# Physical assessment in Chinese children with 5a-reductase type 2 deficiency

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## Objectives:

To study the growth pattern in Chinese pediatric patients with 5αRD.

## Methods:

Data were from 187 patients with 5αRD (age from 0-16 years old) who visited 8 pediatric endocrine centers from Jan, 2010 to Dec, 2017. Children with 46, XY DSD without hormone treatment and those with testicular dysfunction were also selected as a positive control group. Data were from 187 patients with 5αRD (age from 0-16 years old) who visited 8 pediatric endocrine centers from Jan, 2010 to Dec, 2017. Children with 46, XY DSD without hormone treatment and those with testicular dysfunction were also selected as a positive control group.

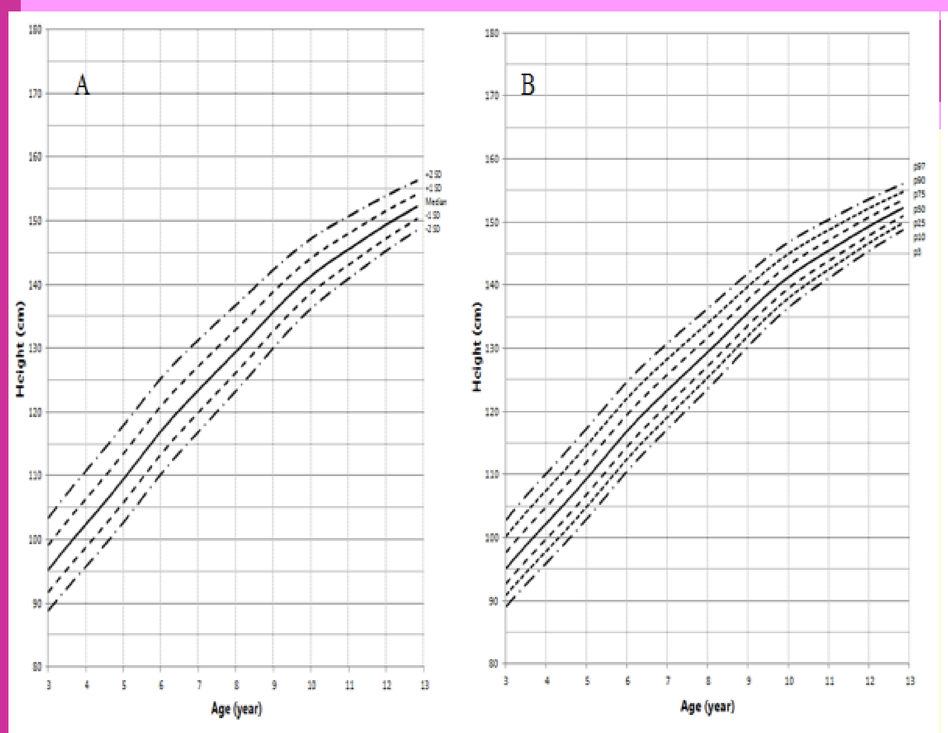


*Fig 3. Height in children with 5αRD (3-12 years old). (A) Percentile curve; (B) Standard deviation curve.*

