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Transgender medicine: long-term outcomes from ‘the Dutch model’

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Abstract

Medical intervention for transgender adolescents is a controversial issue but a recently published article describing long-term psychological outcomes using ‘the Dutch model’ of care should help to silence critics and reassure the growing number of clinicians treating this patient population.

Medical intervention for transgender adolescents has been controversial since it was first described in the Netherlands in 1998.¹ In the October 2014 edition of *Pediatrics*, De Vries and colleagues present data from 55 young transgender adults followed up from before pubertal suppression (mean age 13.6 years) to at least 1 year after gender reassignment surgery (mean age 20.7 years).² This eagerly anticipated report suggests that patients cared for at the Dutch clinic showed improvements in psychological functioning and resolution of gender dysphoria after gender reassignment surgery.

Prior to the medical treatment of children, all transgender persons would have to suffer through an unwanted puberty, a puberty that permanently masculinized or feminized their faces and bodies. Suicide rates remained high despite treatments in adulthood with cross-sex hormones and gender reassignment surgeries.³ The so-called Dutch model of care was designed to treat carefully identified patients with pubertal suppression using gonadotropin-releasing hormone (GnRH) analogues at the age of 12 years, followed by the use of cross-sex hormones (oestrogen or testosterone) at age 16 years and consideration of gender reassignment surgery at age 18 years.⁴ This approach aimed to eliminate the exposure to unwanted pubertal hormones, limit gender dysphoria, and improve the ability to ‘pass’ as the affirmed gender in adulthood. Opponents decried the protocol as radical and potentially harmful. These opponents feared that GnRH analogue therapy in ‘normal’ puberty could have negative impacts on cognitive development, or potentially reinforce the desire to live as the other gender, fears that have not been substantiated to date.

In the era that followed, clinics around the world formed and began incorporating this protocol into clinical care. In some countries, however, opponents resisted and provided no medical intervention to youths in early puberty. Our Gender Management Services Clinic at Boston Children's Hospital, the first in the USA, began treating adolescent patients in 2007,

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including several patients from countries that did not allow GnRH analogue treatments. The Endocrine Society and the World Professional Association of Transgender Health (WPATH) have formalized versions of the Dutch model into published guidelines.^{5,6} Today, only 8 years after our centre opened, dozens of centres across the USA are treating patients using the Dutch model. We are motivated by the psychological improvements and physical transformations that we see in our own patients. We see depressed and anxious youths grow into happy and well-adjusted adults; however, we had been proceeding with some trepidation while we awaited long-term outcomes data.

De Vries and colleagues should be commended for their pioneering work in this controversial field. The fact that psychological functioning improved and resulted in rates of clinical problems indistinguishable from those in the general Dutch population is a triumph. The authors' ability to follow this cohort from early adolescence into young adulthood allows for a rich insight into the consequences of the treatment protocol described. This report should further promote the treatment of adolescents with pubertal suppression and cross-sex hormones as a safe and effective way to manage gender dysphoria.

It should be noted that the patients described were well supported, brought to care in early adolescence, and cared for as part of a carefully structured multidisciplinary care team in a small, supportive country. Generalizing the Dutch clinic's success to clinics in other settings might be problematic. Therefore, clinicians must take note of the positive findings from this report, and consider carefully how to best incorporate these results into their own clinical care settings.

It is also notable that the largest improvements in psychological functioning occurred following gender reassignment surgery. It is now of utmost importance to publicize the critical role of gender reassignment surgery in resolving gender dysphoria. In the USA, such surgeries are rarely covered by medical insurance and only affordable to high-income families, creating inequity of care. These types of surgery are also infrequently part of urology or plastic surgery training programmes, leading to a scarcity of surgeons competent in the procedures. The ability for transgender persons to live full and happy lives without lifelong gender dysphoria will increase as the affordability and availability of gender reassignment surgery improves.

De Vries *et al.*² are conscientious to note that the age criteria used for pubertal suppression (12 years) and cross-sex hormone use (16 years) are controversial. Arbitrarily halting puberty at the age of 12 years rather than at Tanner stage 2 (the beginning of puberty) might unnecessarily subject patients to dysphoric puberty simply because they are relatively precocious. Timing pubertal suppression according to the maturation of individual patients seems a more logical course. We would expect more flexible and individualized treatment protocols to become standard of care in the future.

Finally, although clinicians might be reassured by the psychological and quality of life outcomes reported, they will await the group's data outlining physical parameter outcomes. Some information on bone density outcomes has been published and seems reassuring.⁴ However, the long-term safety profile of pubertal suppression, including effects on bone

density and other metabolic parameters, is of keen interest to providers caring for transgender adolescents.

We live in a time of dramatic change; LGBT (Lesbian Gay Bisexual Transsexual) rights have become the civil rights issue of our day. Transgender people, often the forgotten caboose on the LGBT train, are emerging and demanding competent and compassionate medical care. This latest report on long-term psychological functioning following pubertal suppression, treatment with cross-sex hormones, and gender reassignment surgery is a giant step forward for this important patient population.

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References

1. Cohen-Kettenis PT, van Goozen S. Pubertal delay as an aid in diagnosis and treatment of a transsexual adolescent. *Eur Child Adolesc Psychiatry*. 1998; 7:246–248. [PubMed: 9879847]
2. De Vries ALC, et al. Young adult psychological outcome after puberty suppression and gender reassignment. *Pediatrics*. 2014; 134:1–9. [PubMed: 24918219]
3. Van Kesteren PJ, Asscheman H, Megens Ja, Gooren LJ. Mortality and morbidity in transsexual subjects treated with cross-sex hormones. *Clin Endocrinol (Oxf)*. 1997; 47:337–42. [PubMed: 9373456]
4. Delemarre-van de Wall HA, Cohen-Kettenis PT. Clinical management of gender identity disorder in adolescents: a protocol on psychological and paediatric endocrinology aspects. *Eur J Endocrinol*. 2006; 155:S131–S137.
5. Hembree WC, et al. Endocrine treatment of transsexual persons: an Endocrine Society clinical practice guideline. *J Clin Endocrinol Metab*. 2009; 94:3132–54. [PubMed: 19509099]
6. Coleman E, et al. Standards of Care for the Health of Transsexual, Transgender, and Gender-Nonconforming People, Version 7. *Int J Transgenderism*. 2012; 13:165–232.