Correlation of 11-oxygenated C19 androgens with the clinical and biochemical characteristics in premature adrenarche

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INTRODUCTION

Premature adrenarche (PA),
- appearance of pubic and/or axillary hair in girls younger than 8 years old
- caused by the rise in adrenal androgen production
- Dehydroepiandrosterone (DHEA)
- DHEA - sulfate (DHEAS)
- Androstenedione (A4)

Biochemical marker of adrenarche: DHEAS ≥ 400 µg/L
Adrenals also produce 11-oxygenated C19 androgens:
11β-OH androstenedione (11OHA4)
11β-OH testosterone (11OHT)

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OBJECTIVE

To investigate the relation of 11-oxygenated C19 androgens with the clinical and biochemical characteristics of PA

METHODS

A cross-sectional study
Quantitation of plasma
- DHEA
- DHEAS
- A4
- Androstenedione
- 17OHprogrenolone
- 11OHA4
- 11OHT

Idiopathic PA group (n=53)
Age range 3.6-8.5 yrs, girls
Control group (n=35)
Age-matched girls without PA

METHODS

Correlation of 11-OHAd with adrenal androgens (11OHA4 and 11OHT) and BMI-Sscore. The height and BMI-S score were higher in the patients compared to controls (P<0.001)
Mean CA and BA of the patients were 6.8±1.1 and 7.6±1.4 years, respectively
DHEA, DHEAS, A4, androstenedione, 17OH-pregnenolone concentrations were higher (P<0.0001),
No difference in 11OHA4 and 11OHT concentrations in patients compared to controls.

CONCLUSIONS

Although 11OHA4 correlated with adrenal androgens and associated with advanced bone age, our findings do not ascribe a significant role of 11-oxygenated androgens in the pathophysiology of premature adrenarche in girls.

REFERENCES