FUNDACIÓ
HOSPITAL DE NENS DE BARCELONA

ESPE 2019
19–21 September
Vienna, Austria
Variety and Variation in Paediatric Endocrinology

Characteristics of 311 children with early onset pubertal signs. Descriptive study

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Introduction

- The suspicion of **early onset pubertal**, especially in the female sex, is a frequent **reason of consultation**.
- The main **concern** is the possible **growth affectation**, short stature and the potential psychological alterations.
- **Precocious puberty** is defined as the onset of **pubertal signs before** the age of **8 in girls** and of **9 in boys**.
- Depot forms of **GnRH agonists are** now the **standard treatment** for progressive central precocious puberty
- **Treatment beyond this indication** and age range is often being **used without** having been **demonstrated** to be **effective** in increasing growth in girls older than 8 years and of 9 in boys.

Published in final edited form as:
Endocr Pract. 2015 June ; 21(6): 586–589. doi:10.4158/EP14412.OR.

BIRD'S-EYE VIEW OF GnRH ANALOG USE IN A PEDIATRIC ENDOCRINOLOGY REFERRAL CENTER

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REVIEW
DOI: 10.4274/jcrpe.2017.S004
J Clin Res Pediatr Endocrinol 2017;9(Suppl 2):33-48

A Critical Appraisal of the Effect of Gonadotropin-Releasing Hormon Analog Treatment on Adult Height of Girls with Central Precocious Puberty

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Objectives

- To **evaluate anthropometric**, **biochemical and imaging characteristics** (bone age, pelvic ultrasound and MRI) **in patients** who consulted the Endocrinology Service of the Hospital de Nens de Barcelona, referred by pediatricians on **suspicion of pubertal advancement**.
- To examine the data on the prescription of treatment with GNRH analogs in the different groups of patients referred.

Methodology

- **Retrospective descriptive** study based on review of medical records, with first consultation between 2010 and 2018. Search from keyword in diagnosis: puberty.
- Criteria were developed to assign patients to one of six diagnostic categories based on age, growth, and clinical findings, biochemical and imaging studies (bone age, pelvic ultrasound and MRI). The subjects were separated into 6 groups: involuted precocious breast development (IPBD), early non-progressive breast development (ENPBD), central precocious puberty (CPP), peripheral precocious puberty (PPP), advanced puberty (AP) and rapidly progressive puberty (RPP) . Statistical analysis by SPSS 23

Results

		Involuted precocious breast development n=28 (9%)	Early non progressive breast development n=22 (7,1%)	Central precocious puberty n=159 (51%)	Peripheral precocious puberty n=3 (1%)	Advanced puberty n=79 (25,4%)	Rapidly progressive puberty n=20 (6,4%)	P (IC95%) X2* (p)	Graphic
Gender (f/m)		28/0	22/0	152/7	3/0	73/6	19/1	6.366 0.272*	
Adopted (no/yes)		28/0	21/1	141/18	3/0	74/5	17/3	8.930 0.11*(**)	1
Age at 1º visit (years)	**Female (F)**	6.8 (6.3-7.4)	6.9 (6.3-7.6)	7.6 (7.5-7.7)	7.3 (4.9-8.5)	8.8 (8.6-8.9)	8.2 (8-8.9)	**0.000**	2
	Male (M)	--	--	8.5 (7.7-9)	--	9.8 (9-10.7)	11	**0.011**	
Height (cm)	**Female**	123 (119-127)	123 (119-127)	132 (130-133)	126 (103-147)	137 (134-138)	131 (127-135)	**0.000**	3
	Male	--	--	140 (125-155)	--	145 (137-153)	156	0.480	
BMI (kg/m2)	**Female**	17 (16-18)	16 (15-17)	18 (17-18)	17 (13-20)	18 (16-18)	18 (16-18)	**0.009**	
	Male	--	--	19(16-21)	--	20 (16-24)	19	0.700	
Target Height	**Female**	163 (162-164)	165 (163-168)	162 (160-162)	162 (157-165)	160 (157-165)	163 (159-166)	0.144	
	Male	--	--	178 (173-184)	--	174 (167-181)	173	0.399	
Bone Age		7.1 (6.5-7.7)	7.2 (6.6-7.8)	8.8 (8.5-9.1)	8.5 (6-14)	10 (9.6-10.5)	9.4 (8.6-10.3)	**0.000**	
Bone Age – chronological Age		0.1 (-0.3-0.5)	0.2 (-0.2-0.5)	0.8 (0.6-1)	1.5 (0.6-6)	1.1 (0.8-1.4)	1 (0,4-1,5)	**0.002**	4
Uterus ultrasound, length (cm)		3.4 (3.1-3.8)	3.3 (3-3.6)	4 (3.9-4.2)	3.5 (2.2-4.7)	3.9 (3.6-4.1)	4.9 (3.7-4)	**0.04**	5
Ovaries ultrasound, vol (cc max)		1.9 (1.3-2.4)	1.7 (1.1-2.4)	2.8 (2.5-3.1)	3 (2-7)	2.5 (2-2.8)	3 (1.9-4.3)	0.167	
LH at 3hs (U/L)		2.4 (1.7-3.1)	2.4 (1.4-3.4)	11.4 (9-13.7)	5.4	3.6 (2.5-4.8)	6.3 (1-12)	**0.000**	6
FSH at 3hs (U/L)		16 (9-23)	13 (9-17)	15 (14-17)	10.3	13 (11-15)	16 (12-20)	0.601	
LH/FSH at 3 hs		0.15 (0.11-0.18)	0.19 (0.11-0.26)	0.87 (0.61-1.14)	0.34	0.31 (0.13-0.5)	0.35 (0.14-0.56)	**0.038**	
17b Estradiol (pmol/L) at 24 hs		59 (17-100)	48 (23-74)	154 (127-182)	235 (112-716)	86 (53-120)	223 (0-458)	**0.000**	7
MRI (normal/"finding")		11/0	5/0	92/13	2/0	25/2	14/1	**44.147** **0.000***	8-9
Triptorelin treatment (no/yes)		28/0	22/0	49/110	2/1	79/0	1/19	**214.569** **0,000*(**)**	10

