To the Editor:

R
ecent work has demonstrated that individuals with attention-deficit/hyperactivity disorder (ADHD) are at elevated risk for deficits in emotional self-regulation (DESR) (Surman et al. 2010). DESR traits include low frustration tolerance, impatience, quickness to anger, moodiness, and being easily (over)excited to emotional reactions (Barkley 2010). Research also suggests that changes in DESR may not routinely follow changes in ADHD symptoms during treatment trials (Shaw et al. 2014). Despite the link between ADHD and DESR, little has been completed in terms of targeted treatment trials of individuals with ADHD who manifest DESR.

Although limited, the literature suggests that omega-3 fatty acids (FAs) supplementation may have a modest impact in the management of severe mood dysregulation (Osher et al. 2005; Wozniak et al. 2007). To this end, we examined the effectiveness and tolerability of adjunct omega-3 FAs for the treatment of DESR and ADHD symptoms in children with ADHD who were treated with stimulant or nonstimulant medications and who continued to manifest clinically significant DESR.

This was a 12-week open-label pilot study of omega-3 FAs in children 6 to 17 years with ADHD who were receiving stimulants and/or nonstimulants and continued to manifest prominent DESR. We utilized a target dose of 975 mg EPA. The fish oils were ω-3FA ProOmega Junior (by Nordic Naturals) with each batch purity confirmed by a certificate of analysis. Individuals with a T score ≥60 on the Emotional Control subscale of the Behavior Rating Inventory of Executive Function-Parent version (BRIEF-P) (Gioia et al. 2000) or T score ≥180 on the 41 questions that make up the Anxious/Depressed, Attention Problems, and Aggressive Behavior subscales of the Child Behavior Checklist (Achenbach and Rescorla 2001) were defined as sufficiently moody for study inclusion.

All analyses were intention to treat with the last observation carried forward. Response was defined as categorization on the Clinical Global Impressions (CGI)-Improvement scale of “much” or “very much improved” (i.e., CGI-I ≤2). Paired t-tests compared pre- and post-treatment scores. All tests were two-tailed, and significance was determined at z = 0.05 (p-values between 0.05 and 0.1 were reported as trends).

Our pilot sample included seven subjects who completed the study and three subjects who finished study measures through week 6 (total, n = 10). Of the three who dropped the study, reasons included scheduling difficulties, lack of efficacy, and precipitated anxiety unrelated to medication. The mean age was 10.6 ± 2.6 years, 60% were male, and all were Caucasian. The sample was highly comorbid with autism spectrum and anxiety symptomatology.

In general, there were improvements in DESR, but not ADHD, between baseline and endpoint. Mean CGI-DESR severity scores were significantly different from baseline to study endpoint (4.6 ± 0.7 vs. 3.0 ± 0.9; p < 0.0001). Similarly, by CGI-improvement for DESR, 70% (n = 7) of subjects responded favorably to treatment. We did not find a significant change in the BRIEF-P emotional control subscale (65.3 ± 10.2 vs. 58.4 ± 13.0, p = 0.22). Only a minority of subjects were labeled as “responders” by CGI-I at endpoint for ADHD (10%, n = 1), major depression (30%, n = 3), or anxiety (30%, n = 3). There were nonsignificant improvements in both dimensional (e.g., ADHD RS) and categorical (e.g., CGI-I/S) proxies of ADHD response.

Comparing baseline to endpoint T scores for the major indexes of the BRIEF-P, we found trends to improvement on the Global Executive Composite (73.8 ± 9.4 vs. 65.4 ± 15.2; p = 0.07), Behavioral Regulation Index (72.8 ± 10.9 vs. 64.5 ± 15.5; p = 0.08), and Metacognition Index (72.0 ± 8.4 vs. 64.1 ± 14.5; p = 0.07), suggestive of improvements in overall executive functioning. The majority of DESR responders were positively impacted by the third week of the trial.

Our findings derived from omega-3 FA supplementation to ADHD medication in children with ADHD and DESR showed relatively rapid improvements in mood (DESR), but few improvements in ADHD symptoms. The omega-3 FAs were well tolerated. These pilot data with a nutraceutical provide encouraging...
support for a larger controlled trial of omega-3 FAs as adjunct therapy for residual DESR in treated ADHD youth.

Acknowledgments

This work was supported by philanthropic funding from the Demarest Lloyd, Jr. Foundation. The funding source had no role in the design and conduct of the study; collection, management, analysis, or interpretation of the data; or preparation, review, or approval of the article.

