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TRANSGENDER HEALTH

Prospective Evaluation of Self-Reported Aggression in Transgender Persons

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ABSTRACT

Background: Although research on the relation between testosterone and aggression in humans is inconclusive, guidelines (including the World Professional Association for Transgender Health Standards of Care, edition 7) have warned for an increase in aggression in transgender men taking testosterone treatment.

Aims: To investigate the association between levels of testosterone and aggression in treatment-seeking transgender people and explore the role of mental health psychopathology (anxiety and depressive symptoms) and social support in aggression in this population.

Methods: Every transgender person invited for assessment at a national transgender health clinic in the United Kingdom during a 3-year period (2012–2015) completed self-report measures for interpersonal problems, including levels of aggression (Inventory of Interpersonal Problems [IIP-32]), symptoms of anxiety and depression (Hospital Anxiety and Depression Scale [HADS]), social support (Multidimensional Scale of Perceived Social Support), and experiences of transphobia before and 1 year after the initiation of gender-affirming hormonal therapy. Correlations between prospective scores for the IIP-32 factor "too aggressive" and prospective levels of sex steroids, prospective psychological (HADS), and baseline psychosocial measurements were tested.

Outcomes: Prospective scores for the factor "too aggressive" were not correlated to prospective serum testosterone levels.

Results: Results of 140 people (56 transgender men, 84 transgender women) were analyzed. A prospective increase in scores for the factor "too aggressive" of the IIP-32 in transgender men 1 year after being treated with testosterone treatment or a decrease of the IIP-32 aggression scores in transgender women 1 year after gender-affirming hormonal therapy was not found. However, a positive correlation was found between increasing HADS anxiety scores and increasing scores for the IIP-32 "too aggressive" score in the entire study population and a positive correlation with lower support from friends in transgender women.

Clinical Implications: Hormone-prescribing physicians can be reassured that the long-term administration of testosterone in transgender men does not increase aggressive behavior.

Strengths and Limitations: This is the 1st prospective study to assess the effect of gender-affirming hormonal care on aggression. Limitations included the use of different laboratories, the use of a patient-reported outcome measure, and the lack of aggression subtypes.

Conclusions: Testosterone therapy was not associated with an increase in levels of aggression in transgender men or a decrease in aggressive behavior in transgender women on antiandrogen and estrogen therapy, but other psychological and/or social factors, such as anxiety levels, appear to contribute to self-reported aggression in transgender people. **Defreyne J, T'Sjoen G, Bouman WP, et al. Prospective Evaluation of Self-Reported Aggression in Transgender Persons. J Sex Med 2018;15:768–776.**

Key Words: Transgender; Gender-Affirming Hormones; Aggression; Testosterone; Estrogens; Antiandrogen Therapy

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INTRODUCTION

Research has concluded that gender-affirming therapy generally leads to high satisfaction rates,[1] in addition to an increase in quality of life and a decrease in the prevalence of gender dysphoria, body uneasiness, depressive and anxiety symptoms, somatization, interpersonal sensitivity, hostility, and general psychopathology, with the majority of transgender people functioning well psychologically, socially, and sexually.[2–4] Hormone therapy with testosterone in transgender men leads to an overall satisfactory "passability" (being perceived by others as a cisgender man) in daily life[5] and cross-sectional studies comparing transgender people on vs not on gender-affirming hormones report lower subjective levels of gender dysphoria, body uneasiness, anxiety, and depressive symptoms in those on gender-affirming hormones.[6–9] However, those studies are biased inherent to their cross-sectional design.

Guidelines, such as "A Psycho-Endocrinological Overview of Transsexualism"[10] and the World Professional Association for Transgender Health (WPATH) Standards of Care edition 7[11] warn for a (transient) increase in aggression in transgender men after the initiation of testosterone treatment.[10,11] This advice is based on 1 article, published in 1995, assessing prospective differences in anger and aggression in 35 transgender men and 15 transgender women over a period of 3 months[12] and 2 review articles, published in 2003, mentioning the same single study observing "hypersexuality and aggression" as adverse effects of gender-affirming hormonal therapy in transgender men.[13,14]

Animal studies have shown that testosterone promotes aggressive behavior in male animals (birds and rodents)[15–17] and female mammals (rodents and hyenas) that have testosterone administered to them also show an increase in aggressive behavior,[18–20] although research on androgens in female animals is scarce.[21,22] Results of animal studies are not always applicable to humans and research on the relation between (exogenous and endogenous) testosterone and aggression in humans is inconclusive.[23–33] This could be due to the fact that aggression in humans is often driven by psychological factors, such as social support,[34] levels of anxiety,[35–37] or depression[37] and controlled by social context and legislation.

Studies describing a positive relation between aggression and testosterone have been conducted primarily in aggression-prone populations, such as prison inmates.[27,29] To date, there is no evidence for a direct causal link between testosterone administration and aggression in humans[33] and guidelines warning for aggression in trans men taking testosterone therapy are based on scarce evidence.[12]

AIMS

The aim of the present study was to prospectively examine whether exogenous testosterone therapy increases aggression in transgender men and whether it decreases aggression in transgender women on antiandrogen plus estrogen therapy. We formulated 4 objectives and associated hypotheses.

The 1st objective was to determine whether transgender men report higher levels of aggression after 1 year of treatment. We hypothesized that—based on clinical experience—testosterone therapy would not increase aggression in transgender men.

The 2nd objective was to determine whether transgender women report lower levels of aggression after 1 year of antiandrogen therapy. We hypothesized that—based on clinical experience—antiandrogen therapy would not affect self-reported aggression.

The 3rd objective was to assess whether a correlation between serum testosterone levels and self-reported aggression exists. The hypothesis for this 3rd objective was 2-fold. (i) We hypothesized that transgender men showing higher differential increases in serum testosterone levels at initiation of testosterone therapy would not be more likely to have a larger increase in self-reported aggression. (ii) We hypothesized that transgender women with a larger decrease in serum testosterone levels at the initiation of antiandrogen therapy would not show lower levels of self-reported aggression compared with those with smaller decreases in serum testosterone levels.

The 4th objective was to search for a relation between aggression and psychological and social factors: symptoms of anxiety and depression, levels of social support, experiences of transphobia, and social demographic characteristics such as civil status, employment status, and living situation. We hypothesized that psychological and/or social factors (and not serum testosterone levels or testosterone therapy) would be associated with a larger prospective increase in self-reported aggression in transgender people.

METHODS

Participants

People invited for assessment at a large national gender clinic in the United Kingdom (The Nottingham Centre for Transgender Health) during a 3-year period (2012−2015) who had at least 1 year of gender-affirming hormonal therapy were invited again to be part of the study, as specified by the research ethics committee, even if they had already accepted participation in pre−gender-affirming treatment. Gender-affirming hormonal treatment was initiated in the absence of physical contraindications. Transgender people requesting gender-affirming chest surgery had to live for a minimum of 6 months as their experienced gender and be part of the treatment program. Transgender people wishing gender-affirming genital surgery were usually part of the treatment program for a minimum of 1 year.

Before the assessment, participants were invited to complete a questionnaire pack, which included an information sheet, a consent form, a sociodemographic questionnaire, self-report measures, and a return envelope. Those who were interested in participating were invited to complete the questionnaire pack at