
ADHD and Its Magnetic Resonance Spectroscopy Examination

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Abstract

Attention-Deficit Hyperactivity Disorder (ADHD) is a neurological behavior abnormality which frequently seen in childhood and adolescence. Main symptoms are including unable to concentrate, cannot control the impulse, and sustained hyperactive behaviors. It also causes problems on learning and interpersonal relationships. In this article, we interpreted the causes of this disease, its subtype and its physiological mechanism, as well as its diagnosis and treatment methods. Currently, there is no final conclusion on the cause of ADHD. However, a lot of investigations indicated that this disorder not only related to abnormal dopamine secretion but also related to improper subtle function of brain. Due to these changes cannot be observed in general imaging methods, functional Magnetic Resonance Imaging (fMRI) has been used to study lesion site and changes in the brain while Magnetic Resonance Spectroscopy (MRS) has been used to investigate changes of brain metabolites. Therefore in this article, we also reviewed the applications of researches and techniques related to ADHD study by MRS method as the reference for future ADHD study.

Keywords: Attention Deficit Hyperactivity Disorder (ADHD), Children with ADHD, Dopamine, Magnetic Resonance Spectroscopy (MRS)