

Treatment of adolescent transsexuals.

Adolescents are eligible for suppression of endogenous puberty, when they fulfil the DSM-IV criteria for gender identity disorder, belong to the early onset transsexual group, are psychologically stable, and live in a supportive environment. This is assessed in an extensive first stage of a diagnostic procedure, which is carried out by members a gender team, who are specialized in the treatment of children and adolescents. The suppression of puberty should be considered as an aid in the entire diagnostic procedure. In the second stage of the diagnostic procedure the patients are seen by a psychologist until they are 16 years old. If the patient changes his or her mind pubertal delay can be brought to an end and the patient can continue to live in the role of his/her biological sex. If the patient, however, still is convinced that he/she wants to undergo a sex reassignment, cross-sex hormones can be prescribed and the actual sex reassignment starts.

Suppressing spontaneous puberty (with development of the unwanted sex characteristics) gives these adolescents an enormous advantage in later life, because they are able to pass effortless as someone of the desired sex. This treatment, however, is not without criticism. It is argued that the adolescent should experience some of his/her own puberty. Without such experience they would never be able to really appreciate the effects of their own puberty and perhaps be at greater risk for post-treatment regret. Because thus far little is known about the psychological effects of pubertal sex hormones in adolescents with gender identity disorder, the policy is to start pubertal suppression only after Tanner stage 2 has been reached.

We developed a treatment schedule for transsexual boys and girls, whereby we start with the first phase ie suppression of endogenous puberty by treatment with GnRH analogs, at B2-3 in girls and G3 (till a testicular volume of 6-8ml) in boys. In these pubertal stages there is not an irreversible status of endogenous pubertal development.

The aims of puberty delaying treatment in adolescent transsexuals are:

- Suppression of spontaneous pubertal development.
- Allow for a balanced decision regarding sex reassignment (starting with cross-sex hormones at 16), by having a large number of psychodiagnostic sessions without the pressure of the development of the own-sex sex characteristics)
- To take care for an optimal final height and bone development during the treatment period.
- To prevent side effects of a pubertal delay or due to the induction of puberty with cross gender sex steroids.

Adolescent transsexuals will be treated from early puberty till the age of 16 years, where after if desirable cross sex steroids treatment can be initiated in addition to suppression of endogenous puberty. From 18 years of age, when the patient is at an age to make his/her own decision, surgical correction is the final option.

In the past these male patients have been treated with anti-androgens in order to decrease virilization. It appeared that anti-androgen treatment was not sufficient; virilization still occurred.

The GnRH analog triptorelin (Decapeptyl[®], Ferring, Denmark) desensitizes the pituitary to endogenous GnRH resulting in complete suppression of gonadotropin levels.

Treatment of adolescent transsexuals include long term treatment, in girls from a mean age of 11-12 years, in boys from 14-15 years of age till 18 years of age in both sexes. Important questions during the long term suppression of puberty are the effects on height and bone development in the period till 16 year of age, when decapeptyl^R is the only treatment. Secondly, how height and bone development occur, when at the age of 16 years in addition to suppression of endogenous puberty, cross sex steroids are introduced.

Treatment schedule:

Prepuberty	puberty	B2-3/G3 tv 6-8 ml	16years	18 years
<i>No treatment</i>		<i>Decapeptyl</i>	<i>Surgery</i>	
			<i>Cross sex steroids</i>	

Follow up:

Every three months:

anthropometry: height, weight, sitting height, Tanner stages
skin folds, hip and waist circumferences

laboratory:

endocrinology: LH, FSH, E2/T, DHEA-S, androstenedione, prolactin, IGF-1, IGF-BP3, free T4, osteocalcin,

metabolic parameters: insulin, glucose, HbA1c, lipids

Every year as well as just prior to change in treatment:

Bone density using DEXA

Bone age on X-ray of the left hand

Treatments:

Suppression of puberty: Decapeptyl is prescribed in a dose of 3,75mg every 4 weeks (one gift extra two weeks after start of treatment).

Induction of puberty:

Female puberty: treatment with 17-beta estradiol (available in tablets of 0.1 and 0.5 mg) in an increasing dose schedule every 6 months:

- 5 µg/kg/day
- 10 µg/kg/day
- 15 µg/kg/day
- 20 µg/kg/day
- adult dose = 2mg per day

Male puberty: treatment with testosterone esters (Sustanon 100) in an increasing dose schedule every 6 months:

- 25 mg/m² /2 weeks im
- 50 mg/m² /2 weeks im
- 75 mg/m² /2 weeks im

- 100 mg/m²/2 weeks im
- adult dose Sustanon 250 per 3-4 weeks

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