

# Final adult height in *SRY*-negative 46,XX Ovotesticular differences of sex development individuals.

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## Introduction and Objective

Differences of sex development (DSD) encompass a variety of conditions with atypical development of chromosomal, gonadal or anatomic sex. 46,XX ovotesticular (OT) DSD is a rare condition, in which the presence of testicular and ovarian tissues is identified in the same individual. These patients present variable phenotypes with a wide spectrum of atypical genitalia and their sex assignment can be male or female. Short stature is a frequent issue in patients raised in the male social sex.

The objective is to compare the final adult height of ten 46,XX OT patients untreated with recombinant human growth hormone (rhGH) with two 46,XX OT patients treated with rhGH.

## Methods

The final adult height of twelve male *SRY* (-) 46,XX OT-DSD patients were retrospectively studied. Two of them (Cases A and B) received 0.05 mg/Kg/day rhGH therapy, associated with GnRH analog or aromatase inhibitor. Ten patients did not receive rhGH therapy neither hormone-blocking therapy. Seven of ten patients had spontaneous puberty and in three patients who underwent bilateral gonadectomy at the childhood, puberty had been induced.

## Results and Conclusions

Mean adult height in 46,XX OT DSD patients that did not receive rhGH therapy was 163.7cm (range: 153.5 to 176cm). The final adult height in patients with spontaneous puberty is 163.5cm while in the induced puberty group was 165.8cm.

**Case A:** Therapy with rhGH started at chronological age (CA) of 10 yrs and bone age (BA) of 13 yrs. At that time, his height was 136cm (SD -0.3) and the growth rate (GR) 3.5cm/year. The target height (male sex) was 169cm. GnRH analogue was simultaneously initiated and maintained for 9 months. The duration of rhGH therapy was 5 yrs. His adult height reached 171cm.

**Case B:** Pubertal induction using testosterone esters (50mg/mo) started at CA of 14 yrs, BA was 13.5 yrs, GR 5.2cm/year and his height was 141cm (SD -2.4). The rhGH treatment started at the chronological age of 15.1 yrs, BA 14 yrs and height of 147cm (SD -2). In the first year of rhGH, his GR was 9.4 cm. Letrozole (2.5 mg/day) was associated in the last 6 months of treatment. The duration of rhGH therapy was 1.75 yrs. His adult height reached 158.5cm. He has been adopted in infancy and the informed target height (male sex) was 152cm.

Side effects were not observed in neither patients.

We concluded that early rhGH treatment may be useful to optimize growth and adult height of male raised 46,XX OT-DSD patients. Given the rarity of this condition, such studies are likely to be complex. Further research is needed to elucidate the optimal timing for the introduction and duration of treatment with rhGH to improve linear growth.