

The P30L mutation in the *CYP21A2* gene in a girl with congenital adrenal hyperplasia with hidden salt loosing and central precocious puberty

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Background and Objective

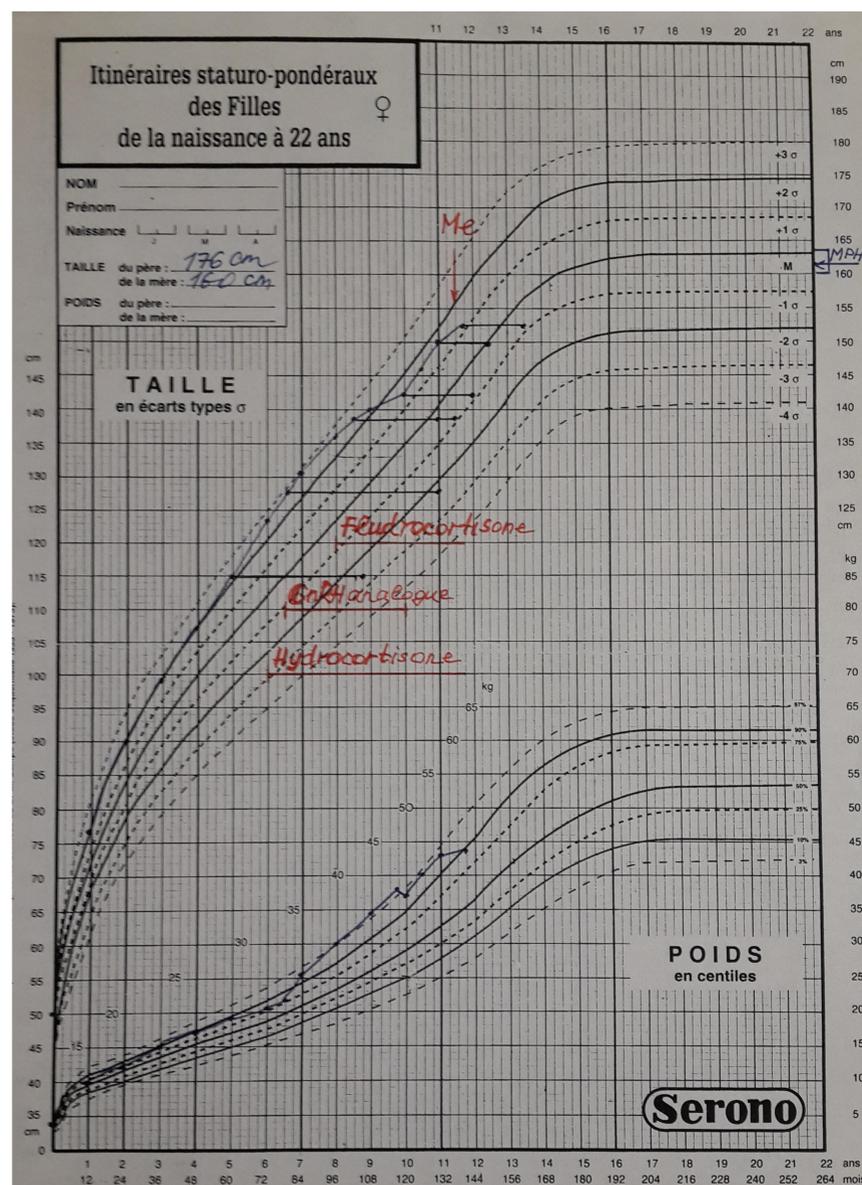
In CAH due to 21-OH deficiency, phenotype-genotype correlation is known. However, the same genetic events may cause different clinical forms of the disease.

Methods

A case of CAH associated with the P30L in the *CYP21A2* gene is presented.

Results

The Caucasian girl was born normally and growing healthy till the age of 3.y., when her mother noticed pubic hair growth; at the age of 4 she had acne and an increasing sweating. At 6 y. of age, she was brought to paediatric endocrinologist for the first time due to adrenarche progression and accelerated growth. At examination, her height was +2,5 SDS with no weight excess, when MPH was Median. Her BA was 5 y. accelerated and counted 11y., with poor final adult height prognosis, i.e. 140 cm (- 4SDS). Blood biochemistry found moderately **elevated 17-OP** and normal cortisol. The child was diagnosed with CAH, most probably non-classical, and treatment with 12 mg/m²/day of **hydrocortisone** divided in 3 doses was prescribed. The karyotype was 46,XX. **At 6,5 y.**, breast development started with continuing growth acceleration and some BA progression. Pelvic US found pubertal uterine size. The test with GnRH-agonist confirmed **central precocious puberty** in the child. A **low serum sodium** with elevated potassium levels were found at the next biochemical exam. Consequently, treatment with **GnRH-agonist 3,75 mg once in 28 days, and fludrocortisone 50-100 µg** daily was prescribed. The patient was under this combined therapy for 3,5 y. Neither salt loosing no further puberty progression was seen. At the age of 10 y., GnRH-agonist was withdrawn. When molecular diagnosis became available, the homozygous **mutation P30L in the *CYP21A2* gene** was discovered. She had menarche at 11 6/12 y. The patient is currently almost 12 y.o., her height is 152cm, under GC and MC replacement, her BA is 13 6/12 y.



Conclusion

As it is known, the P30L mutation is mostly associated with NC CAH. The clinical course in our patient is more in favor for SV CAH and confirms again that genotype-phenotype correlation in CAH is not always absolute. Combination of the replacement GC therapy with MC and “experimental” GnRH-analogues may improve auxological outcome of the patient and provide better quality-of-life in the future.

The authors have nothing to disclose

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References

1. Speiser PW. et.al 2010 J Clin Endocrinol Metab.
2. Han TS. et al. 2013 Clinical Endocrinology.
3. Araujo RS. et al. 2005 Clin Endocrinol (Oxf).

