Effect of Atomoxetine Treatment on Reading and Phonological Skills in Children with Dyslexia or Attention-Deficit/Hyperactivity Disorder and Comorbid Dyslexia in a Randomized, Placebo-Controlled Trial

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ABSTRACT

Objectives:
Evaluated the effects of atomoxetine on the reading abilities of children with dyslexia only or attention-deficit/hyperactivity disorder (ADHD) and comorbid dyslexia.

Methods:
Children aged 10–16 years (N = 209) met Diagnostic and Statistical Manual of Mental Disorders, 4th Edition, Text Revision (DSM-IV-TR) criteria for dyslexia only (n = 58), ADHD and comorbid dyslexia (n = 124), or ADHD only (n = 27) and were of normal intelligence. Patients were treated with atomoxetine (1.0–1.4 mg/kg/day) or placebo in a 16-week, randomized, placebo-controlled, double-blind trial. The dyslexia-only and ADHD and comorbid dyslexia groups were randomized 1:1; the ADHD-only group received atomoxetine in a blinded manner. Reading abilities were measured with the Woodcock Johnson III (WJIII), Comprehensive Test of Phonological Processing (CTOPP), Gray Oral Reading Tests-4, and Test of Word Reading Efficiency.

Results:
Atomoxetine-treated dyslexia-only patients compared with placebo patients had significantly greater improvement (p < 0.02) with moderate to approaching high effect sizes (ES) on WJIII Word Attack (ES = 0.72), Basic Reading Skills (ES = 0.48), and Reading Vocabulary (ES = 0.73). In the atomoxetine-treated ADHD and comorbid dyslexia group, improvement on the CTOPP Elision measure (ES = 0.50) was significantly greater compared with placebo (p < 0.02). Total, inattentive, and hyperactive/impulsive ADHD symptom reductions were significant in the atomoxetine-treated ADHD and comorbid dyslexia group compared with placebo, and from baseline in the ADHD-only group (p ≤ 0.02). ADHD symptom improvements in the ADHD and comorbid dyslexia group were not correlated with improvements in reading.

Conclusions:
Atomoxetine treatment improved reading scores in patients with dyslexia only and ADHD and comorbid dyslexia. Improvements for patients with dyslexia only were in critical components of reading, including decoding and reading vocabulary. For patients with ADHD and comorbid dyslexia, improvements in reading scores were distinct from improvement in ADHD inattention symptoms alone. These data represent the first report of improvements in reading measures following pharmacotherapy treatment in patients with dyslexia only evaluated in a randomized, double-blind trial.