


Abstract

Introduction.
Neurofeedback (NF) is an adjuvant or alternative therapy for children with Attention Deficit Hyperactivity Disorder (ADHD). This study intended to compare the efficacy of two different NF protocols on clinical and cognitive symptoms of ADHD.

Materials and Methods.
In this clinical trial, sixty children with ADHD aged 7 to 10 years old were randomly grouped to receive two different NF treatments (theta suppression/beta enhancement protocol and theta suppression/alpha enhancement protocol). Clinical and cognitive assessments were conducted prior to and following the treatment and also after an eight-week follow-up.

Results.
Both protocols alleviated the symptoms of ADHD in general (p < 0.001), hyperactivity (p < 0.001), inattention (p < 0.001), and omission errors (p < 0.001); however, they did not affect the oppositional and impulsive scales nor commission errors. These effects were maintained after an eight-week intervention-free period. The only significant difference between the two NF protocols was that high-frequency alpha enhancement protocol performed better in suppressing omission errors (p < 0.001).

Conclusion.
The two NF protocols with theta suppression/beta enhancement and theta suppression/alpha enhancement have a considerable and comparable effect on clinical symptoms of ADHD. Alpha enhancement protocol was more effective in suppressing omission errors.