

Meta-analysis of the Effect of Modafinil in Children and Adolescents with Attention Deficit and Hyperactive Disorder

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Introduction: Attention-deficit/hyperactivity disorder (ADHD) affects 5%-10% of school-aged children. Treatment includes medical use of stimulants. However, treatment of non-stimulant drugs should be considered as an alternative. The efficacy of Modafinil, a centrally acting agent that is structurally and pharmacologically different from stimulants in the treatment of ADHD was studied and abrupt discontinuation was not associated with symptoms of withdrawal or with rebound of symptoms of ADHD.

Objective: To assess the evidence from randomized controlled trials the effect of Modafinil compared with placebo in the treatment of patients with Attention-deficit/hyperactivity disorder (ADHD) .

Method: Meta-analysis of 3 randomized trials identified through Medline/Pubmed and Cochrane Library (as of September 2012). Summary of the outcome variables was computed using difference of two means of the ADHD-R Scale-IV and their corresponding standard error of the means under random effects models. Statistical analysis was done using Revman version 5.

Results: A total number of 932 participants with ADHD were represented. All studies included were randomized and placebo controlled. The main outcome measure is Change in Home and School Version of ADHD-R Scale - IV scores from baseline. Results showed mean difference between Modafinil and placebo using the Home Version is -10.13 (95% CI -14.11, -6.14). The overall effect was statistically significant ($z=4.98$; $p<0.00001$) in favor of Modafinil. The mean difference between Modafinil and placebo using the School Version is -9.27 (95% CI -12.62, -5.92). The overall effect was statistically significant ($z=5.42$; $p<0.00001$) in favor of Modafinil.

Conclusion: Modafinil is effective in improving symptoms in ADHD.