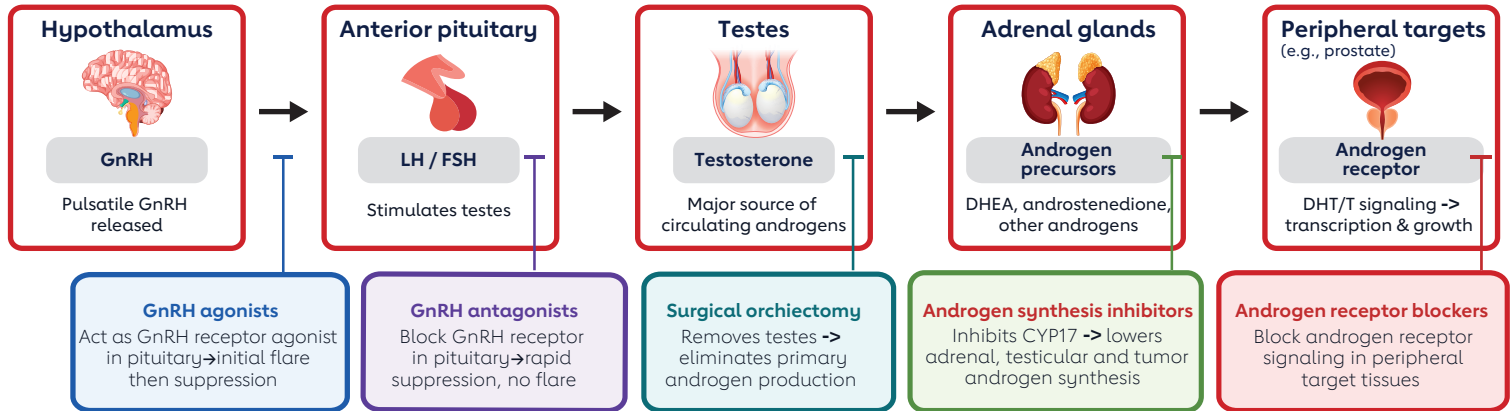


Androgen Deprivation Therapy (ADT)

Mechanisms and associated cardiovascular side effects

ANDROGEN PATHWAY AND THERAPY TARGETS



SHARED PATHWAY (DOWNSTREAM EFFECTS)



 GnRH agonists Examples: Leuprolide, goserelin, triptorelin, histrelin Mechanism Initial pituitary stimulation causes a testosterone flare, followed by receptor down-regulation and suppression of LH/FSH and testosterone. Associated CV effects Linked with higher cardiovascular event risk: MI, stroke, diabetes/metabolic syndrome, QT prolongation, arrhythmia/sudden cardiac death.	 GnRH antagonists Examples: Degarelix, relugolix Mechanism Direct pituitary GnRH receptor blockade produces rapid testosterone suppression without flare. Associated CV effects Shared ADT-related metabolic and QT risks. Relugolix trial data suggest possible lower cardiovascular risk than GnRH agonists; a dedicated RCT of degarelix (PRONOUNCE) did not confirm a difference.	 Surgical orchiectomy Examples: Bilateral orchiectomy Mechanism Removal of testes causes immediate and durable testosterone suppression. Associated CV effects Metabolic syndrome, insulin resistance/diabetes, dyslipidemia, weight gain/body composition change, possible increased overall cardiovascular risk.	 Androgen synthesis inhibitor Examples: Abiraterone Mechanism Inhibits CYP17 and reduces androgen synthesis in testes, adrenal glands, and tumor tissue. Associated CV effects Mineralocorticoid excess can cause hypertension, hypokalemia, fluid retention/edema; may increase atrial tachyarrhythmias and heart failure risk.	 Androgen receptor blockers Examples: Bicalutamide, flutamide, nilutamide; enzalutamide, apalutamide, darolutamide Mechanism Block androgen receptor signaling; newer agents inhibit receptor translocation and downstream transcriptional activity. Associated CV effects Hypertension is prominent with newer agents; possible ischemic heart disease, QT prolongation and arrhythmia risk.
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CARDIOVASCULAR SIDE EFFECTS ACROSS ADT



WHAT TO MONITOR AND OPTIMIZE



Learn more.