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Effect of testosterone on chests and abdomens of transgender men

To the Editor: The chest is one of the greatest sources of dissatisfaction among transgender men,[1,2] and medical interventions, such as masculinizing chest surgery and testosterone, show significant improvements in self-confidence and quality of life.[3] This retrospective and prospective cross-sectional analysis evaluates the effects of testosterone on hair growth and acne on the chests and abdomens of 90 transgender men by using control groups of 30 cisgender men and 30 cisgender women.

Patients were retrospectively and prospectively recruited if they had no history of chest or breast surgery; did not use performance-enhancing drugs, systemic steroids, oral contraceptive pills, testosterones, estrogens, or medications known to cause gynecomastia; had no history of gender-affirming procedures, therapy, or treatment; did not have hormonal abnormalities; were not currently using acne treatment; and had no history of or were currently pregnancy. Patient demographics, including Fitzpatrick skin type, were similar among groups. Acne lesions and hair growth on the chests and abdomens were assessed by 2 blinded dermatologists with the Investigator Global Assessment scale and modified Ferriman-Gallwey scoring method, respectively.

Exogenous testosterone showed significant effects on the incidence of acne in transgender men ($P < .001$, relative risk 5.666, attributable risk 82%), which was present on the chest of 52% of transgender men taking testosterone and 9% of those not taking testosterone; differences in Investigator Global Assessment scale between groups were not significant (Fig 1). Transgender men taking testosterone had significantly higher Ferriman-Gallwey scores (median 5 [IQR 3-9], $P < .001$) than cisgender women and transgender men not on testosterone; however, their scores remained lower than those of cisgender men (median 10.5 [IQR 7.25-12], $P < .001$) (Fig 2). Chest binding and formulation of testosterone (100 mg/week intramuscularly or 5 mg/week transdermally) were not associated with acne or hair growth. However, duration of testosterone therapy was positively correlated with both hair growth (ρ 0.588, $P < .001$) and severity of acne (ρ 0.262, $P < .022$).

Exogenous testosterone stimulates male-patterned hair growth and body contour, improving self-confidence, sense of safety, symptoms of gender dysphoria, and societal perceptions of these patients.[4] The body hair pattern of transgender men on testosterone more closely resembled that observed on cisgender men than those on cisgender women or transgender men not on testosterone. Compared with those not on masculinizing hormonal therapy, patients taking testosterone had higher rates of acne, which was unrelated to route of testosterone administration or chest binding—the practice of compressing breast tissue to create a more masculine appearance of the chest.[5] Although the clinical relevance of these differences might vary from patient to patient, these results highlight the need for dermatologists to engage in the management of these patients, who might desire further hair growth or management of acne that occurred as a consequence of masculinizing hormonal therapy.

