TIMING OF PRECOCIOUS PUBARCHE IN GIRLS: DOES A CONTEMPORARY SUBGROUP EXIST?

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BACKGROUND

Precocious pubarche (PP) is defined as the onset of pubic hair before 8 years of age in girls without other signs of puberty or virilization. PP is idiopathic (IPP) in most children. Premature adrenarche (PA) is a cause of PP and is together with excess androgen (especially of DHEAS) levels for age. In 1997, it was pointed out that pubertal characteristics were developing more frequently than before in girls younger than 8 years of age. In 2012, a phenomenon of early isolated gonadotropin-independent thelarche among contemporary girls was reported .

OBJECTIVE & HYPOTHESIS

In this study, we wanted to evaluate whether a contemporary isolated early pubarche exists besides early isolated thelarche. One way of looking into this is by investigating the age of pubarche in a group of girls with PP over time: If some girls had pubarche earlier than before, then, we would expect a subgroup of individuals with earlier pubarche to constitute a subgroup of individuals with PP.

METHODS

Girls with PP and not SGA who were referred between October 1978 and January 2013 (n:268) were included in this retrospective study. From these, 31 cases with precocious puberty and/or those given GnRH analogue treatment were excluded (n:268-31=237). Of these 237 girls, 7 had non classical congenital adrenal hyperplasia, 1 had ovarian granulosa cell tumour, 1 had adrenocortical carcinoma, 1 had simple virilizing CAH (n:237-10=227)(Table1). From these 227 girls, 173 girls had determined serum DHEAS levels (IPP+PA). Girls with PP and with increased serum levels of DHEAS for age were named as premature adrenarche (PA) cases and those without as idiopathic PP (IPP). Of the 227 girls, girls with known exact pubarche age (n:200) were grouped according to years of referral as indicated in Table 2.

RESULTS

Age of pubarche in 2006-2010 and 2011-2012 was significantly higher than that in 1996-2000 (Table 3, respectively p:0,007 and 0,005). Age of pubarche after 2006 was significantly higher than that of before 2006 (p:0,001). Although there was no significant difference between pubarche age of PA cases before and after 2006, there was a significant difference between pubarche age of IPP cases before and after 2006 (Table 4).

CONCLUSION

Although ages of pubarche of PP (IPP+PA) cases who were referred after 2006 were higher than those referred before 2006, spesifically in PA cases there was no such difference. On the other hand in individuals with IPP, ages of pubarche of cases referred after 2006 were found higher than those referred before 2006. Median age of pubarche of cases referred after 2006 was 7 and that of cases referred before 2006 was 6,5. This indicates that there is a higher proportion of 7-8 years old girls with IPP after 2006 than before 2006.These findings might be interpreted as suggestive for the presence of a contemporary subgroup of individuals (i.e those younger than 8 years) with earlier pubarche. There seems to be need for further investigation of this specific group of PP.

References:
•Herman-Giddens ME et al. Pediatrics. 1997 Apr;99(4):505-12.
•Sorensen K et al.. Horm Res Paediatr. 2012;77(3):137-45.
•Diamond FB, Bercu BB. Normative laboratory results. Ed(S): Pescovitz OH, Eugster EA. Pediatric Endocrinology Mechanisms, Manifestations, and Managment. Lippincott Williams & Wilkins 2004, 780-825

Table 1: Classification of P P cases (n:214)

n:31	Precocious puberty and/or those given GnRH analogue treatment
n:7	Non classical congenital adrenal hyperplasia
n:1	Ovarian granulosa cell tumour
n:1	Adrenocortical carcinoma
n:1	Simple virilizing CAH
n:50	Premature adrenarche
n:123	Idiopathic precocious pubarche

Table 2: Age of pubarche according to years of referral (n:200)

	n	Age of pubarche mean±SD	min-max	median
<1995	19	5,82±1,49	1,0-7,5	6,25
1996-2000	22	5,19±1,89	0,8-7,5	5,5
2001-2005	18	5,54±3,12	0,0-8,0	6,75
2006-2010	102	6,48±1,45	0,2-8,0	7,0
2011-2012	39	6,72±0,97	4,5-8,0	7,0

One-Way Analysis of Variance (ANOVA) p:0,001

Table 3: Comparison of age of pubarche according to years of referral

	p
<1995/1996-2000	0,737
<1995/2001-2005	0,986
<1995/2006-2010	0,469
<1995/>2011	0,280
1996-2000/2001-2005	0,962
1996-2000/2006-2010	0,007
1996-2000/>2011	0,005
2001-2005/2006-2010	0,157
2001-2005/>2011	0,086
2006-2010/>2011	0,939

Tukey HSD Test

Table 4: Comparison of cases by referral year (before and after 2006) in Premature adrenarche and Idiopathic precocious pubarche cases.

	<2006		≥2006		
PA (n: 50)	Mean	Median	Mean	Median	p
Height SDS	0,43±1	0,69 (-0,32-1,3)	0,97±1,07	0,93 (0,12-1,78)	0,110
BMI SDS	0,42±0,92	0,49 (-0,15-0,83)	0,71±1,07	0,81 (-0,05-1,52)	0,378
Age of pubarche	5,99±0,93	6,5 (5-6,93)	6,22±0,76	6,5 (5,5-6,88)	0,373
Basal DHEAS	132,25±60,05	115,25 (98,35-158,28)	128,64±55,28	103 (90,85-156,4)	0,840
IPP (n: 123)					
Height SDS	0,53±0,76	0,73 (-0,36-1,19)	0,83±1,18	0,77 (-0,05-1,78)	0,228
BMI SDS	0,27±0,84	0,2 (-0,28-0,77)	0,66±1,01	0,7 (0,01-1,35)	0,075
Age of pubarche	5,5±2,45	6,5 (4,38-7,5)	6,63±1,51	7 (6-7,5)	0,004
Basal DHEAS	94,36±70,38	82,65 (51,14-108,75)	117,18±52,45	109 (77,09-150)	0,070