

# **l-Carnosine as Adjunctive Therapy in Children and Adolescents with Attention-Deficit/Hyperactivity Disorder: A Randomized, Double-Blind, Placebo-Controlled Clinical Trial**

Ghajar Alireza, Aghajan-Nashtaei Farinaz, Afarideh Mohsen, Mohammadi Mohammad-Reza, and Akhondzadeh Shahin.

Journal of Child and Adolescent Psychopharmacology. 2018

DOI: <https://doi.org/10.1089/cap.2017.0157>

## **ABSTRACT**

### **Objectives:**

This study aimed to investigate the efficacy and tolerability of l-carnosine as an add-on to methylphenidate in management of children with attention-deficit/hyperactivity disorder (ADHD).

### **Methods:**

This was an 8-week, randomized, double-blind placebo-controlled study. Fifty-six drug-free children and adolescents aged 6–17 years old with a diagnosis of ADHD entered the study. The patients were randomly assigned to l-carnosine (800 mg/d in two divided doses) or placebo plus methylphenidate (0.5–1.5 mg/kg/d) for 8 weeks. Children were assessed using the Teacher and Parent ADHD Rating Scale-IV (ADHD-RS-IV) at baseline and at weeks 4 and 8 postbaseline.

### **Results:**

Fifty patients completed the study, and all had two postbaseline measurements. Using the general linear model repeated measures, significant effect was observed for time  $\times$  treatment interaction on total and inattention subscales of the Parent ADHD-RS (Greenhouse-Geisser corrected:  $F = 3.783$ ,  $df = 1.444$ ,  $p = 0.041$  and  $F = 4.032$ ,  $df = 1.600$ ,  $p = 0.030$ ). Improvements in the Teacher ADHD-RS were not significantly different between the two groups in total (Greenhouse-Geisser corrected:  $F = 0.200$ ,  $df = 1.218$ ,  $p = 0.705$ ), as well as inattention and hyperactivity subscale scores ( $p = 0.956$  and  $0.281$ , respectively). The frequency of side effects was not significantly different between the two treatment arms.

### **Conclusions:**

l-carnosine, as a supplementary medication, might be beneficial in treatment of children with ADHD. However, further investigations and different doses of l-carnosine are required to replicate these findings in children with ADHD.