

## 46XY,DSD Due To 5 $\alpha$ -Reductase Type 2 Deficiency In 19 Chinese Patients

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### Background:

patients with 46,XY,DSD are characterized by ambiguous or female external genitalia, caused by incomplete intrauterine masculinization. 5 $\alpha$ -reductase type 2 deficiency due to SRD5A2 gene mutations result in inadequate conversion from testosterone to dihydrotestosterone(DHT), and is responsible for incomplete virilization in male patients. Up to date, more than 50 mutations have been reported, however, clinical features are variable and heterogeneous.

### Objective and hypotheses:

The study was performed to report the clinical and genetic analysis of SRD5A2 deficiency, in order to help to build up the clinical management of these patients.

### Methods:

From 2008 to 2013, 19 cases from 18 irrelevant families who had variable degree of incomplete virilization but normal male karyotype were confirmed as SRD5A2 deficiency according to the gene analysis. Phenotype and genotype, as well as the response to DHT gel management were studied.

### Results:

1. 4(21%) had ambiguous external genitalia, pseudovagina, bilateral testes palpable in inguinal canal. 2(10%) had micropenis and severe hypospadias, bifid scrotum. 7(37%) micropenis and mild to moderate hypospadias. 6(32%) had isolated microphallus.
2. T/DHT ratio at basal line and after human chorionic gonadotropin(HCG) stimulation test was 22.79(17.08, 28.27), 67.23(27.56, 128.56), respectively.
3. Direct sequencing analysis revealed 5 types of mutations in these patients. One was novel heterozygous mutation, the others were previously reported. 27% mutations were in exon 1, 73% mutations were in exon 4.
4. Almost all patients were raised as males, except one.
5. Penis length, as well as penis diameter increased after 2.5% DHT gel (Andractin) transdermal management (12mg(0.3mg)/kg.d), except one case.

### Conclusion:

Clinical presentation of SRD5A2 deficiency is extremely variable. No relationships be found between the degree of incomplete virilization, T/DHT ratio and genotypes. DHT gel can improve penile size and can be preparation before surgery.

### References

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