Hormone Treatment of Transsexual Adolescents[1]

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Summary

A gender identity disorder in children and adolescents usually does not reveal any anatomical, chromosomal or endocrinological deviations: the body is perceived as being out of sync with the felt sex/gender which usually leads to considerable psychological stress. Hormone treatment arrests the changes in puberty perceived as extremely stressful and prevents irreversible changes such as deepening of the voice in biological boys or breast development in biological girls. Such a treatment is only recommended after a thorough psychological assessment by two independent gender experts from the field of child and adolescent psychiatry; the Endokrinologikum Hamburg, where the author is employed, works in close cooperation with the University Medical Centre Hamburg-Eppendorf. In addition, the parents have to give their consent to a hormonal procedure. In general, injections of GnRH analogues are used for suppressing puberty; also oral medications (cyproterone acetate) can arrest masculinization and, occasionally, gestagens are used to suppress menstrual bleeding. Once the adolescents then go on to live their daily life over a longer period in the desired sex/gender, the administration of cross-sex hormones (with estrogen or testosterone) has the effect that the body aligns with the perceived sex/gender.

Introduction

Children who do not feel at home in their assigned sex/gender frequently express the desire for breasts if they have a penis or vice versa. Such remarks not only cause confusion in their families but sometimes also overtax the attending doctors. The children concerned are often for a long time left to their own devic-

1 | Original version in German.

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es, unable to find anyone who is prepared to help them. And the treatment of transgender children and adolescents with hormones is by no means uncontroversial in expert circles. The recurring issue is whether and when it is appropriate to intervene with drugs in the development of puberty. In this article I would like to report on our experiences at the Endokrinologikum Hamburg where we have already advised and partly accompanied over the last 15 years more than 500 people with a gender dysphoria or a transsexual development.

Definition and frequency

Almost all of those seeking advice have a very similar history: already since early childhood they feel as belonging to the other sex/gender. They reject their genitals and wish to change their bodies in such a way that it harmonizes with the sex/gender they feel themselves to be. How frequent are such gender identity disorders? Medical literature supplies very varied incidence data – from 1:3.000 to 1:100.000 (Möller et al. 2009).

Causes

In their search for biological causes Australian researchers in Melbourne established that the CAG repeats of the androgen receptor is longer in transsexual women than in control subjects. Thus there could be a link between transsexuality and an atypical interplay between hormones and corresponding receptors (Hare et al. 2008). Also certain brain structures of transsexuals show similarities to those of the desired gender (Zhou et al. 1995). So far however no unambiguous biological explanations have emerged why a transsexual development occurs.

Controversies of hormone treatment

The question concerning the age at which adolescents should begin a therapy is a point of much controversy among experts. A more guarded stance towards hormone treatment of transsexual adolescents is adopted by child and adolescent psychiatrist Alexander Korte from the University of Munich. He argues that "considering the low rate of permanent transsexual developments in children with a gender identity disorder, irreversible body-changing measures are indicated at the earliest after psychosexual development is completed". According to Korte, the experiences that create identity through the body's own hormones should not be constrained by puberty-blocking LHRH analogues (Korte et al. 2008). At the VU (Vrije Universiteit) University Medical Center Amsterdam, by contrast, puberty is suppressed from a Tanner stage 2-3 onwards (Tanner stage

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2 in biological boys signifies a testes volume of > 3 ml and in biological girls an incipient breast development).

The latter position, also favored by experienced Amsterdam colleagues such as Peggy Cohen-Kettenis and Henriette Delamarre-van de Waal, is the one we adopt in Hamburg. The precondition to starting treatment is of course that the child and adolescent psychiatrist or psychologist have through careful evaluation arrived at the conclusion that such a treatment is indicated. Then we first begin with a GnRH analogue treatment, i.e. with drugs that put puberty into a state of hibernation as it were.

