

Effect of HIV Drugs on Hormone Therapy for Gender Affirmation

Revised October 2024

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Notes on recommendations and QT interval changes

- Recommendations for dose changes assume that the magnitude of the drug-drug interaction is less pronounced for transdermal, topical or intramuscular applications than for oral drug administration as the first-pass metabolism is avoided.
- Recommendations for dose changes are empirical and based on doses/formulations available in the UK; additional doses/formulations may be available in other countries.
- Androgen deprivation treatment may prolong the QT interval. Caution should be taken when using with antiretroviral drugs that can potentially prolong the QT interval (i.e., ATV alone, ATV/r, ATV/cobi, LPV/r, EFV, RPV, FTR).

Feminizing Hormones

		HIV drugs with no predicted effect or which can be used with standard doses	HIV drugs predicted to inhibit metabolism	HIV drugs predicted to induce metabolism
		DOR, RPV, BIC, CAB, DTG, RAL, LEN, MVC, ABC, FTC, 3TC, TAF, TDF, ZDV	ATV alone, ATV/cobi, DRV/cobi, EVG/cobi, FTR	ATV/r, DRV/r, LPV/r, EFV, ETV, NVP
Conjugated estrogens†	Starting dose	1.25-2.5 mg/day	0.625-1.25 mg/day	Increase estradiol dosage as needed based on clinical effects and monitored hormone levels.
	Average dose	5 mg/day	2.5 mg/day	
	Maximum dose	10 mg/day	5 mg/day	
Estradiol oral	Starting dose	2 mg/day	1 mg/day	Increase estradiol dosage as needed based on clinical effects and monitored hormone levels.
	Average dose	4 mg/day	2 mg/day	
	Maximum dose	8 mg/day	4 mg/day	
Estradiol gel (preferred for >40 y and/or smokers)	Starting dose	0.75 mg twice daily	0.5 mg twice daily	Increase estradiol dosage as needed based on clinical effects and monitored hormone levels.
	Average dose	0.75 mg three times daily	0.5 mg three times daily	
	Maximum dose	1.5 mg three times daily	1 mg three times daily	
Estradiol patch (preferred for >40 y and/or smokers)	Starting dose	25 µg/day	25 µg/day*	Increase estradiol dosage as needed based on clinical effects and monitored hormone levels.
	Average dose	50-100 µg/day	37.5-75 µg/day	
	Maximum dose	150 µg/day	100 µg/day	
Ethinylestradiol	Dose	No interaction expected, but not recommended due to thrombotic risks	Not recommended	Not recommended
Medroxy-progesterone	Starting dose	2.5 mg/day	2.5 mg/day	Increase medroxyprogesterone dosage as needed based on clinical effects and monitored hormone levels.
	Average dose	5-10 mg/day	5-7.5 mg/day	
	Maximum dose	10 mg/day	7.5 mg/day	
Micronised Progesterone	Starting dose	100 mg/day	50 mg/day	Increase progesterone dosage as needed based on clinical effects and monitored hormone levels.
	Average dose	100-200 mg/day	50-100 mg/day	
	Maximum dose	200 mg/day	100 mg/day	

† Conjugated estrogen is associated with high thromboembolic risk and therefore should be avoided.

* Matrix type transdermal patch can be cut in order to reduce the amount of hormone delivered per day.

Androgen Blockers

		HIV drugs with no predicted effect or which can be used with standard doses	HIV drugs predicted to inhibit metabolism	HIV drugs predicted to induce metabolism
		DOR, RPV, BIC, CAB, DTG, RAL, FTR, MVC, ABC, FTC, 3TC, TAF, TDF, ZDV	ATV alone, ATV/cobi, ATV/r, DRV/cobi, DRV/r, EVG/cobi, LPV/r, LEN	EFV, ETV, NVP
Bicalutamide	Starting dose	25 mg/day	A dose reduction for bicalutamide can be considered if side effects are noted.	Increase bicalutamide dosage as needed based clinical effects and monitored hormone levels.
	Average dose	25-50 mg/day		
	Maximum dose	50 mg/day		
Cyproterone acetate	Starting dose	50 mg/day	25 mg/day	Increase cyproterone dosage as needed based on clinical effects and monitored hormone levels.
	Average dose	150 mg/day	75 mg/day	
	Maximum dose	150 mg/day	75 mg/day	
Dutasteride	Dose	0.5 mg/day	A reduction of dutasteride dosing frequency can be considered if side effects are noted.	Increase dutasteride dosage as needed based on clinical effects and monitored hormone levels.
Finasteride	Starting dose	2.5 mg/day	Finasteride has a large safety margin. No dose adjustment required.	Increase finasteride dosage as needed based on clinical effects and monitored hormone levels.
	Average dose	2.5 mg/day		
	Maximum dose	5 mg/day		
Goserelin	Dose	3.6 mg/month	No interaction expected. No dose adjustment required.	No interaction expected. No dose adjustment required.
Leuprorelin acetate	Dose	3.75 mg/month	No interaction expected. No dose adjustment required.	No interaction expected. No dose adjustment required.
Spironolactone	Starting dose	50 mg/day	No interaction expected. No dose adjustment required.	No interaction expected. No dose adjustment required.
	Average dose	150 mg/day		
	Maximum dose	400 mg/day		
Triptorelin	Dose	3.75 mg/month	No interaction expected. No dose adjustment required.	No interaction expected. No dose adjustment required.

