Hyperkinetic child

ADHD (*Attention Deficit Hyperactivity Disorders*) or hyperkinetic disorders are among the genetically determined neurodevelopmental disorders that manifest themselves from early childhood, but most often at school age, when they affect 5-7% of children, mostly boys. In 50%, ADHD persists into adulthood.

These disorders are characterized primarily by:

- attention deficit disorder (lack of concentration, inattention)
- impulsiveness
- hyperactivity (increased motor activity).

This is a very common disorder, with a prevalence in the population of 4.5–5.5%. ADHD in childhood is one of the most common diagnoses made by pediatric psychiatrists. ADHD significantly impairs the quality of life from childhood to adulthood, however, there are well-established and very effective treatment options for childhood and adolescence.

Etiology

The causes of ADHD are currently not fully understood and therefore it is not always possible to determine a definite cause. The development of ADHD is probably caused by genetic and external influences (ecological, health complications in pregnancy or childbirth, etc.).

ADHD is a disorder characterized by neurodevelopmental delay with deviating CNS maturation, dysregulation of neurotransmitter systems (noradrenergic and dopaminergic) and is also a high risk factor for the development of other psychiatric disorders. AN MRI in ADHD shows a reduced volume of the brain, cerebellum, basal ganglia on the right and corpus callosum on the right.

Clinical picture

- Core symptoms of ADHD: inattention, impulsivity, and hyperactivity. Short-term memory disorders.
- Often also emotional impulsivity and emotional dysregulation (low frustration tolerance, impatience, fury with easy anger and easy agitation by various emotions in general).
- Only in a small proportion of patients there is a complete remission of the disease during adolescence.

During childhood, the symptoms change

- in infants and toddlers – in addition, mood swings, impaired self-control and worse relationships with parents and peers;
- in preschool age – low stamina at games, motor restlessness, excessive defiance, problems in social adaptation (e.g. in collective institutions);
- in younger school age – dominated by inattention and motor restlessness, impulsive behavior, worse self-control, tendency to aggressive behavior, learning disabilities and school failure;
- in puberty – inattention persists, motor restlessness is relieved, in addition to problems with planning and organization, aggressive and delinquent behavior, substance abuse, emotional problems and accidents and injuries
- in adulthood – adverse consequences of ADHD: poor school performance, alternation of extracurricular activities, interpersonal conflicts, social maladaptation, abuse, predeliction, delinquency, job rotation, unemployment, marital and partner problems, problems with raising children, etc.

Hyperkinetic children are often unruly, impulsive and prone to injury. They often mindlessly break the rules and thus get into conflicts with discipline, and falling asleep disorders are also common. Behavioral disorders are often combined with developmental disorders of speech, learning, and sometimes with cognitive deficits. Following ADHD syndrome, mood disorders or tic disorder may arise.

Among other children, they are not very popular and can easily become isolated. Their relationship with adults is often socially disinhibited for lack of normal caution and distancing. In these children, cognitive abilities are impaired and there is often a specific delay in motor and language development. Secondary complications are dissocial behavior and low self-esteem.

ADHD disrupts the school performance of children with normal intellectual potential, so their school results do not match their level of intellect.

Diagnostics

- standard diagnostic criteria
- symptoms occur in different environments (home, school, leisure) and are present before the age of 7
- diagnostic interview with a parent (or other caregiver), examination of the child (observation and assignment of various tasks), questionnaires (for parents and teachers), or psychological examination (cognitive and perceptual-motor functions, work-volitional and emotional-social level of the child) and EEG.

Treatment

Non-pharmacological interventions

- parental training, self-control training;
- for adolescents, education, counseling for parents, counseling with time planning and structuring of the daily program, practicing self-control and help with interpersonal problems;
- in adults, complex psychotherapeutic programs, usually based on cognitive behavioral therapy (CBT).

Pharmacology

- stimulant methylphenidate (Ritalin®, Concerta®); rapid onset of action, effect up to 90 %; is not suitable for tic disorder;
- non-stimulating preparation atomoxetine, an inhibitor of norepinephrine reuptake (Strattera®); slow onset of action, up to 3 weeks; suitable for comorbid anxiety and depression or tics.

Objective: to correct core symptoms, calm family conflicts, focus on problems with education and employment, risks associated with driving, physical health, lifestyle, treatment of psychiatric comorbidities.

Psychotherapy and sociotherapy:

- appropriate educational approach of parents – kindness, calmness, optimism, great patience
- appropriate approach of teachers and special regime in the school

  The law gives children with this disorder the right to education, the content, forms and methods of which correspond to their educational needs and possibilities. These special educational needs are identified by the school guidance and counselling facility. See also Decree No. 73/2005 Coll. on the education of children, pupils and students with special educational needs and children, pupils and students with exceptional talents. Children with ADHD require a specific approach and regimen, different from that of their peers. For this reason, dyslexic and levelling classes with a special regime were established (e.g. breaks every 20 minutes, learning to lie on the ground, the possibility to change position and place during the teaching process, etc.). In the classrooms, special educators (ethopedists) teach, who can apply an individual approach with a maximum of 12 children in the class. Also, the Decree of the Ministry of Education of the Czech Republic (No. 23 472/9291) allows for a different classification, e.g. only written evaluation or, in the case of comorbid dyslexia, non-classification from languages.

- EEG-biofeedback (training of nervous system functions directly at the level of activation of attention and concentration, strengthening of will, self-control, etc.)
- movement rehabilitation (activation of flaccid muscles and improvement of motor coordination).
- ev. logopedic correction
- methods of counselling psychology (solving educational difficulties, adaptation difficulties of the child, practicing relaxation, etc.) and special pedagogy (development of perceptual-motor functions, corrective procedures in specific learning disorders – dyslexia, etc.)

ICD-10

Hyperkinetic disorders (F90) – characteristics of this group:

- early start (usually in the first five years of life)
- lack of perseverance in activities' requiring cognitive abilities
- the tendency to move from one activity to another' without one being completed
- disorganized' poorly regulated and excessive activity

F90.0 Activity and attention deficit disorder

- Attention deficit hyperactivity disorder
- Attention deficit hyperactivity disorder syndrome
- *Not included*: hyperkinetic disorder with impaired conduct (F90.1)

F90.1 Hyperkinetic conduct disorder

- hyperkinetic disorder associated with conduct disorder

F90.8 Other hyperkinetic disorders

F90.9 Hyperkinetic disorder NS

- Hyperkinetic reaction in childhood or adolescence NS
- Hyperkinetic syndrome of NS

For ADHD, diagnoses of LDE (*mild childhood encephalopathy*) or LMD (*mild brain dysfunction*) were previously used to try to capture the etiology, the currently used designation of the syndrome is based on the description of the behavior of this disorder.

Links

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