

# Cardiovascular disease risk factors in girls with isolated premature pubarche.

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**BACKGROUND:** Premature pubarche is the appearance of pubic hair before 8 years in girls and 9 years in boys, being more frequent in girls. Current literature demonstrates associations between this condition and metabolic and cardiovascular diseases. There are no local data about the frequency of cardiovascular disease risk factors in girls with isolated premature pubarche Blumenau-SC.

**OBJECTIVE:** To evaluate the frequency of cardiovascular disease risk factors in girls with isolated premature pubarche (IPP).

**METHODS:** Observational study using data from medical records of 41 girls with IPP aged 4-10 years attended at the Paediatric Outpatients Clinic of the University of Blumenau between 1999 and 2013. Excess weight (overweight and obesity according WHO criteria), blood pressure, low birth weight (<2.500 g), bone age (Greylich and Pyle), dyslipidaemia (total cholesterol >150mg/dL or LDL-c >100mg/dL or HDL-c ≤45mg/dL or TGL >100mg/dL), basal blood androgens levels (17-OH-progesterone, androstenedione, DHEA-S and total testosterone), hyperinsulinism (basal insulin >15mUI/L) and insulin resistance (HOMA-IR >3.16) were analysed. The appearance of pubarche before 8 years without breast development was considered IPP. In the presence of advanced bone age (>1 year) and elevated basal blood androgens levels an adrenal stimulation test with exogenous ACTH was performed to ruled out congenital adrenal hyperplasia.

**CONCLUSIONS:** Excess weight and dyslipidaemia were the most frequent cardiovascular disease risk factors observed. Almost 50% of the girls presented these clinical conditions.

**RESULTS:** The mean age at the first medical evaluation was  $7.8 \pm 1.4$  years. Clinical and biochemical parameters are presented in Table 1. Excess weight was present in 42.1% (26.3% overweight and 15,8% obesity), elevated blood pressure in 17.3% and dyslipidaemia in 45.8%. Hyperinsulinism and insulin resistance were not observed. However the group with excess weight had fasting insulin levels higher than excess weight group ( $7.3 \pm 4.2$  vs  $4.3 \pm 2.8$ ;  $p < 0.05$ ). Bone age was advanced in 81.8%. Basal blood levels of 17-OH-progesterone, androstenedione, DHEA-S and total testosterone were elevated in 48.6%, 35.1%, 32.4% and 37.2% respectively. Low birth weight occurred in 13.1%.

Table 1: Clinical and biochemical data

Variable	Media±DP
Age (years)	7.8 ± 1.4
Weight (z-score)	0.7 ± 1.2
Height (z-score)	0,5 ± 1,2
BMI (z-score)	0.7 ± 1.1
Systolic Blood Pressure (mmHg)	110.0± 10.4
Diastolic Blood Pressure (mmHg)	70.0 ± 9.4
Glycaemia (mg/dl)	81.0 ± 4.3
Insulin (µU/mL)	5.1 ± 2.7
HOMA-IR	1.1 ± 0.6
Cholesterol total (mg/dl)	162.2 ± 65.7
LDL-c (mg/dl)	96.7 ± 63.3
HDL-c (mg/dl)	54.4 ± 18.8
Triglycerides (mg/dl)	69.3 ± 25.9

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