trimesters than during postpartum (43% lower, *P*=0.091, and 33% lower, *P*=0.0035, respectively). TAF exposure levels during pregnancy were consistent with historical data in non-pregnant adults. In both arms, ≥87% had HIV-1 RNA <50 c/mL at delivery. No perinatal transmission occurred in either arm.

Additional PK Data[15,24]

PK data evaluating TAF and BIC/FTC/TAF in pregnant women living with HIV-1 have been published in literature. A reduction in AUC during the third trimester compared to postpartum was observed; however, MTCT did not occur.

Clinical Guidelines on BIC/FTC/TAF Use in Pregnancy

Please see the US Department of Health and Human Services guidelines for recommendations on the use of ARVs in pregnant people: https://clinicalinfo.hiv.gov/sites/default/files/guidelines/documents/perinatal-hiv/guidelines-perinatal.pdf.

References

1. Enclosed, Gilead Sciences Inc. BIKTARVY® (bictegravir, emtricitabine, and tenofovir alafenamide) tablets, for oral use. US Prescribing Information. Foster City, CA.
2. Antiretroviral Pregnancy Registry Steering Committee. The Antiretroviral Pregnancy Registry Interim Report: 01 January 1989 Through 31 January 2025. Morrisville, NC. 2025.
3. Kityo C, Hagins D, Koeing E, et al. Longer-term (96-week) Efficacy and Safety of Switching to Bictegravir, Emtricitabine and Tenofovir Alafenamide (B/F/TAF) in Women [Presentation]. Paper presented at: 10th IAS Conference on HIV Science (IAS 2019); 21-24 July, 2019; Mexico City, Mexico.
4. Kityo C, Hagins D, Koenig E, et al. Switching to Fixed-Dose Bictegravir, Emtricitabine, and Tenofovir Alafenamide (B/F/TAF) in Virologically Suppressed HIV-1 Infected Women: A Randomized, Open-Label, Multicenter, Active-Controlled, Phase 3, Noninferiority Trial. *J Acquir Immune Defic Syndr.* 2019;82(3):321-328.
5. Orkin C, DeJesus E, Sax PE, et al. Three-Year Outcomes of the Fixed-Dose Combination Bictegravir, Emtricitabine, and Tenofovir Alafenamide vs Dolutegravir-Containing Regimens for Initial Treatment of HIV-1 Infection: Week 144 Results from Two Randomised, Double-Blind, Multicentre, Phase 3, Non-Inferiority Trials. *The Lancet HIV.* 2020;7:e389–400.