Disclosures

T.E.W.: T.E.W. receives or has received grant support from the following sources: NIH (NIDA). He is or has been a consultant for Alcobra, Neurovance/Otsuka, and Ironshore. T.E.W. receives grant funding from NIH (NIDA) and has published a book: Straight Talk About Psychiatric Medications for Kids (Guilford Press); and co/edited books ADHD in Adults and Children (Cambridge University Press), Massachusetts General Hospital Comprehensive Clinical Psychiatry (Elsevier), and Massachusetts General Hospital Psychopharmacology and Neurotherapeutics (Elsevier). T.E.W. is co/owner of a copyrighted diagnostic questionnaire (Before School Functioning Questionnaire). He also has a licensing agreement with Ironshore (BSFQ Questionnaire). T.E.W. is Chief, Division of Child and Adolescent Psychiatry and (Co) Director of the Center for Addiction Medicine at Massachusetts General Hospital. He serves as a clinical consultant to the U.S. National Football League (ERM Associates), U.S. Minor/Major League Baseball; Phoenix House and Bay Cove Human Services. A.M.Y. received grant support from the American Academy of Child and Adolescent Psychiatry Pilot Research Award for Junior Faculty supported by Lilly USA, LLC in 2012. She received grant support from the Massachusetts General Hospital Louis V. Gerstner III Research Scholar Award from 2014 to 2016. A.M.Y. is currently receiving funding through the American Academy of Child and Adolescent Psychiatry Physician Scientist Program in Substance Abuse K12DA000357-17. She is a consultant to Phoenix House (clinical service). In 2016, A.S. received honoraria for tuition-funded CME courses and received research support from Sunovion. J.B. is currently receiving research support from the following sources: The Department of Defense, Food & Drug Administration, Lundbeck, Merck, Neurocentra, Inc., Pamlab, Pfizer, Shire Pharmaceuticals, Inc., SPRITES, Sunovion, and NIH. J.B.’s program has received departmental royalties from a copyrighted rating scale used for ADHD diagnoses, paid by Ingenix, Prophase, Shire, Bracket Global, Sunovion, and Theravance; these royalties were paid to the Department of Psychiatry at MGH. In 2016, J.B. received honoraria from the MGH Psychiatry Academy for tuition-funded CME courses, and from Avekshan, Alcobra, and AACAP. He has a U.S. Patent Application pending (Provisional Number #61/233,686) through MGH corporate licensing, on a method to prevent stimulant abuse. In 2015, J.B. received honoraria from the MGH Psychiatry Academy for tuition-funded CME courses, and from Avekshan. He received research support from Ironshore, Magteceuts, Inc., and Vaya Pharma/Enzymotec. In 2014, J.B. received honoraria from the MGH Psychiatry Academy for tuition-funded CME courses. He received research support from AACAP, Alcobra, Forest Research Institute, and Shire Pharmaceuticals, Inc. In 2013, J.B. received an honorarium from the MGH Psychiatry Academy for a tuition-funded CME course. He received research support from APSARD, ElMindA, McNeil, and Shire. In previous years, J.B. received research support, consultation fees, or speaker’s fees for/from the following additional sources: Abbott, Alza, AstraZeneca, Boston University, Bristol Myers Squibb, Cambridge University Press, Celltech, Cephalon, The Children’s Hospital of Southwest Florida/Lee Memorial Health System, Cipher Pharmaceuticals, Inc., Eli Lilly and Co., Esai, Fundacion Areces (Spain), Forest, Fundación Dr. Manuel Camelo A.C., Glaxo, Gliatech, Hastings Center, Janssen, Juste Pharmaceutical Spain, McNeil, Medice Pharmaceuticals (Germany), Merck, MGH Psychiatry Academy, MMC Pediatric, NARSAD, NIDA, New River, NICHD, NIMH, Novartis, Noven, Neurosearch, Organon, Otsuka, Pfizer, Pharmacia, Phase V Communications, Physicians Academy, The Prechter Foundation, Quantia Communications, Reed Exhibitions, Shionogi Pharma Inc, Shire, the Spanish Child Psychiatry Association, The Stanley Foundation, UCB Pharma, Inc., Veritas, and Wyeth. N.W.C., C.Z., and M.U. have no conflict of interest relevant to this article to disclose.

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