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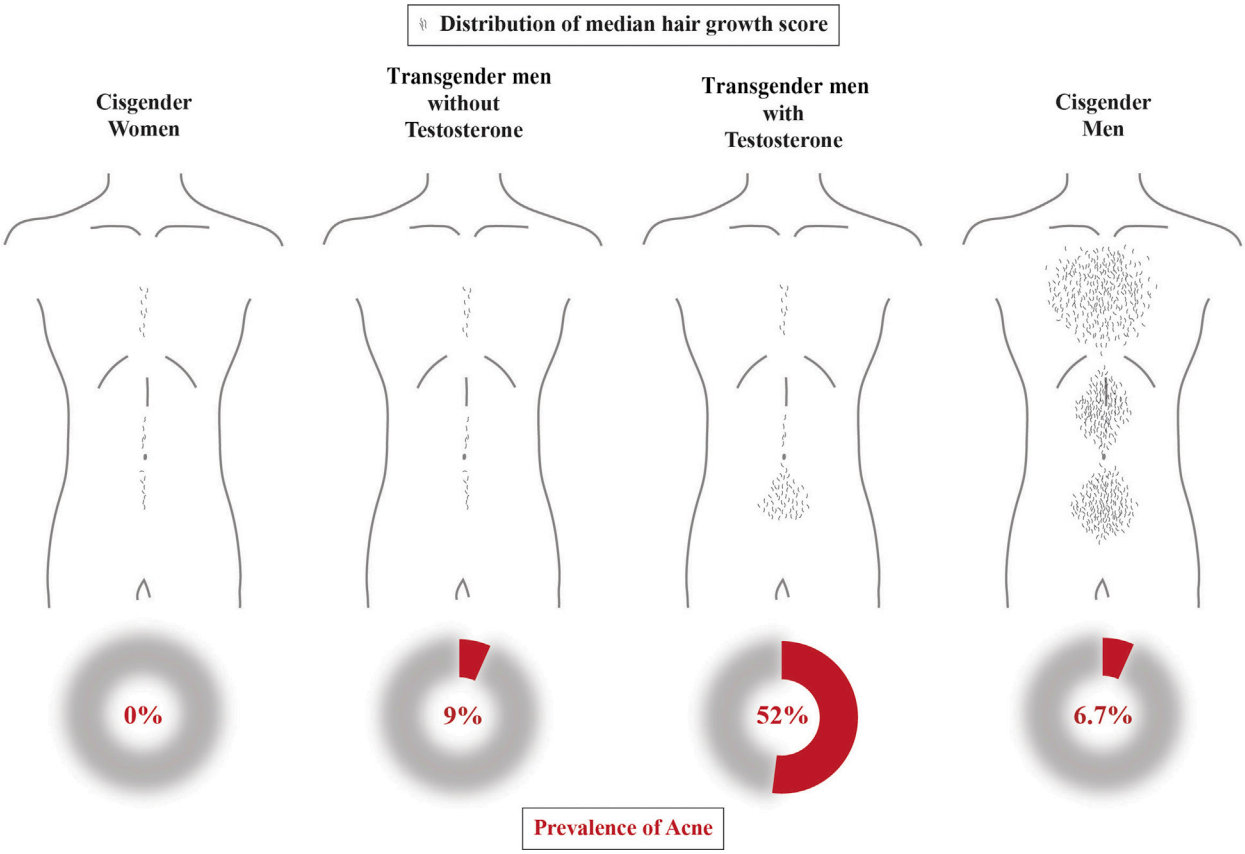

Fig 1. Distribution of hair growth and presence of acne among groups.

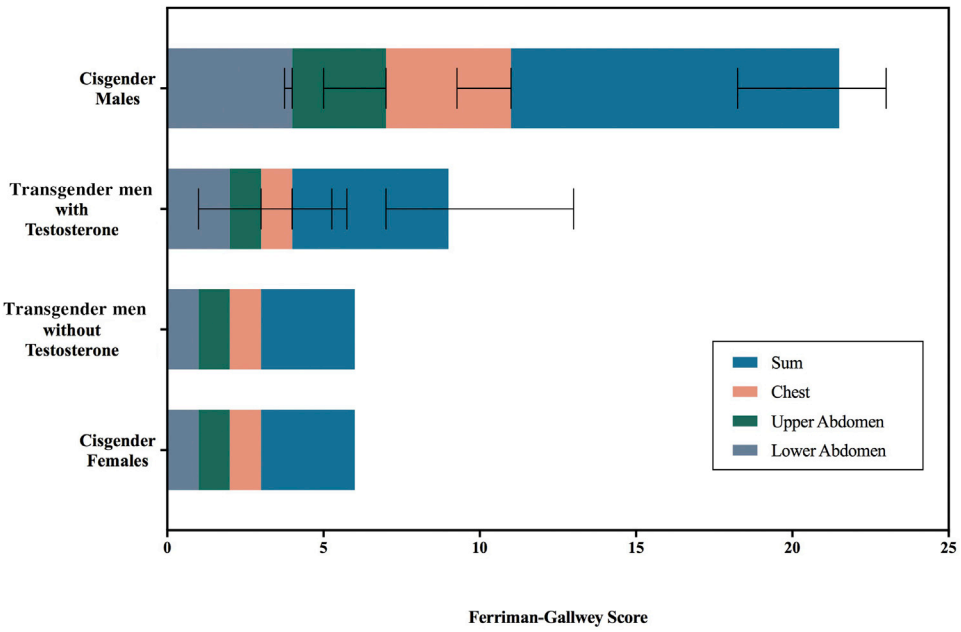

Fig 2. Hair growth in response to exogenous testosterone. Exogenous testosterone showed the greatest effect on hair growth on the lower abdomen.

