[Neurotrophic factors and their importance in attention deficit hyperactivity disorder.]
[Article in Spanish]

Ramos-Quiroga JA, Sanchez-Mora C, Corominas M, Martinez I, Barrau V, Prats L, Casas M, Ribases M.


Abstract
The existing literature that reports findings linked with the involvement of neurotrophic factors in attention deficit hyperactivity disorder (ADHD) is reviewed. Neurotrophins, a family of neurotrophic factors, are a kind of proteins that are specific to the nervous system and play an essential role in neuron survival, differentiation and proliferation during the development of the central and peripheral nervous system. These molecules stimulate axonal growth and exert an influence on the connections with the target tissue in order to establish the synaptic connections. The study of neurotrophins in ADHD, a neurodevelopmental disorder, is of interest mainly due to the functions that these proteins perform in the central nervous system. Studies on animal, pharmacological and molecular genetic models yield evidence that relates neurotrophins with the disorder. This work reviews the results from the studies conducted to date on ADHD and neurotrophic factors, especially brain-derived neurotrophic factor (BDNF). Thus, although pharmacological studies suggest that the response to atomoxetine in adults with ADHD is not directly mediated by the effect on the BDNF, reductions in BDNF levels in the plasma of adult patients with ADHD have been reported. Further studies with broader samples and greater control of environmental factors that can regulate neurotrophin expression, such as diet, physical exercise and situations of social risk, are needed to be able to determine the role they play in the aetiology of ADHD.