

Psychostimulants: Influence on Body Mass Index and Height in a Pediatric Population with Attention-Deficit/Hyperactivity Disorder?

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Abstract

Objectives:

Attention-deficit/hyperactivity disorder (ADHD) is often treated with psychostimulants. Psychostimulants' adverse effects on body mass index standard deviation score (BMI-sds) and height in children/adolescents with ADHD have been reported. However, literature is inconsistent, and it is unclear whether the observed effects are dosage- and/or BMI-dependent. Therefore, the aim of this retrospective observational study is to evaluate the influence of psychostimulants on BMI-sds and height-sds in a pediatric cohort with ADHD from an outpatient clinic, and to study the correlation between psychostimulant dosage and BMI-sds and height-sds change.

Method:

Participants ≤ 18 years of age diagnosed with ADHD who started with psychostimulants (methylphenidate) were studied. Changes in BMI-sds and height-sds over an 18-month treatment period were assessed in subgroups according to baseline BMI-sds, gender, and age. Furthermore, correlations between BMI-sds, height-sds, and psychostimulant dose were studied.

Results:

In total, 298 participants [median age 9.8 years, height-sds 0.0, BMI-sds 0.5, psychostimulant dosage 0.5 (0.2–1.4) mg/kg/day] were analyzed, with an underweight, overweight, and obesity prevalence of 5%, 21%, and 7%, respectively. After 18 months of treatment a significant decline in BMI-sds (-0.4) and height-sds (-0.2) was observed. These effects were consistent in all subgroups except for no change in BMI-sds in the underweight subgroup and no change in height-sds in the overweight subgroup. Medication dosage was weakly correlated with change in BMI-sds [$r = -0.3$ (-0.9 to $+0.5$); $p < 0.01$] and height-sds [$r = -0.2$ (-0.4 to -0.1); $p = 0.01$].

Conclusion:

After 18 months of psychostimulant treatment, a significant decline in BMI-sds and height-sds was observed. However, the correlation with psychostimulant dosage was weak, and the decline was not observed in all subgroups. Therefore, further studies on the etiology of BMI-change are warranted, particularly with regard to the ADHD symptoms.