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A comparison of the efficacy of ablative fractional laser–assisted photodynamic therapy according to ablative depth for actinic keratosis: A single-blinded, randomized, comparative, prospective study

To the Editor: Ablative fractional laser (AFL) pretreatment is better than curettage, microdermabrasion, microneedling, and nonablative fractional laser treatment for enhancing response to photodynamic therapy (PDT) in normal-appearing skin.[1] An erbium:yttrium-aluminum-garnet AFL at 2940 nm ablates the epidermis and dermis without thermal injury, creating microscopic ablation zones (MAZs) in the skin.[2] MAZs facilitate the delivery and uptake of topical methyl aminolevulinate deep into the skin, enhancing porphyrin synthesis and photodynamic activation.[3] MAZs depend on parameters such as laser depth, laser density, and laser passes. Increasing ablative laser density and the number of pretreatment passes did not further enhance fluorescence of protoporphyrin IX (PPIX).[1] The effect of ablative laser depth in AFL-PDT on actinic keratosis (AK) lesions is unknown. We investigated whether increased laser ablative depth affects the efficacy, side effects, cosmetic outcomes, and PPIX accumulation of AFL-PDT for facial AK.

Overall lesion thickness was classified as grades I to III according to the classification system reported by Olsen et al.[4] Patients indicated for PDT were randomly assigned to undergo AFL-PDT with 150 μm, 350 μm, or 500 μm of ablative depth therapy with the same treatment density and coagulation level (coagulation, level 1; treatment density, 22%; single pulse). Irradiation (dose, 37 J/cm^2) with a red light-emitting diode lamp followed application of methyl aminolevulinate. The primary outcomes included complete response (CR) rate at 3 and 12 months after treatment. Fluorescence intensity measurements were assessed by using levels of accumulated PPIX.

A total of 60 patients with 366 AK lesions in all completed the study and were analyzed: the group treated with 150-μm AFL-PDT included 20 patients with a total of 121 lesions, the group treated with 350-μm AFL-PDT included 19 patients with a total of 116 lesions, and the group treated with 500-μm AFL-PDT included 21 patients with a total of 129 lesions (Fig 1). There were no differences between the 3 groups in terms of sex, age, Fitzpatrick score, or Olsen grade. For Olsen grade I or II lesions, there was no difference between the 3 groups in terms of CR rates (Fig 2). However, for Olsen grade III lesions, CR rates were better in the group treated with 500-μm AFL-PDT (rate at 3 months, 87.2%; rate at 12 months, 79.5%) than in the group treated with 150-μm AFL-PDT (rate at 3 months, 68.4%; rate at 12 months, 57.9%). We found no significant difference between the groups in terms of PPIX accumulation, cosmetic outcomes, or treatment safety.

Treatment results for PDT differ according to thickness of the atypical cell layer.[5] AFL has been used to enhance the penetration of photosensitizers to deep layers of the lesion and augment the efficacy of PDT, and laser parameters are important factors that can affect treatment efficacy. In this study, higher ablative depth did not influence PPIX accumulation, but it did improve AFL-PDT treatment efficacy. Once the stratum corneum is disrupted by AFL, there is no further benefit from drilling deeper laser channels for PPIX accumulation. This study showed that varying the penetration depth of laser channels does not affect PPIX accumulation.

Our results are limited by the small sample size. In addition, we used noninvasive surface fluorescence photography to measure PPIX accumulation at the skin surface, which did not allow quantification of PPIX accumulation in deeper skin layers.