P2-P359 Clinical, hormonal and metabolic profile in adolescent girls treated with gonadotropin releasing hormone agonist for idiopathic central precocious puberty

Camelia Procopiuc, Cristina Dumitrescu, Mădălina Vintilă, Andra Caragheorgheopol, Andreea Brehar, Lidia Radomir, Iuliana Gherlan
„CI Parhon" National Institute of Endocrinology, Department of Paediatric Endocrinology, Bucharest, Romania

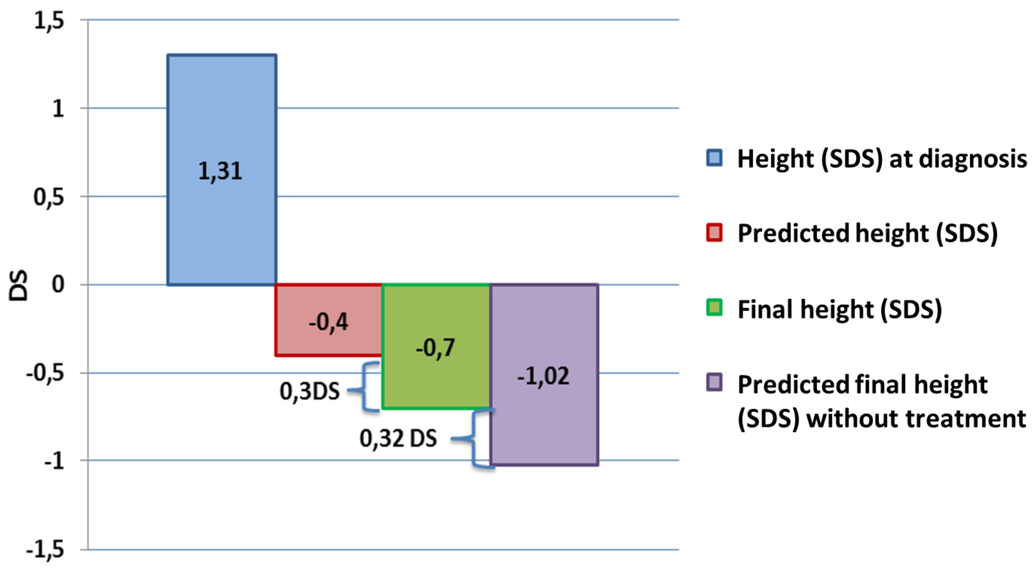
Introduction: Gonadotropin-releasing hormone agonist (GnRHa) is the gold standard treatment for central precocious puberty (CPP). In recent years, increased prevalence of polycystic ovary syndrome (PCOS) has been reported in girls treated with GnRHa for CPP. Attributes of PCOS overlap normal pubertal changes, making the diagnosis of PCOS in adolescence controversial.

Aim: To assess the metabolic profile, the prevalence of PCOS and describe its phenotypes as function of different combination of diagnostic criteria in young girls treated with GnRHa for idiopathic CPP (ICPP).

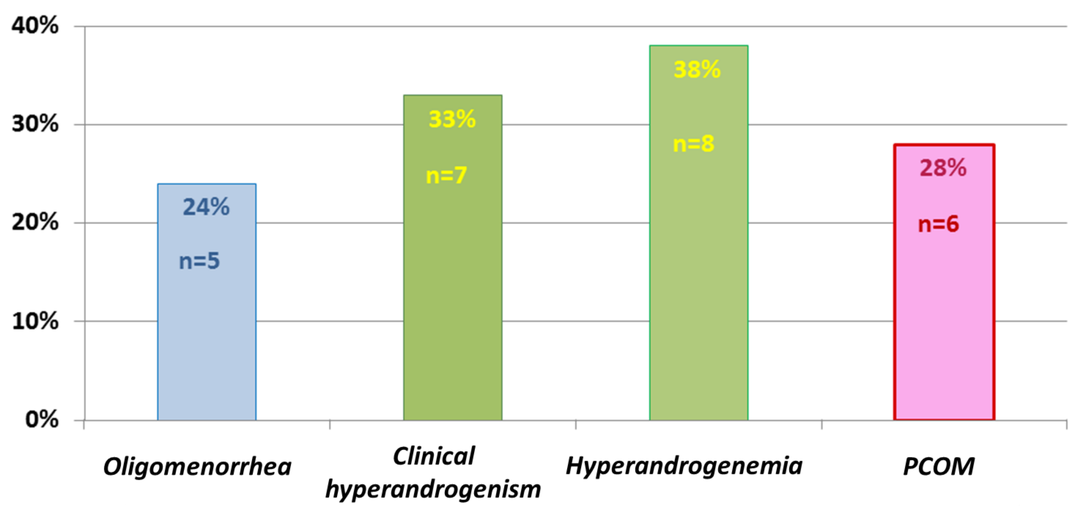
Methods: We evaluated 22 girls treated with GnRHa for ICPP, who were at least 2 years after menarche and had attained near final height. We assessed auxological parameters, lipids, markers of insulin resistance, androgen levels, and the prevalence of PCOS and PCOS phenotypes. PCOS was diagnosed using 2 methods: 1) the Rotterdam criteria (2004) and 2) the 2015 consensus of Pediatric Endocrine Society on PCOS diagnosis in adolescents criteria, consisting of otherwise unexplained hyperandrogenism and persistent anovulatory menstrual abnormalities.

