Group A (n=32) and Group B (n=62) were similar in terms of racial background (78% and 79% white), but differed by initial BMI (BMI z-score -0.14 ± 1.17 vs 0.71 ± 1.11, respectively). Mean age of GnRHa initiation in Group A was 12.5 (±1.1) years, all premenarchal, and they remained on GnRHa monotherapy for a mean duration of 22.4 (±7.9) months. Mean age of starting T was 14.3 (±0.85) years for Group A and 16.9 (±1.25) years for group B. Within Group A FAH was increased compared to MPTH (166.6 ±7.5cm vs. 164.2 ±5.7cm, p=0.03). There was no difference between FAH vs. MPTH within Group B (162.1 ±7.4cm vs. 164.3 ±6.3cm, p=0.06). After adjusting for covariates, longer duration of GnRHa monotherapy was associated with taller final height (0.61cm, 95% CI 0.31,0.9), having Tanner 3 chest development at the start of GnRHa therapy was associated with lower final height than those at Tanner 2 (-6.6cm, 95% CI -10.58,-2.54), and the average final height was significantly less (-8.13cm, 95% CI = -11.01, -5.25) in Group B as compared to Group A.

## Conclusions

This study shows that treatment with GnRHa in premenarchal TMY prior to the initiation of testosterone increases FAH compared with their MPTH as well as with TMY who did not receive GnRHa before testosterone. Longer duration of GnRHa use and earlier puberty stage at start of treatment resulted in greater increases in FAH. Patients considering GnRHa ("blockers") should be counseled that use of blockers may increase their final height if started early.

**ABSTRACT ID: 6232**

## Assessment of Liver Function and Toxicity in Transgender Female Adolescents Prescribed Bicalutamide

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## Objectives

Bicalutamide is an antiandrogen that blocks binding of dihydrotestosterone to the androgen receptor with subsequent increased aromatization of testosterone to estradiol. There is minimal research on the use of bicalutamide in transfeminine individuals. In cisgender men with prostate cancer, bicalutamide was associated with gynecomastia but also had a rare yet serious adverse effect of hepatotoxicity. The aim of this study is to compare rates of serum transaminase elevation as a marker of hepatotoxicity in transfeminine adolescents and young adults using bicalutamide v.

individuals using other methods of androgen blockade (estradiol with or without GnRH agonists or spironolactone).

## Methods

A retrospective analysis was conducted using data extracted from the electronic health record on patients newly starting therapy with at least 1 year of follow-up data from 2015 to 2022. In SAS (Cary, NC), we used a linear mixed model to compare change in ALT and AST and absolute value of ALT and AST in both groups over the 1 year follow-up. We also compared the proportion of patients in each group with ALT and AST > 3 times the upper limit of normal (clinically significant transaminitis) utilizing a Fisher's exact test.

## Results

The final cohort included 81 transfeminine adolescents and young adults taking bicalutamide (with estradiol) and a comparison group of 72 transfeminine adolescents and young adults taking estradiol with or without GnRH agonists or spironolactone who had LFTs completed at baseline through 1 year of treatment. In the type 3 test of fixed effects, there was no difference in delta ALT (F=2.4, p=0.12) or delta AST (F=2.3, p=0.13) for patients on bicalutamide v. comparison during the first year of treatment. There was no difference in absolute ALT (F=2.0, p=0.16) or AST (F=0.22, p=0.64) values for patients on bicalutamide v. comparison during the first year of treatment. There was no significant difference when comparing the proportion of individuals with ALT and AST values > 3 times the upper limit of normal (ALT 2.4% [bicalutamide] v. 0% [comparison] p= 0.49; AST 9.8% [bicalutamide] v. 2.8% [comparison] group p= 0.10).

## Conclusions

Bicalutamide was not associated with significant change from baseline ALT or AST, higher absolute ALT or AST values, or clinically significant transaminitis v. a comparison group taking estradiol with or without GnRH agonists or spironolactone. Bicalutamide could be considered an antiandrogen adjunct to estradiol therapy for transfeminine individuals.

**ABSTRACT ID: 6257**

## Comparisons of body composition and muscle strength between transgender adolescents and cisgender controls