Efficacy of an omega-3/6 combination on specific learning abilities in children with mild to moderate inattentive ADHD - preliminary results

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Background

Attention Deficit Hyperactivity Disorder (ADHD) is a common child psychiatric disorder with a significant global functional impairment. Learning disorders represent a frequent comorbid condition in ADHD patients and recent research has investigated the effects of non pharmacological treatments for ADHD on learning abilities [1]. During the last two decades, there has been a growing interest in the role of essential fatty acids (EFA), based on the hypotheses that Omega-3/6 fatty acids seem to be deficient in ADHD individuals [2] and moderately effective in reducing inattention [3] and improving learning abilities [4].

Objectives

Within a multicentric study the efficacy of a specific Omega-3/6 combination supplement was evaluated in a population of Italian children with predominantly Inattentive Type of ADHD (ADHD-I). The primary efficacy measure was the ADHD Rating Scale (ADHD-RS-IV) score for clinical symptoms. Among the secondary objectives we evaluated the efficacy of Omega3/6 supplement on learning abilities.

Methods

The study was a randomised, double-blind, placebo-controlled efficacy trial of Omega-3/6 combination in mild/moderate ADHD-I children (6-12 y), conducted in 4 Italian sites (Cagliari, Roma, Pisa and Messina), and including a screening and baseline assessment, a double blind evaluation phase of Omega-3/6 supplement vs placebo (6 months) and a following open label treatment phase of further 6 months during which all subjects were on the Omega3/6 supplement. Learning abilities were assessed at baseline and at 6 and 12 months, by the Sartori reading and writing tests (Battery for the Evaluation of Dyslexia and Written Expression Disorder-lists 4,5,6,10,11 and 12) and the Cornoldi Reading Tests MT, using the number of errors as measure of accuracy and syllables/sec or total time as measure of reading speed.

Results

160 drug naïve ADHD Italian children (118 M; 42 F) were enrolled. Scores were analysed at baseline visit and after 6 and 12 months. Statistical significance was calculated by ANOVA for repeated measures, Friedman’s and Wilcoxon’s Test for non parametric data. In the total sample, 91 have a diagnosis of Specific Learning Disorder (SLD): in the PL group 47 have a SLD (35 with impairment in reading, 44 with impairment in written expression); in the OM group 44 have a SLD (32 with impairment in reading, 40 with impairment in written expression). The prevalence of SLD was not significantly different in the PL and OM groups. No significant effect was found in improving learning abilities within and between the two groups.

A significant improvement was found at 6 and 12 months visits, in both groups, for ADHD-RS total score, ADHD-RS-Inattentive, and functioning, with no difference comparing the two groups. Further analysis are in due course.

Discussion

Preliminary results suggest no significant effect of Omega-3/6 supplementation on learning abilities but only a mild improvement in global functioning and in clinical symptoms, especially inattention, was found after at least 6 months without significant differences between Omega-3/6 dietary supplementation and placebo.