Conclusions: This initial data suggests that the asparagine to glutamine mutation confers protective effects in mice challenged with an HFD.

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Estimation of breast volume in transgender women using 2D photography: validation of the BreastIdea Volume Estimator in men and transgender women

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Aim: The BreastIdea Volume Estimator (BIVE) is an internet based application that uses an algorithm to estimate breast volume based on 2D images . This technique has previously been validated in a population of cisgender women (1), but not in men or transgender women due to anatomical differences that occur during male puberty. Validation in the chests of men and transgender women will allow use of this technique to estimate breast volume for clinical and research purposes.

Methods: 2D photography (frontal, lateral views) was performed on transgender women prior to commencing (used as reference population for male chests) and 6 months post commencement of feminising hormone therapy. BIVE was used to estimate breast volume by two researchers independently and compared to a gold standard calculation of breast volume using a 3D scanner. The mean absolute difference (MAD) was calculated to assess accuracy. Intraclass coefficients (ICC) were calculated to assess absolute and relative reliability.

Results: The breast volume of 102 breasts of 41 transgender women (median(IQR) age 26 (23-30) years, BMI 24.6 (21.2-29.0) kg/m2) was estimated using the BIVE application and compared to volumes obtained from 3D modelling. For frontal views, the MAD±SD was 8.27±8.01 mL for observer 1 and 9.58±12.78 mL for observer 2. The standard error of measurement was 0.20 mL for observer 1 and 0.93 mL for observer 2. The relative reliability ICC (95%CI) was 0.993 (0.989–0.996) for observer 1 and 0.949 (0.920–0.967) for observer 2. The absolute reliability ICC (95%CI) between observers was 0.980 (0.969–0.987) suggesting good correlation.

Conclusion: The BIVE application can be used to reliably estimate breast volume in cisgender men and transgender women. This provides a low cost and accessible option for clinicians and researchers in the outpatient setting. Limitations include initial user training to use the application proficiently.

1. Kasielska-Trojan A, Mikołajczyk M, Antoszewski B. BreastIdea Volume Estimator: A New Tool for Breast Volume Estimation-Presentation and Validation for Women. Plast Reconstr Surg. 2020;146(6):744e-8e.

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Use of bicalutamide as an androgen receptor antagonist in transgender women

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Aims: Bicalutamide, a potent non-steroidal androgen receptor antagonist without off-target effects, is increasingly being used to treat transgender women. However, its comparative efficacy, effect on serum total testosterone concentration and risk of hepatotoxicity in this population is unclear.

Methods: A cross-sectional analysis of patients treated with bicalutamide by the Austin Gender Clinic and private endocrinologists was performed, comparing serum total testosterone concentration, serum estradiol concentration and liver function tests to historical cohorts treated with spironolactone (n=38), cyproterone acetate (n=21) or estradiol without anti-androgen (n=21).

Results: Fourteen patients treated with bicalutamide were identified, with median age 28 (24-40) years and duration of hormone therapy 21 (15-37) months. Median bicalutamide dose was 25 (25-50) mg daily and median duration of bicalutamide therapy was 6 (3-12) months. Four patients commenced bicalutamide at initiation of gender-affirming hormone therapy, while the remaining patients had previous anti-androgen therapy. Median serum total testosterone concentration was 4.5 (0.5-17.8) nmol/L in individuals treated with bicalutamide for >6 months. On univariate analysis, this was not different from individuals treated with cyproterone acetate (0.8 (0.6-1.2) nmol/L, p=0.26), spironolactone (2.0 (0.9-9.4) nmol/L, p=0.76) or estradiol without anti-androgen (10.5 (4.9-17.2) nmol/L, p=0.47). There was no between group difference in serum estradiol concentration (overall p=0.09) or serum ALT (overall p=0.53).

Conclusion: There was no difference in the serum total testosterone concentration in those treated with bicalutamide compared to cyproterone acetate, spironolactone or estradiol without an anti-androgen. Within the bicalutamide group, there was significant variability in serum total testosterone concentration, perhaps attributable to differences in serum estradiol concentration and duration of hormone therapy. It is unclear if this contributes to meaningful differences in feminisation. There was no evidence of hepatotoxicity in our cohort of patients treated with bicalutamide. Prospective studies are required to evaluate the comparative efficacy and long-term safety of bicalutamide in transgender women.