Proponents of a later suppression of puberty such as the child and adolescent psychiatrist Korte fear that a drug therapy could influence further development iatrogenously, i.e. induced by medical measures. This is also taken up by psychiatrists such as the sexual medicine specialist Hartmut Bosinski from Kiel who argues that hormone treatment constituted a therapeutic suppression of a homosexual orientation. The question of homosexuality thus has to be carefully examined together with the adolescents concerned, because from a medical perspective a same-sex sexual orientation is a considerably simpler procedure: both medicalization and surgery can be dispensed with entirely and the individuals becomes sexually active with their biological body. However, the majority of transsexual adolescents were able to prove convincingly that theirs was not a case of homosexual orientation.

But what then are the arguments for an early suppression of puberty? To make it clear from the outset: in our view the advantages of an early treatment outweigh the disadvantages. The main argument: irreversible changes in the body, such as a deepening of the voice and growth of breasts, can be prevented. In addition, the adolescents are relieved of their psychological pressure, the depressive symptoms usually diminish considerably, and where this is not the case then this can be an indication that the diagnosis of transsexuality may be incorrect after all.

There is an interesting study by Steensma et al. (2011) on desisters and persisters conducted in the Netherlands: which patients adhere permanently to a transsexual development and which do not? Here, the age between 10 and 13 seems to be a very decisive one. When puberty sets in there is either a reconcilement with the biological sex or rejection increases dramatically. And when the latter is the case treatment should not be postponed any longer.

In Amsterdam, cross-sex hormone therapy has until now been recommended from the age of 16, which in many cases we find rather late, because this makes

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the adolescents differ markedly in their appearance from their peers. They then live in the status of a neuter, which can be quite agonizing for them. In the Netherlands this age limit of 16 does however not always seems to be strictly observed in practice, as can be inferred from informal conversations on the sidelines of conferences.

A cross-sex hormone treatment can already be indicated when the transsexual development has been clear and stable for many years and the individuals concerned strongly desire a pubertal development that corresponds to the sex/gender they actually feel themselves to be. It is important for transsexual adolescents to develop in a similar way to their peers – so indeed already at thirteen or fourteen. Otherwise, an unequal situation of development arises: the risk of social exclusion increases. Further surgical measures are as a rule recommended for an age after eighteen. There are, however, individual persons who were operated already at sixteen, with mastectomies as well as feminizing surgery being performed.

Performing hormone treatment

What guidelines do we observe at our centre regarding the start of a puberty-suppressing hormone treatment?

- A gender expert recommends such a treatment.
- Puberty has set in and irreversible physical changes are to be expected.
- The patients have been living for some time already in the desired sex/gender and are receiving psychotherapeutic support.
- The parents agree with the treatment.

How do we carry out such a therapy in practice? The adolescents are given GnRH analogues. These are in fact endogenous hormones (of the hypothalamus) that are reconstructed by pharma companies. They block the hypophysis and prevent the release of gonadotropins, the hormones that stimulate the testes and ovaries to produce sex-related hormones. This treatment is therefore very effective in suppressing puberty. In general, we use the drug Trenantone® (with the active agent leuprorelin acetate) that only needs to be injected subcutaneously every three months. Treatment is rather expensive; one single injection costs around 450 Euros. The costs are fortunately covered by insurance, at least in Germany. In transsexual girls who have progressed relatively far in their pubertal development, we usually use cyproteronacetate (Androcur®); surprisingly very low dosages of 5 to 15 mg per day are already sufficient to counteract a masculiniza-

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tion. In biological women who live as boys it is also possible to very effectively suppress the menstrual cycle with a gestagen (Oragametil®).

When is the right time to begin a cross-sex hormone therapy? The adolescents have already lived for some time in the desired sex/gender. In most cases they can't wait to get started with a cross-sex hormone treatment. For my first patient we still involved the ethics commission of the university clinic Hamburg which, after a hearing, delivered a favourable vote. The parents' consent is of course also necessary, since we are dealing with juveniles. In order to initiate cross-sex hormone treatment we require assessments by two different gender experts, even though almost all of our patients are presented in cooperation with the Department of Child and Adolescent Psychiatry at the University Medical Centre Hamburg-Eppendorf.

In most cases, cross-sex hormone treatment has been preceded by puberty suppression for 6 months or a whole year. At this point the adolescents are already living in the desired sex/gender, have informed their surroundings about the situation and are accepted as they are. Fortunately the majority of them report a favourable acceptance after coming out, teachers and co-students usually react with understanding. Some of the schools make an effort to add the desired name in brackets and the new name already appears also on the class roster. Changing rooms, physical education (PE) and the use of toilets are usually no longer an issue. Of course there are also schools where transsexual students are not treated so compassionately.

