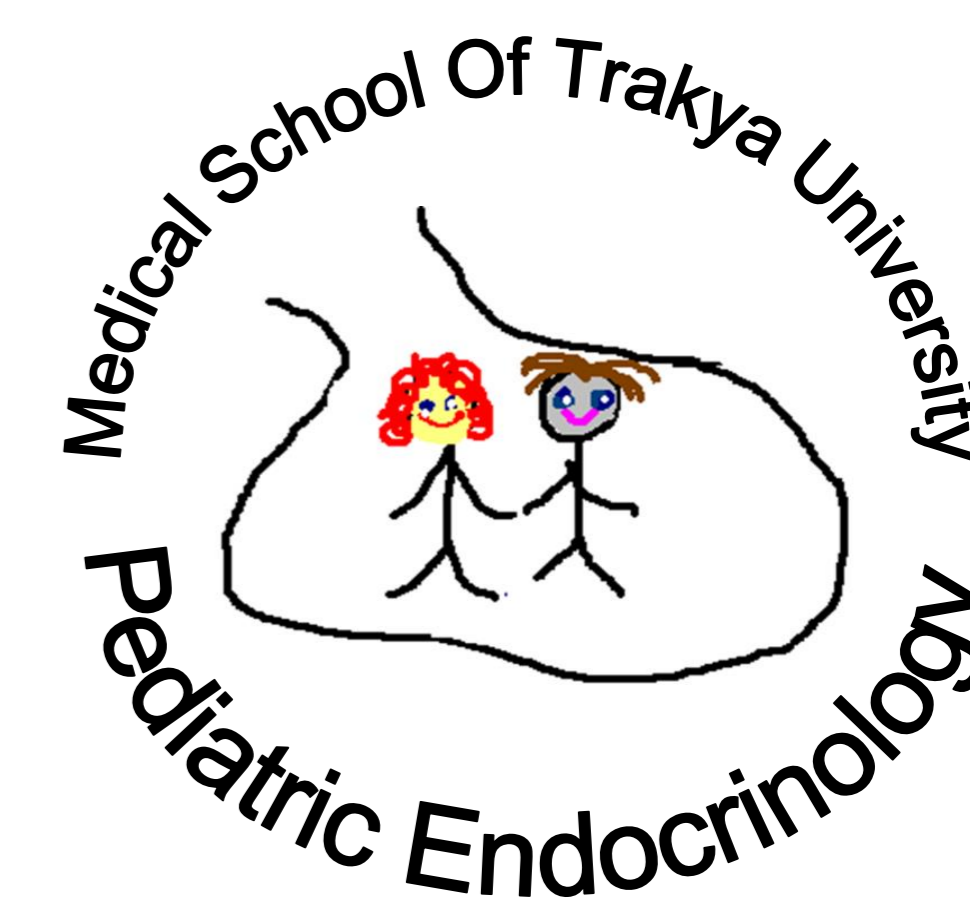




# Clinical-Laboratory Findings of the Cases with Premature Pubarche and the Value of ACTH Stimulation Test in the Differential Diagnosis



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**Introduction:** Premature pubarche (PP) is defined as pubic and/or axillary hair development before 8 years age for girls and 9 years age for boys. Most important disease in differential diagnosis of PP is non-classical congenital adrenal hyperplasia (NC-CAH). The aim of this study was evaluating clinical and laboratory findings and results of ACTH stimulation test in cases who were diagnosed as PP according to clinical and laboratory findings. Additional aim is to reevaluate the 17OHP response ( $\geq 2$  ng/ml) as a predictive factor of NC-CAH cases.

**Method:** Clinical characteristics, anthropometric values and laboratory findings including basal cortisol, DHEAS, 17OHP, AS, T and stimulated cortisol, 17OHP, AS levels in standard ACTH test and bone age were evaluated in 75 PP cases (5 male and 70 female). Cases were divided into 3 subgroups according to peak 17OHP levels; Group 1 (normal; p17OHP <4,9 ng/ml), Group 2 (heterozygot-CAH; p17OHP: 5-9,9 ng/ml) ve Group 3 (NC-CAH; p17OHP  $\geq 10$  ng/ml). Anthropometric and laboratory findings were compared between these subgroups.

