Trends in the Incidence of Central Precocious Puberty and Normal Variant Puberty Among Children in Denmark, 1998 to 2017

Bräuner EV, Busch AS, Eckert-Lind C, et al. JAMA Netw Open. 2020 Oct 1;3(10):e2015665

Background: There has been a worldwide secular trend toward earlier onset of puberty in girls and, to a lesser extent, in boys. This trend has been paralleled by an increase in the number of girls referred for evaluation of suspected precocious puberty (PP). To date, very few epidemiological studies have reported the national incidence of Central PP, premature thelarche and premature adrenarche.

Objective: To provide valid epidemiological data on the 20-year secular trend in the incidence rates of Central Precocious Puberty (CPP) and normal variant puberty (i.e., Premature Thelarche [PT] and Premature Adrenarche [PA]).

Design: Population-based, 20-year cohort study.

Setting: Incidence rates of first-time diagnosis of CPP, PT and PA were estimated using data from the Danish National Patient registry data from 1998 to 2017.

ACADEMIC P.E.A.R.L.S

Pediatric Evidence And Research Learning Snippet

Have the annual incidence rates of Central Precocious Puberty and normal variant puberty increased during the last 20 years?

Results: The 20-year mean annual incidence rates of CPP, PT, PA per 10 000 girls with Danish origin were 9.2 (95% CI, 8.0 to 10.3), 1.1 (95% CI, 0.7 to 1.5), and 1.3 (95% CI, 0.9 to 1.7), respectively and 0.9 (95% CI, 0.6 to 1.2) and 0.2 (95% CI, 0.1 to 0.4) for CPP and PA, respectively, in boys .

•There was a 6-fold increase in incidence for girls with Danish origin (from 2.6 per 10 000 to 14.6 per 10 000) and a 15-fold increase for boys with Danish origin (from 0.1 per 10 000 to 2.1 per 10 000), although the incidence of CPP in 2017 was nine fold higher in girls than boys.

•The rate of premature thelarche rose 33-fold, from 0.07 to 2.24 per 10,000 girls, and the rate of premature adrenarche rose 18-fold from 0.16 to 2.96 per 10,000 girls.

•The incidence rate for CPP per 10 000 girls in the first-generation and second-generation groups were 13.7 (95% CI, 9.3 to 18.2) and 14.2 (95% CI, 4.6 to 23.9), respectively; the incidence rate for PA per 10 000 girls in the first generation and second-generation groups were 2.0 (95% CI, 0.3 to 3.6) and 1.5 (95% CI, −1.6 to 4.7), respectively.

Conclusion: This cohort study of 8596 children in Denmark who were diagnosed with Central Precocious Puberty (CPP), premature thelarche, or premature adrenarche between 1998 and 2017 found that **the annual incidence of CPP and normal variant puberty has increased substantially in Denmark during the last 20 years.**

Key Message: The findings of this study have implications for short-term and long-term health and potentially for the international classification of the reference age at puberty.

EXPERT COMMENT

"The decline in age at thelarche in the general population has been paralleled by an increase in the number of girls referred for evaluation of precocious puberty (PP). The upward trends in the incidence of CPP and its benign variants reported in this study is alarming. But the mechanisms underlying this increasing trend are uncertain. Overweight and obesity have been proposed as possible drivers for this renewed trends, as well as exposure to endocrine-disrupting chemicals. However, there is no simple and single explanation to this phenomenon."

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With warm regards,

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Reference

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