Results

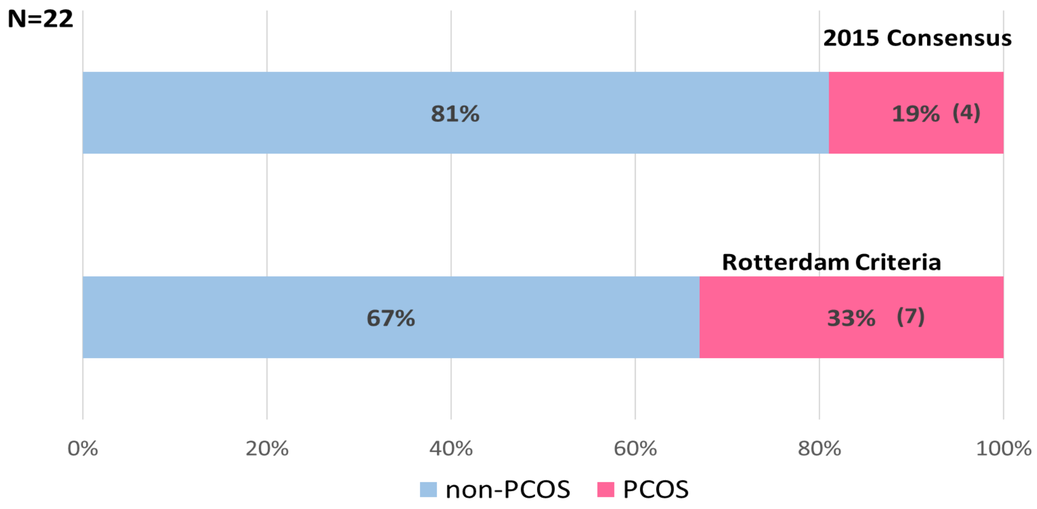
Mean gynecological age at evaluation was 3.06 ± 1 years. Duration of treatment with GnRHa was 3.2 ± 1.7 years



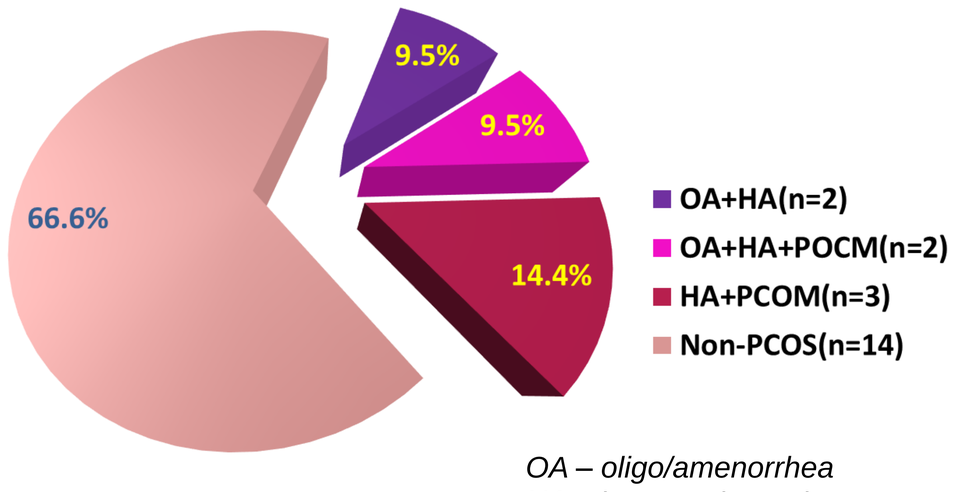
Height gain with treatment over predicted adult height with and without treatment