*** X^2 likelihood ratio. * table 2 * 2 adopted * normal-pathological etiology: 4,517 2 X (0.034); table 2 * 2 MRI * normal-pathological puberty: 38,727 (0.000); table 2 * 2 MRI gender * normal-pathological puberty: 9,666 (0.022).**

Graphic 1

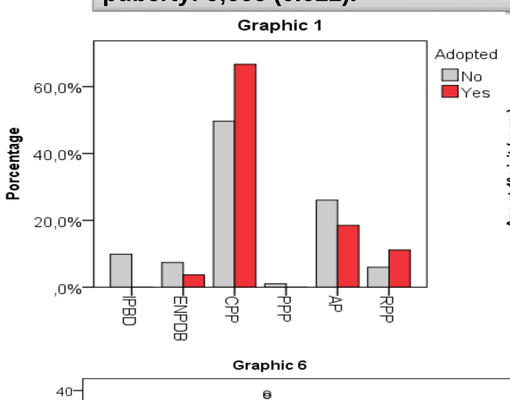
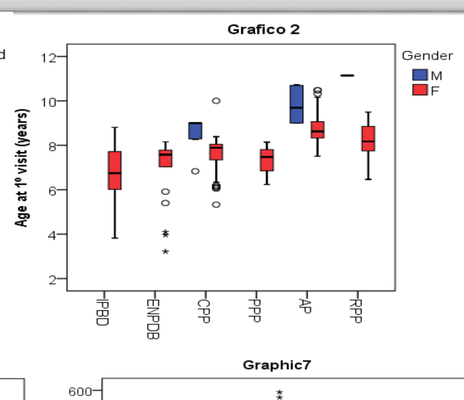
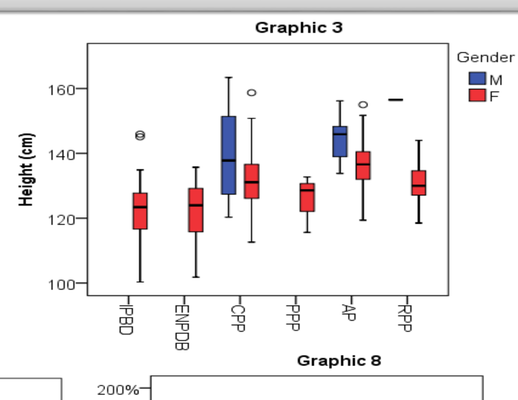


