



COGNITIVE FUNCTION AND LINEAR GROWTH IN PREDNISONONE -TREATED CHILDREN WITH SALT-WASTING CONGENITAL ADRENAL HYPERPLASIA

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INTRODUCTION

- Congenital adrenal hyperplasia (CAH) is a disorder with a wide spectrum of severity.
- Impaired cognition has been reported in patients with CAH, although the findings have been conflicting.
- It has been hypothesized that the major causes of the deficits are prenatal hormonal imbalances and/or excessive glucocorticoid treatment.

AIM

The objective of this study was to investigate cognitive function in children with CAH and to assess their anthropometric measurements who were diagnosed early in life and were under good hormonal control.

METHOD

- This study was conducted on children with CAH at a tertiary center for Pediatric Endocrinology at Alexandria University Children's Hospital in Egypt.
- Anthropometric measurements were done for them.
- Cognitive function testing was done by using the Stanford-Binet Intelligence Scale, Forth Edition. Vineland Adaptive Behavior Scale (VABS) was used in children that refused to interact in the Stanford-Binet Intelligence Scale.

RESULTS

- **Forty-six** children and adolescents (their mean age 7.3 ± 3.8 years) were included, 14 males and **32** females.
- None of their mothers received Dexamethasone during their gestation.
- **41/46** were diagnosed during the first 3 months of their life and **5** during the first year of life.
- All children were on Prednisone therapy (3.7 ± 0.5 mg/m²/day) (equivalent to hydrocortisone dose = 14.8 ± 2.3 mg/m²/day) and fludrocortisone.
- Their doses were tailored to keep Testosterone level (<9 ng/mL) and 17-OHP levels are < 600 ng/dl in the morning before medication.
- **34/ 46** had **normal** weight (>5 – <85 th percentile), **8/46** were **overweight** (85 - <95 th percentile) and **4/46** were **obese** \geq 95 th percentile.
- Their mean height SDS (**HtSDS**) was -1.8 ± 1.4 SD and mean **BMI** was 20.3 ± 6.8 %.
- **Mild** mental retardation occurred in **13.7 %**, **Slow learning** occurred in **25.5%** and **Low average IQ** occurred in **21.6 %** of them.
- **Moderate retardation** was found only in **one** girl.
- There was **No** significant difference in IQ score between boys and girls (t=0.481, p=0.634).

IQ interpretation (n = 46)	Males (n =14)		Females (n =32)		(n = 46)	
Moderate retardation (36-51)	0	0.0%	1	3.1%	1	2.0%
Mild Retardation (52-67)	2	14.3%	5	15.6%	7	13.7%
Slow Learner (68-78)	4	28.6%	9	28.1%	13	25.5%
Low average (79-88)	4	28.6%	7	21.9%	11	21.6%
Average (89-110)	4	28.6%	10	31.3%	14	27.5%

IQ Interpretation in cases of CAH

CONCLUSIONS

- Impaired cognitive function was observed in patients with CAH despite reasonable control of their androgens and 17- OHP levels.
- These results may reflect prenatal adrenal androgen excess, and the potential psychosocial consequences of the disorder.

REFERENCES

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