
POSTER ABSTRACT

Uric acid is elevated in children with obesity and decreased after a lifestyle-induced weight loss intervention.

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Introduction: Childhood obesity may be associated with continuous obesity into adulthood and development of obesity-related comorbidities. In adult, studies have demonstrated an association between circulating levels of uric acid (UA), body mass index (BMI), and the development of type 2 diabetes and the metabolic syndrome. The aim of the current study was to investigate the relationship between UA in children and adolescents with obesity, involved in a municipality-based lifestyle intervention.

Methods: One hundred and seventy-one children (age 4-18), with a body mass index standard deviation score (BMI-SDS) of +2 or higher were included in a multifactorial lifestyle intervention study. The intervention was a collaboration between the children, parents, community healthcare workers and the regional hospital. The children who participated, were annually invited to the hospital for anthropometrics, blood samples and DEXA-scans for up to 3 years. In between, the children were seen up 8 times per year by a community healthcare worker. Eighty-nine children were included for follow-up analysis.

Results: After a follow-up of 20.7 ± 9.4 months a reduction in BMI-SDS of -0.34 ± 0.53 ($p < 0.01$) was observed. In parallel, UA was found to be positively associated with changes in BMI-SDS. UA levels decreased in the 76 children who lost weight during the intervention, conversely, UA increased in the 23 children who gained weight during the intervention ($p < 0.01$ between groups).

Conclusion: Interestingly, UA was found to correlate with measures of childhood obesity, and for the first time this study demonstrates a positive relationship between weight reduction in children with obesity and changes in UA.

Implications for applicability: This study implies that UA may be used as a marker when assessing health conditions (i.e. BMI-SDS) in children with obesity.