How do we then in practice go about such a cross-sex hormone treatment? In transsexual boys we begin with the administration of testosterone, with the dosage slightly depending on the bone age and body height. If I were to start with a lot of testosterone in somebody who is small, I would reduce the final body height. Exactly the opposite is true for transsexual girls: if I wait too long with a cross-sex hormone therapy these transsexual women will tend to become taller. That is why I frequently increase the estrogen doses faster, in order to arrive at a final height that conforms to the desired sex/gender. In transsexual girls we use estradiol valerate. In boys, testosterone undecanoate (Nebido®)intramuscularly is very effective in causing virilization. As soon as the Testosterone treatment is started the GnRH analogue can be discontinued.

Difficult decisions

Many parents are afraid of making a mistake when consenting to a hormone treatment and think it better to let nature run its course. This is not an alter-

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native because non-intervention can cause these adolescents to be caught up in a negative vortex, particularly in psychological respect. My colleague Cohen-Kettenis (2008) already mentioned above has expressed this very clearly: "Non-intervention is not a neutral option." I myself have experienced many very impressive cases of how hormone therapy helped these young people to regain their balance, how their performance at school improved and how they again managed to establish positive social contacts. With the help of hormone treatment the physical changes take place in a similar period of time as in members of the peer group and the adolescents are not forced to wait in an extra neuter category until all the others have already become either men or women. In my view, aligning physically with the peer group is very important, for otherwise transsexual adolescents are frequently relegated to a corner, very unhappy, even though partly accepted or tolerated. The hormone treatment not only bolsters their confidence and promotes their general psychosocial development, but also facilitates the development of romantic relationships.

What are the long-term side effects of such a hormone treatment? As yet, not many long-term studies exist, but the risks seem to be manageable. For instance, the risk of breast cancer in transsexual women is even lower in comparison to that of biological women and thus constitutes an increased risk compared to that of breast cancer in biological men. In connection with hormone treatment we also discuss with the adolescents the prospect of infertility. And at this juncture I would like to report about a 17-year-old transsexual girl who six months after beginning cross-sex hormone treatment decided to discontinue everything for 6 months, only to have her sperm cells frozen in case she should wish to have a child later in life. I was very impressed that someone who shortly before a sex/gender reassignment surgery – which has since then taken place – should want to keep this option open for herself. She also has quite specific ideas about one day having a child of her own, either with the help of a Lesbian couple, where here sperm cells can be activated, or through a surrogate mother.

Conclusion

An early hormone treatment usually yields a significantly better result for the body to align itself with the desired sex/gender than if one waits longer, allowing the body to develop in the wrong direction. From my experience, it is extremely agonizing for many of the young people concerned if they are expected to undergo this pubertal development which they themselves perceive as dreadful.

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For this reason I have difficulty in understanding those critics who demand that pubertal development should be completed before being allowed to begin with hormone treatment. Of course, for young people only at the onset of puberty it is almost impossible to assess how life will be as an adult. Sexuality, too, is usually still quite an abstract notion for them. We are able to change these young people physically in the desired direction, but in the process they do not automatically learn everything that belongs to being a woman or a man. I regard myself as someone giving advice and support to these adolescents, someone who also addresses the issue of sexuality and supports them in dealing with their body and their emotions. Debate continues over the question whether an early hormone treatment iatrogenously cements and fixates a certain development, thereby possibly preventing a homosexual development. A few years ago, when hormonal treatment options did not yet exist, a person with a sex/gender identity disorder would almost perforce have tended towards a homosexual orientation – as a feminine homosexual man or as a masculine lesbian woman. For this reason a certain doubt always lingers with us who administer the treatment that there could be a mistake in the assessment and that we are changing the fate of a human life with our therapy. I am aware of this great responsibility and at the same time prepared to take on the risk of this interference with nature, because I experience almost on a daily basis that most of the young people concerned are quite clearly happier with themselves and their lives thanks to my treatment.

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