6. Zhang H, Martin H, Lin L, et al. Pharmacokinetics (PK), Safety and Efficacy of Bictegravir/Emtricitabine/Tenofovir Alafenamide (B/F/TAF) in Virologically Suppressed Pregnant Women With HIV. Paper presented at: the 12th IAS Conference on HIV Science; July 23-26, 2023; Brisbane, Australia.
7. Zhang H, Hindman JT, Lin L, et al. A study of the pharmacokinetics, safety, and efficacy of bictegravir/emtricitabine/tenofovir alafenamide in virologically suppressed pregnant women with HIV. *AIDS.* 2024;38(1):F1-F9.
8. Wong JMH, Balleny R, Lee T, et al. Perinatal and Infant Outcomes After Bictegravir Exposure in Pregnancy: a Canadian Surveillance Study [Poster 0997]. Paper presented at: Conference on Retroviruses and Opportunistic Infections (CROI); March 9-12, 2025; San Francisco, CA.
9. Holt LM, Short WR, Momplaisir F, et al. Bictegravir Use During Pregnancy: A Multi-Center Retrospective Analysis Evaluating HIV Viral Suppression and Perinatal Outcomes [Accepted Manuscript]. *Clin Infect Dis.* 2024.
10. Olivero R, Williams P, Sawyer G, et al. Birth Outcomes Following Bictegravir Use During Pregnancy [Poster 00933]. Paper presented at: Conference on Retroviruses and Opportunistic Infections (CROI); March 3-6, 2024; Denver, Colorado.
11. Best B, Stek A, Hu C, et al. High-dose lopinavir and standard-dose emtricitabine pharmacokinetics during pregnancy and postpartum [Poster 629]. Paper presented at: 15th Conference on Retroviruses and Opportunistic Infections February 3 - 6, 2008; Boston, Massachusetts.
12. Colbers AP, Hawkins DA, Gingelmaier A, et al. The pharmacokinetics, safety and efficacy of tenofovir and emtricitabine in HIV-1-infected pregnant women. *AIDS.* 2013;27(5):739-748.
13. Stek A, Best B, Luo W, et al. Effect of pregnancy on emtricitabine pharmacokinetics. *HIV Med.* 2012;13(4):226-235.
14. Valade E, Treluyer JM, Dabis F, et al. Modified renal function in pregnancy: impact on emtricitabine pharmacokinetics. *Br J Clin Pharmacol.* 2014;78(6):1378-1386.
15. Bukkems V, Necsoi C, Hidalgo-Tenorio C. Tenofovir alafenamide plasma concentrations are reduced by half in pregnant women living with HIV: data from the PANNA Network. Paper presented at: International Workshop on Clinical Pharmacology of HIV, Hepatitis and Other Antiviral Drugs 2021; September 20-22, 2021; Virtual Meeting.
16. Brooks KM, Momper JD, Pinilla M, et al. Pharmacokinetics of tenofovir alafenamide with and without cobicistat in pregnant and postpartum women living with HIV: Results from IMPAACT P1026s. *AIDS.* 2020;35(3):407-417.
17. Van Der Wekken-Pas L, Hidalgo-Tenorio C, Rockstroh JK, et al. Lower Exposure to Bictegravir in Third Trimester in Pregnant Women Livi g with HIV [Oral Abstract 7]. Paper presented at: International Workshop on Clinical Pharmacology of HIV, Hepatitis, and Other Antiviral Drugs; September 11-13, 2023; Rome, Italy.
18. Powis KM, Pinilla M, McMorrow F, et al. Pharmacokinetics and Safety of Bictegravir in Pregnant and Postpartum Persons With HIV and Their Infants [Author Manuscritp]. *J Acquir Immune Defic Syndr.* 2025;98(3):300-307.
19. Nissen T, Wynn R. The Clinical Case Report: A Review of Its Merits and Limitations. *BMC Res Notes.* 2014;7:264.
20. Le MP, Ferre VM, Mazy F, et al. Bictegravir pharmacokinetics in a late-presenting HIV-1-infected pregnant woman: a case report. *J Antimicrob Chemother.* 2021.
21. Nissim O M, Lazenby G. B. M, MSCR, gynecology Dooa. The Use of Integrase Strand Transfer Inhibitors to Treat HIV in Pregnancy. *Journal of Midwifery &Women's Health,.* 2021;66(3):403-406.
22. Alsulami S, Alotaibi SN, Damfu N, Aljefri DM, Altayib HA, Alharbi M. Efficacy and Safety of Bictegravir-Based Regimen in Pregnant Women Living with HIV: A Case Report. *J Int Assoc Provid AIDS Care.* 2022;21:1-4.
23. Miller C, Giguere P, McGuinty M, Angel JB. Breakthrough HIV viraemia on bictegravir/emtricitabine/tenofovir alafenamide in the third trimester of pregnancy. *J Antimicrob Chemother.* 2024:dkae197.
24. Bukkems VE, Hidalgo-Tenorio C, Garcia C, et al. *First pharmacokinetic data of bictegravir in pregnant women living with HIV.* 2021.

Abbreviations

%CV=percent coefficient of variation
3TC=lamivudine
ABC=abacavir
AE=adverse event
APR=Antiretroviral Pregnancy Registry
ART=antiretroviral therapy
ARV=antiretroviral
ATV=atazanavir
AUC=area under the concentration-time curve
$AUC_{0–24}$=area under the concentration-time curve from time 0 through 24 hours post dose
AUC_{τ}=area under the concentration-time curve over the dosing interval
BIC=bictegravir
c/mL=copies per mL
CDC=Centers for Disease Control
C_{max}=peak concentration
COBI=cobicistat
CPHSP=Canadian Perinatal HIV Surveillance Program
C_{trough}=trough plasma concentration
DTG=dolutegravir
EVG=elvitegravir
FTC=emtricitabine
IDU=injection drug use
MACDP=Metropolitan Atlanta Congenital Defects Program
MTCT=mother-to-child transmission
OR=odds ratio
$paEC_{95}$=protein-adjusted effective concentration to cause inhibition by 95%
PK=pharmacokinetic
PWH=people with HIV
RTV=ritonavir
SGA=small for gestational age
$t_{1/2}$=elimination half-life
TAF=tenofovir alafenamide
TDF=tenofovir disoproxil fumarate
TBDR=Texas Birth Defects Registry
VL=viral load

Product Label

For the full indication, important safety information, and boxed warning(s), please refer to the Biktarvy US Prescribing Information available at: www.gilead.com/-/media/files/pdfs/medicines/hiv/biktarvy/biktarvy_pi.

Follow-Up

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FDA MedWatch Program by ☎ 1-800-FDA-1088 or ✉MedWatch, FDA, 5600 Fishers Ln, Rockville, MD 20852 or www.accessdata.fda.gov/scripts/medwatch

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