THE EFFECT OF OBESITY TO SECONDARY SEXUAL MATURITY AGE IN GIRLS

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Abstract

Background: Worldwide incidence of obesity in children is increasing. Obesity may have many health effects including advancement of sexual maturity.

Objective: The aim of the study is to assess the timing of secondary sexual maturation in obese vs. non-obese girls.

Methods: The study invited 105 obese and 105 non-obese 7 to 8 years old girls who had not entered puberty. Secondary sexual characteristics, i.e. breast and pubic hair growth were assessed at baseline and every 4 months for two years. Starting of puberty was defined as Tanner stage for secondary sexual maturation of ≥ B2 and/ or ≥ P2. Survival analyses were used to estimate time to puberty in both groups. Cox regressions were used to analyze factors that might affect secondary sexual maturation.

Results: Mean (95%CI) onset of breast budding (B2) was 7.8 years (7,7 to 7,8) in obese girls vs. 8.6 years (8,5 to 8,6) in non-obese girls, $p<0.001$. Mean (95%CI) onset of pubarche (P2) was 8.7 years (8,6 to 8,8) in obese girls vs. 9.0 years (8,9 to 9,0) in non-obese girls, $p<0.001$. Hazard Ratio (95%CI) of obese girls to experience an earlier secondary sexual maturation at maturity level B2, B3 and P2 were 1.34 (1.19 to 1.52), 6.91 (3.90 to 12.24) and 3.78 (2.42 to 5.89) respectively.

Conclusion: Obesity is associated with earlier onset of puberty in girls. Obese girls entered puberty around 3 to 9 months earlier than their non-obese peers.

Keywords: obesity, girls, secondary sexual maturity, puberty