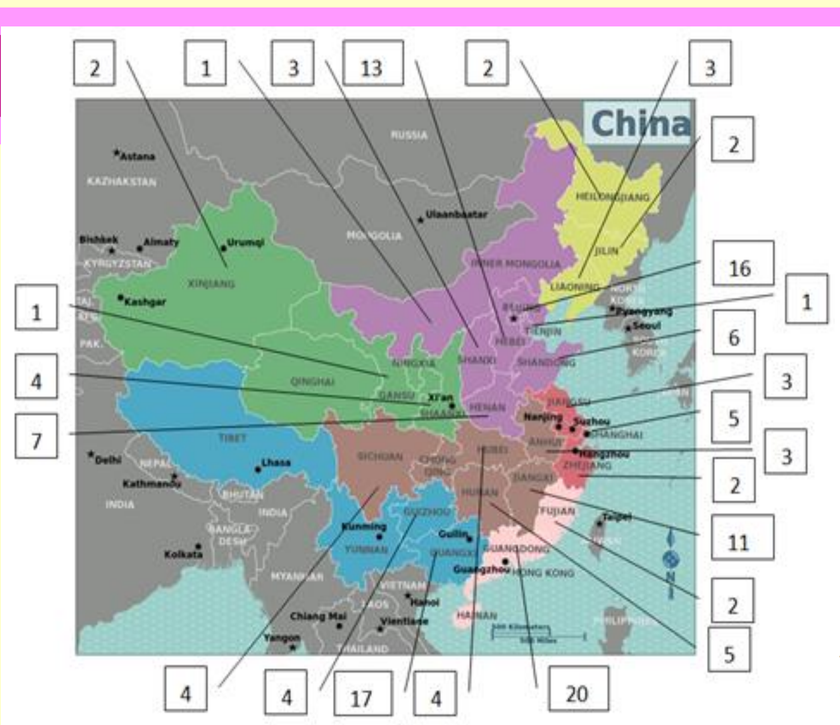


*Fig 2. Geographical distribution of children with 5αRD2 in China.*

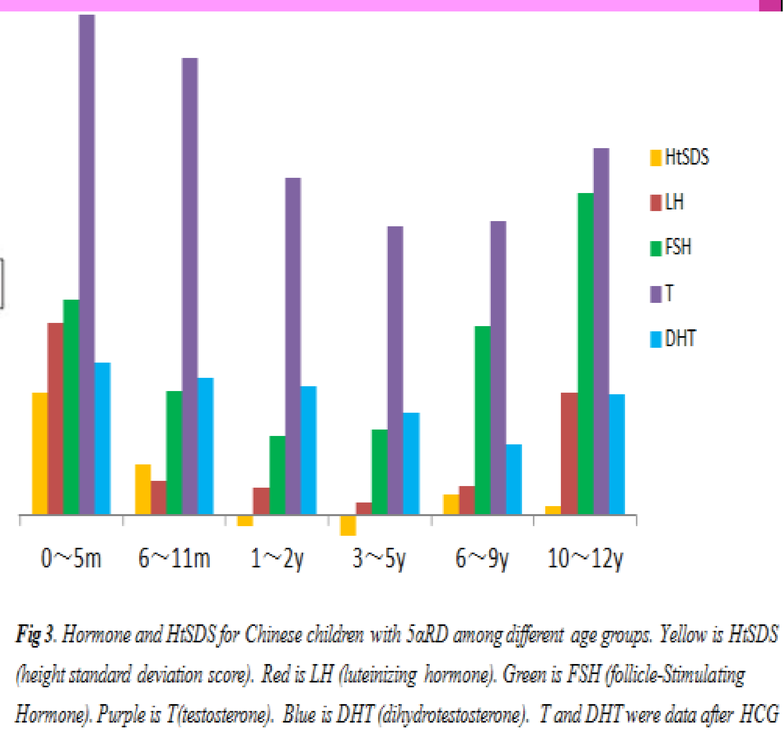


*Fig 3. Hormone and HtSDS for Chinese children with 5αRD among different age groups. Yellow is HtSDS (height standard deviation score). Red is LH (luteinizing hormone). Green is FSH (follicle-Stimulating Hormone). Purple is T(testosterone). Blue is DHT (dihydrotestosterone). T and DHT were data after HCG stimulation test.*

## Results:

Compared to normal boys, higher height standard deviation scores (HtSDS) were observed in 5αRD children who were <1-year-old (p=0.002, 0.048, respectively), and higher weight standard deviation scores (WtSDS) in those < 6-month-old (p=0.012). Then HtSDS and WtSDS showed lower than those of normal boys of the same age when > 2-year-old. The variation tendency of HtSDS in Chinese 5αRDs was consistent with the trend of T after HCG stimulation test. HtSDS and T after HCG stimulation test in the EMS < 7 group were higher than those in the EMS ≥7 group. Additionally, the ratio of bone age over chronological age (BA/CA) was lower than 1 in 5αRD children.

## Conclusions:

The children with 5αRD had a special growth pattern which was affected by high level of T. Their body length was longer in 0~5 months group, and then its growing slowed down leaving children shorter than normal boys after the age of 2 years old. The bone age was delayed in 5αRD children. This may provide a chance for androgens treatment in young age 5αRD boys for their micropenis.

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57ESPE 338--P2
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