Prevalence of individual PCOS criteria

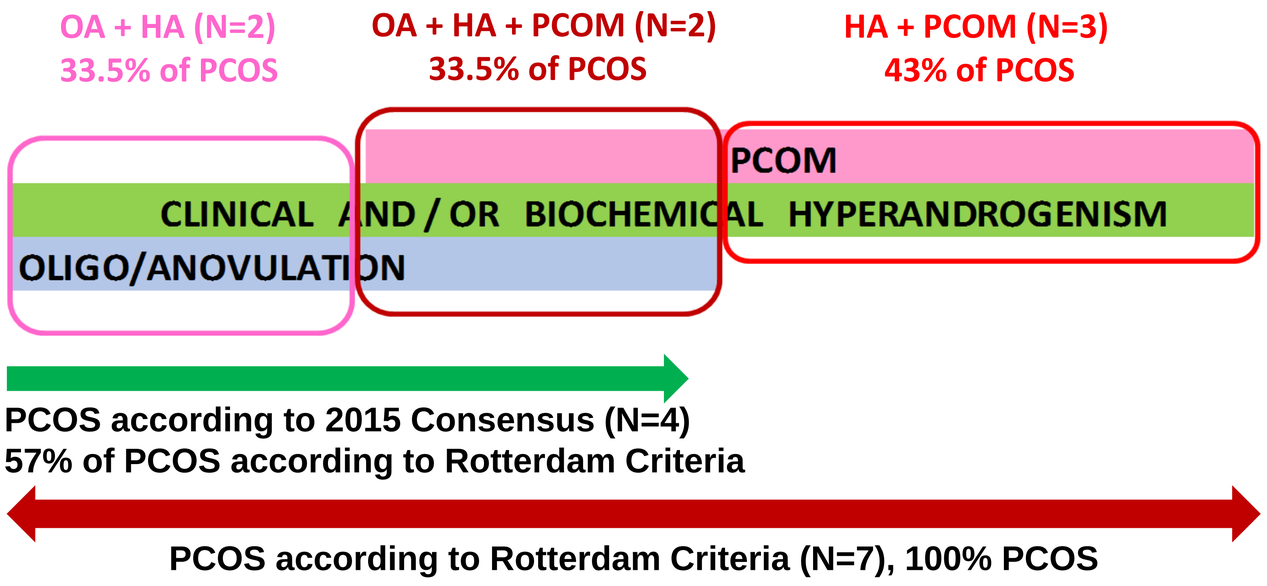


PCOS diagnosis using different criteria



OA – oligo/amenorrhea
HA – hyperandrogenism
PCOM- polycystic ovary morphology

PCOS phenotypes



PCOS diagnosis differences using different criteria

	Non-PCOS	PCOS	P value
BMI SDS	0.54 ± 1.04	0.70 ± 1.22	NS
LH (µU/mL)	4.55 ±2.66	12.47 ± 6.76	0.03
FSH (µU/ml)	4.95 ± 1.48	5.84 ± 1.96	NS
Testosterone (ng/mL)	0.29 ±0.14	0.52 ± 0.2	NS
Dihydrotestosterone (ng/mL)	337.01 ± 221.34	340 ± 116.72	NS
Androstenedione (ng/mL)	2.54 ± 1.1	3.52 ± 1.06	NS
DHEAS (µg/dL)	224.26 ± 92.84	291.42 ± 90.61	NS
HOMA-IR	1.59 ± 0.4	1.85 ± 0.71	NS
Glucose/insulin ratio	10 ± 2.70	10.1 ± 4.41	NS

Biological profiles in PCOS vs non-PCOS group diagnosed using 2015 Consensus criteria

Among clinical, metabolic and hormonal parameters, the differences between non-PCOS and PCOS girls were at the limit of statistical significance. **Only LH values were statistically significant between the 2 groups**

There were no statistically significant differences at the time of CPP diagnosis between PCOS and non-PCOS subjects in auxologic or biochemical data
→ no predictive factors for PCOS were found

Conclusions: Patients with ICCP treated with GnRHa need to be followed-up for PCOS in adolescence and in young adulthood, in order to establish whether the condition persists, due to its implications on fertility and metabolic complications. In our series, we have no arguments to sustain that GnRHa treatment increased the prevalence of PCOS.

Bibliography

1. *Rotterdam ESHRE/ASRM-S Revised 2003 consensus on diagnostic criteria and long-term health risks related to polycystic ovary syndrome (PCOS). Hum Reprod 2004; 19:41*
2. *Witchel S, Oberfield S, Rosenfield R, Codner E,Bonny A, Ibáñez L, et al. The Diagnosis of Polycystic Ovarian Syndrome during Adolescence. Horm Res Pediatr. 2015;83 (6):376–389.*
3. *Rosenfield RL. The Diagnosis of Polycystic Ovary Syndrome in Adolescents. Pediatrics 2015, 136 (6), 1154-1165*