Colour Legend No clinically significant interaction expected. Potential interaction which may require dosage adjustment and/or close monitoring. Coadministration not recommended.

Abbreviations: ABC abacavir, ATV atazanavir, BIC bictegravir, CAB cabotegravir, DOR doravirine, DRV darunavir, DTG dolutegravir, EFV efavirenz, ETV etravirine, EVG elvitegravir, FTR fostemsavir, LEN lenacapavir, LPV lopinavir, MVC maraviroc, RAL raltegravir, RPV rilpivirine, TAF tenofovir alafenamide, TDF tenofovir-DP, ZDV zidovudine, 3TC lamivudine, /cobi cobicistat, /r ritonavir

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Androgen Preparations

		HIV drugs with no predicted effect or which can be used with standard doses	HIV drugs predicted to inhibit metabolism	HIV drugs predicted to induce metabolism
		DOR, RPV*, BIC, CAB*, DTG, RAL, FTR, LEN, MVC ABC, FTC, 3TC, TAF, TDF, ZDV	ATV alone, ATV/cobi, ATV/r, DRV/cobi, DRV/r, EVG/cobi, LPV/r	EFV, ETV, NVP
Testosterone topical gel 1%	Initial low dose	12.5-25 mg in the morning	12.5-25 mg in the morning	Increase testosterone dosage as needed based on clinical effects and monitored hormone levels.
	Initial average dose	50 mg in the morning	25-50 mg in the morning	
	Maximum dose	100 mg in the morning	50-100 mg in the morning	
Testosterone enanthate or cypionate	Initial low dose	Not applicable	Not applicable	Increase testosterone dosage as needed based on clinical effects and monitored hormone levels.
	Initial average dose	50-100 mg/week	25-50 mg/week	
	Maximum dose	Not applicable	Not applicable	
Testosterone undecanoate	Initial low dose	Not applicable	Not applicable	Increase testosterone dosage as needed based on clinical effects and monitored hormone levels.
	Initial average dose	750 mg IM, repeat after 4 weeks and then every 10 weeks	375-500 mg IM, repeat after 4 weeks and then every 10 weeks	
	Maximum dose	Not applicable	Not applicable	
Mixed testosterone esters	Initial low dose	Not applicable	Not applicable	Increase testosterone dosage as needed based on clinical effects and monitored hormone levels.
	Initial average dose	250 mg/2-3 weeks	125 mg/2-3 weeks	
	Maximum dose	Not applicable	Not applicable	

* High testosterone doses combined with training may enhance muscle growth and enhance the blood flow in muscles, thereby increasing the release of long-acting CAB/RPV from the depot injection and subsequently increasing the elimination of CAB/RPV which may result in suboptimal levels at the end of the dosing interval. Use with caution and consider therapeutic drug monitoring of cabotegravir and rilpivirine and/or intensified viral load monitoring.

Colour Legend ■ No clinically significant interaction expected. ■ Potential interaction which may require dosage adjustment and/or close monitoring.

References for hormone therapy dosage recommendations in absence of antiretroviral drugs

- Good practice guidelines for the assessment and treatment of adults with gender dysphoria. [Royal College of Psychiatrists, London, 2013, Document CR181.](#)
- Endocrine Treatment of gender-dysphoric/gender-incongruent persons: An Endocrine Society clinical practice guideline. [Hembree WC et al. J Clin Endocrinol Metab, 2017, 102 \(11\):3869-3903.](#)
- Guidelines for the primary and gender-affirming care of transgender and gender nonbinary people. [Department of Family & Community Medicine, University of California, 2016.](#)
- Endocrine care of transpeople part I. A review of cross-sex hormonal treatments, outcomes and adverse effects in transmen. [Meriggiola MC, Gava G. Clin Endocrinol \(Oxf\). 2015, 83\(5\):597-606.](#)

Abbreviations: ABC abacavir ATV atazanavir BIC bicitegravir CAB cabotegravir DOR doravirine DRV darunavir DTG dolutegravir EFV efavirenz
ETV etravirine EVG elvitegravir FTC emtricitabine FTR fostemsavir LEN lenacapavir LPV lopinavir MVC maraviroc NVP nevirapine
RAL raltegravir RPV rilpivirine TAF tenofovir alafenamide TDF tenofovir-DF ZDV zidovudine 3TC lamivudine /cobi cobicistat /r ritonavir

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