**Results:** Age of PP cases at diagnosis was  $7,2 \pm 0,7$  years and ratio of female/male was 14/1. Height SDS and weight SDS of cases was  $0,9 \pm 1,1$  and  $1,5 \pm 1,5$ , respectively. BMI SDS of cases was  $1,1 \pm 1,2$  and mean bone age SDS was  $1,4 \pm 1,4$ . Intrauterine growth retardation was detected in 7 cases (9%) and overweight in 43 cases (54%).

**Table 1. Comparison of anthropometric and laboratory findings in subgroups of PP cases according to 17OHP levels in ACTH stimulation test**

Findings	Group 1 (n=64)	Group 2 (n=8) Mean±SD	Group 3 (n=3)	p
Age at diagnosis (year)	7,2±0,7	7,3±0,6	7,4±0,5	0,848
Bone age SDS	1,3±1,4	1,4±1,5	1,9±1,5	0,797
Bone age/Chronological age	1,1±0,1	1,2±0,1	1,2±0,1	0,641
Weight SDS	1,4±1,4	1,5±2,3	1,9±0,4	0,675
Height SDS	0,9±1,0	0,3±1,6	1,9±1,2	0,212
BMI SDS	1,0±1,2	1,3±1,7	1,2±0,4	0,831
<b>ACTH stimulation test</b>				
		Mean±SD (Range)		
<b>0.min</b>				
Cortisol (mcg/dl)	16,7±7,5 (6,4-35,8)	11,5±5,2 (2,6-20,8)	15,1±6,4 (11,3-22,3)	0,222
DHEAS (mcg/dl)	73,2±38,0 (16,5-181,0)	92,4±37,9 (43,0±149,1)	64,9±18,9 (47,7±85,2)	0,362
AS (ng/ml)	0,7±0,6 (0,3-4,1)	0,5±0,2 (0,3-0,8)	0,9±0,2 (0,63-1,02)	0,334
17OHP (ng/ml)	0,8±0,4 (0,1-1,9)	1,4±1,2 (0,3-3,4)	2,3±1,8 (1,13-4,37)	0,051
<b>60.min</b>				
Cortisol (mcg/dl)	32,4±5,6 (12,1-49,8)	30,8±3,7 (26,4-37,4)	22,9±3,1 (19,5-25,5)	<0,05
AS (ng/ml)	1,1±0,8 (0,3-5,3)	1,0±0,3 (0,7-1,5)	2,4±1,7 (1,2-3,6)	0,223
17OHP (ng/ml)	2,5±0,9 (0,8-4,8)	6,2±0,7 (5,1-7,4)	24,3±18,7 (13,4-45,9)	<0,001

**Table 2. Clinical and laboratory findings of cases with NC-CAH**

Characteristics	Case 1	Case 2	Case 3
Gender	F	F	M
Age at diagnosis (year)	6,9	8,5	7,9
Weight SDS	1,5	2,24	2,16
Height SDS	1	3,3	1,6
BMI SDS	1,1	0,8	1,6
Bone age	8,9	8,9	10
Bone age SDS	2,9	0,1	2,6
bCortisol (mcg/dl)	22,4	11,3	11,4
pCortisol (mcg/dl)	23,6	22,5	19,5
b17OHP (ng/ml)	1,4	1,1	4,4
p17OHP (ng/ml)	45,9	13,6	13,4
Consanguinity	2 degree	none	none

### Relationship between variables:

There was no relationship between PP development age and BMI SDS, basal DHEAS and basal 17OHP levels. Positive correlation between BMI SDS and height SDS, bone age SDS was determined ( $r=0,317$ ,  $p=0,006$ ;  $r=0,372$ ,  $p=0,018$  respectively).

**Conclusion:** According to the results of study, premature pubarche is the problem of mainly girls and being overweight is a risk factor. Basal 17OHP levels should be reconsidered in the use of differential diagnosis of NC-CAH. As cortisol response to ACTH stimulation test is suboptimal in NC-CAH cases, trials to define approach to these cases with clinical signs in severe trauma and stress is needed.