

Abstract

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Natural polyphenols modify trace element status and improve clinical symptoms of attention-deficit hyperactivity disorder.

Viktorinova A, Trebaticka J, Paduchova Z, Ursinyova M, Uhnakova I, Masanova V, Durackova Z.

Institute of Medical Chemistry, Biochemistry and Clinical Biochemistry, Faculty of Medicine, Comenius University, Bratislava, Slovak Republic.

BACKGROUND: Metabolism of some trace elements is altered in children with attention-deficit hyperactivity disorder (ADHD) and natural polyphenols may be beneficial in therapy of this disease.

OBJECTIVE: Aim of our randomized, double-blind and placebo-controlled study was to investigate the impact of polyphenolic extract, Pycnogenol((R)) (PYC) on plasma levels of Cu, Zn, Se, Fe, ferritin and transferrin in ADHD children.

METHODS: Sixty-five ADHD children (aged 6-14 years) were supplemented with 1mg/kg/day PYC or placebo over a period of 4 weeks. Control group consisted of 56 healthy children (aged 6-14 years).

RESULTS: We have found lower Zn level ($p < 0.05$), higher Cu/Zn ratio ($p < 0.05$) and higher Cu level in ADHD children compared with control group. Se, Fe, ferritin and transferrin levels were observed to be similar to healthy children. PYC administration significantly decreased Cu levels ($p < 0.01$), Cu/Zn ratio ($p < 0.05$) and Fe levels ($p < 0.05$). No significant effect of PYC on the levels of Zn, Se, ferritin and transferrin was found. PYC modified trace element status, normalized total antioxidant status through a decrease of Cu, Fe levels and Cu/Zn ratio and improved clinical symptoms of ADHD.

CONCLUSIONS: PYC might be beneficial supplement in the treatment of ADHD.

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