The Impact of Vitamin D Supplementation on Attention-Deficit Hyperactivity Disorder in Children.

Elshorbagy HH, Barseem NF, Abdelghani WE, Suliman HAI, Al-Shokary AH, Abdulsamea SE, Elsadek AE, Abdel Maksoud YH, Nour El Din DMAE.


Abstract

BACKGROUND:
The role of nutrients and dietary factors in attention-deficit hyperactivity disorder (ADHD) remains unclear.

OBJECTIVES:
The primary objective was to evaluate the serum vitamin D level in children with a diagnosis of ADHD. The secondary objective was to detect the effect of vitamin D supplementation on cognitive function in those with vitamin D deficiency.

METHODS:
A total of 50 children with ADHD and 40 healthy controls were included in the study. We measured the serum level of vitamin D. Patients with vitamin D deficiency were subdivided into 2 groups: one with vitamin D supplementation and the other without vitamin D supplementation. Further assessment and follow-up of children with ADHD was done. The Wisconsin Card Sorting Test, Conners' Parent Rating Scale, and Wechsler Intelligence Scale for Children were performed at baseline and follow-up in all cohorts with an ADHD diagnosis.

RESULTS:
The diagnosis of vitamin D deficiency was significantly greater in children with ADHD compared with the control group (P < 0.05). Children with ADHD had significantly (P = 0.0009) lower values of serum vitamin D (17.23 ± 8.98) than the control group (31.47 ± 14.42). The group receiving vitamin D supplementation demonstrated improvement in cognitive function in the conceptual level, inattention, opposition, hyperactivity, and impulsivity domains.

CONCLUSION:
Vitamin D supplementation in children with ADHD may improve cognitive function.