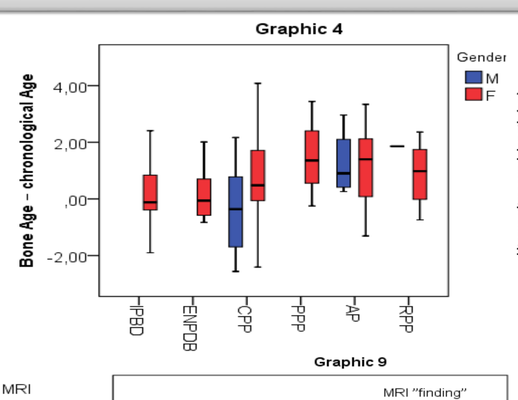
Grafico 2



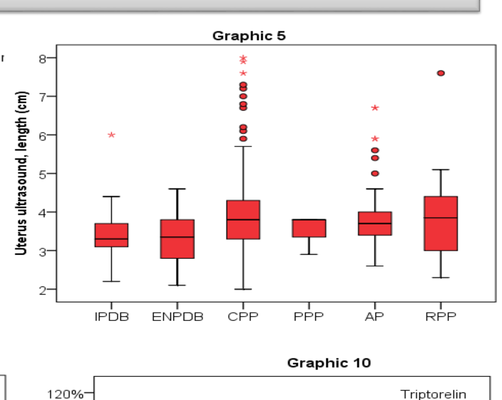
Graphic 3



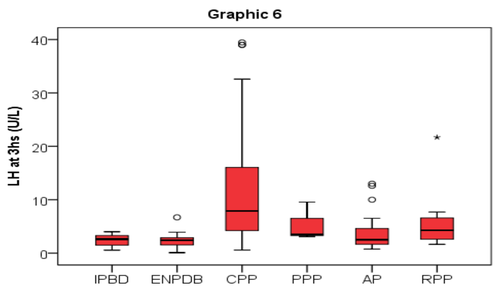
Graphic 4



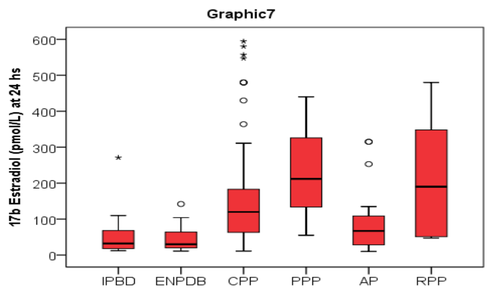
Graphic 5



Graphic 6



Graphic7



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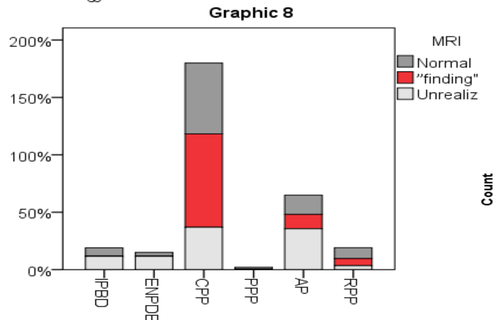
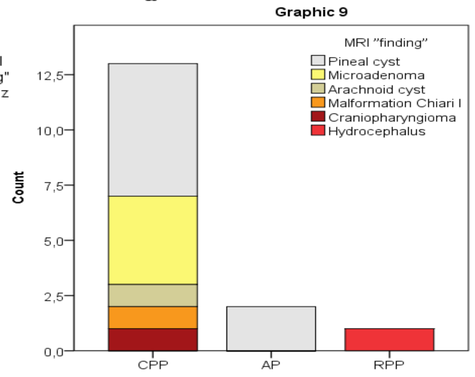
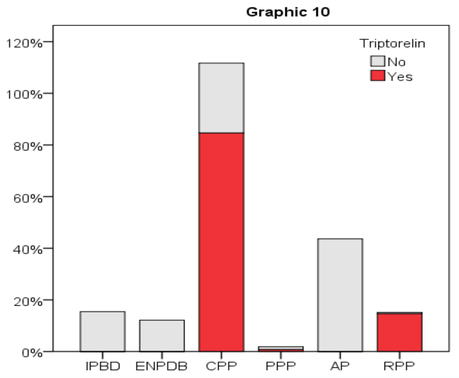


Graphic 9



Graphic 10



Conclusion

- We present the data of a population of children of both sexes with clinical manifestations suggestive of precocious/advanced puberty evaluated and followed between 2010 and 2018. **The results coincide with** those described in **previous studies**. A significant **percentage of patients were treated at age when the benefit in terms of height is uncertain**, corroborating the need to continue carrying out rigorous studies on the use of GnRH analogues in indications other than the diagnosis of CPP.

Poster Code: P1-282 (1064), 20/09/19 13:15. Gonads

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Sex differentiation, gonads and gynaecology or sex endocrinology

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Poster presented at: ESPE 2019 VIENNA

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