



Resource: ART Drug-Drug Interactions

April 2023

Table 47: Gender-Affirming Hormones [Hembree, et al. 2017; Irving and Lehault 2017] (also see drug package inserts)		
→ Cyproterone acetate, estradiol, finasteride, goserelin, leuprolide acetate, spironolactone, testosterone		
Class or Drug	Mechanism of Action	Clinical Comments
ARV medications, <i>all</i>	<ul style="list-style-type: none"> • Cyproterone acetate: Interaction with ARVs has not been studied. • Estradiol: Interaction between ARVs and estradiol in transgender women has not been studied. • Finasteride: Interaction with ARVs has not been studied. Finasteride is metabolized by CYP3A4; levels may increase when taken concomitantly with COBI-boosted ARVs, but clinical significance is expected to be minimal. • Goserelin: Interaction with ARVs has not been studied. Based on what is known about metabolism of goserelin, no clinically significant interactions are expected. • Leuprolide acetate: Interaction with ARVs has not been studied. Based on what is known about metabolism of leuprolide acetate, no clinically significant interactions are expected. • Testosterone: Interaction between ARVs and testosterone in transgender men has not been studied. Testosterone has been used in androgen-deficient cisgender men with HIV without clinical drug interactions. • Spironolactone: No interactions expected. 	<ul style="list-style-type: none"> • Estradiol: When prescribing ARVs, consider use of medications not expected to interact with estradiol. • Finasteride: No dose adjustments recommended.
Cobicistat (COBI)	<ul style="list-style-type: none"> • Estradiol: Based on known mechanisms of metabolism, COBI-boosted PIs or other ARVs may have mixed effects on estradiol levels. COBI does not induce CYP1A2, and as such may increase estradiol levels by inhibition of CYP3A. • Finasteride: When taken concomitantly, finasteride levels may be increased, but with minimal clinical significance. • Testosterone: Based on known mechanisms of metabolism, there is limited potential that COBI-boosted PIs or other ARVs may increase testosterone levels. Relevance of this interaction is expected to be low in transgender men. 	<ul style="list-style-type: none"> • Estradiol: When taken concomitantly with COBI-boosted ARVs, monitor for signs of estrogen deficiency or excess. • Finasteride, testosterone: No dose adjustments are recommended.

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→ Cyproterone acetate, estradiol, finasteride, goserelin, leuprolide acetate, spironolactone, testosterone		
Class or Drug	Mechanism of Action	Clinical Comments
Doravirine (DOR)	Estradiol, testosterone: No interactions expected.	N/A
Efavirenz (EFV)	<ul style="list-style-type: none"> • Estradiol: EFV could induce CYP3A and could decrease estradiol levels. • Finasteride, testosterone: Levels may decrease when taken concomitantly with EFV. 	<ul style="list-style-type: none"> • Estradiol: No dose adjustments are recommended, but when taken concomitantly with EFV, monitor for signs of estrogen deficiency or excess. • Finasteride, testosterone: No dose adjustments recommended.
Etravirine (ETR)	<ul style="list-style-type: none"> • Estradiol: ETR could induce CYP3A and could decrease estradiol levels. • Finasteride, testosterone: Levels may decrease when taken concomitantly with ETR. 	<ul style="list-style-type: none"> • Estradiol: No dose adjustments are recommended, but when taken concomitantly with ETR, monitor for signs of estrogen deficiency or excess. • Finasteride, testosterone: No dose adjustments are recommended.
Etravirine (ETR)	<ul style="list-style-type: none"> • Estradiol: ETR could induce CYP3A and could decrease estradiol levels. • Finasteride, testosterone: Levels may decrease when taken concomitantly with ETR. 	<ul style="list-style-type: none"> • Estradiol: No dose adjustments are recommended, but when taken concomitantly with ETR, monitor for signs of estrogen deficiency or excess. • Finasteride, testosterone: No dose adjustments are recommended.
<ul style="list-style-type: none"> • Rilpivirine (RPV) • INSTIs, <i>non-boosted</i> • NRTIs, <i>non-boosted</i> 	Estradiol, finasteride, testosterone: No interactions are expected.	N/A
Ritonavir (RTV)	<ul style="list-style-type: none"> • Estradiol: RTV may induce CYP1A2, which could decrease estradiol levels. This outweighs RTV inhibition of CYP3A. • Testosterone: No interactions are expected. 	N/A
Abbreviations: ARV, antiretroviral; CYP, cytochrome P450; INSTI, integrase strand transfer inhibitor; N/A, not applicable; NRTI, nucleoside reverse transcriptase inhibitor; PI, protease inhibitor.		

References

- Hembree WC, Cohen-Kettenis PT, Gooren L, et al. Endocrine treatment of gender-dysphoric/gender-incongruent persons: an Endocrine Society clinical practice guideline. *Endocr Pract* 2017;23(12):1437. [PMID: 29320642] <https://pubmed.ncbi.nlm.nih.gov/29320642>
- Irving A, Lehault WB. Clinical pearls of gender-affirming hormone therapy in transgender patients. *Ment Health Clin* 2017;7(4):164-67. [PMID: 29955517] <https://pubmed.ncbi.nlm.nih.gov/29955517>