Behavioral and cognitive effects of docosahexaenoic acid in drug-naïve children with attention-deficit/hyperactivity disorder: a randomized, placebo-controlled clinical trial

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Abstract
This study aimed to investigate the efficacy of docosahexaenoic acid (DHA) dietary supplementation on behavior and cognition in school-aged, drug-naïve children with attention-deficit/hyperactivity disorder (ADHD). A total of 50 participants with ADHD aged 7 to 14 were enrolled in a 6-month randomized, placebo-controlled clinical trial and received either DHA or placebo. The primary outcome measure was the change in the ADHD rating scale IV Parent Version-Investigator (ADHD-RS-IV) after 4 and 6 months. Secondary outcome measures included Conners Parent Rating Scale-revised, other behavioral rating scales including quality of life and global functioning, and computerized cognitive tasks. Baseline assessment also addressed the blood fatty acids profile. No superiority of DHA supplement to placebo was observed on ADHD-RS-IV, the a priori primary outcome. DHA supplementation showed a significant, nonetheless quite small, effect on children's psychosocial functioning, emotional problems, and focused attention. Neither major nor minor adverse events were reported throughout the trial. This study shows that 6-month DHA supplementation has no beneficial effect on the symptoms of ADHD in school-aged, drug-naïve children with an established diagnosis of ADHD. Nevertheless, the 6 months treatment with supplemental DHA appears to have small positive effects on other behavioral and cognitive difficulties, which, in light of the absence of side-effects, could be reasonably followed up in future intervention studies.