A hyperkinetic child

ADHD (*Attention Deficit Hyperactivity Disorders*), or **hyperkinetic disorders** , is a genetically determined neurodevelopmental disorder that manifests itself from early childhood, but mostly at school age, when it affects 5-7% of children, mostly boys. In 50%, ADHD persists into adulthood.[1]

These disorders are mainly characterized by:

- **attention disorder** (lack of concentration, inattention)
- **impulsiveness**
- **hyperactivity** (increased motor activity).[2]

It is a very common disorder, the prevalence in the population reaches 4.5-5.5%.[3][4] ADHD in childhood is one of the most common diagnoses that child psychiatrists deal with. ADHD significantly impairs quality of life from childhood to adulthood, however, there are well-proven and highly effective treatment options for childhood and adolescence.[2]

Etiology

The causes of ADHD are currently not completely known, and it is therefore not always possible to determine a definite cause. Genetic and external influences (environmental, medical complications during pregnancy or childbirth, etc.) are most likely involved in the development of ADHD.[1]

ADHD is a disorder characterized by neurodevelopmental delay with abnormal maturation of the CNS, dysregulation of neurotransmitter systems (noradrenergic and dopaminergic) and is also a high risk factor for the development of other psychiatric disorders. MRI in ADHD shows a reduced volume of the brain, cerebellum , basal ganglia on the right and corpus callosum on the right.[1]

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, short temper with easy anger and easily upset by various emotions in general).
- Only a small proportion of patients experience complete remission of the disease during adolescence. [2]

Symptoms change throughout childhood

- in infants and toddlers – in addition, mood swings, impaired self-control and worse relationships with parents and peers;
- in preschool age – little endurance in games, motor restlessness, excessive defiance, problems in social adaptation (e.g. in collective facilities);
- in younger school age – inattentiveness and motor restlessness dominate, impulsive behavior, poorer self-control, tendency to aggressive behavior, learning disorders and school failure;
- in adolescence - inattention persists, motor restlessness eases, in addition 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, predelinquency, delinquency, changing jobs, unemployment, marital and partner problems, problems with raising children, etc. [2][5][6]

Hyperkinetic children are often unruly, impulsive and prone to injury. They often thoughtlessly break the rules and thus get into conflicts with discipline, sleep disorders are also common. Behavioral disorders are often combined with developmental speech, learning and sometimes cognitive deficits. Mood disorders or tic disorders may develop as a follow-up to ADHD syndrome.

They are not very popular with other children and can easily become isolated. Their relationship with adults is often socially disinhibited due to a lack of normal caution and detachment. These children have impaired cognitive abilities and there is often a specific delay in motor and language development. Secondary complications are antisocial behavior and low self-esteem.[7]

ADHD impairs the school performance of children with normal intellectual potential, so that their school results do not correspond to the level of their intellect. [1]

Diagnostics

- standard diagnostic criteria

- symptoms occur in different environments (home, school, free time) and are present before the age of 7
- diagnostic interview with the parent (or other caregiver), examination of the child (observation and assignment of various tasks), questionnaires (for parents and for teachers), or psychological examination (cognitive and perceptual-motor functions, work-leisure and emotional-social level of the child) and EEG. [2][8]

Treatment

Non-pharmacological interventions

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

Pharmacology

- stimulant **methylphenidate** (Ritalin®, Concerta®); fast onset of action, effect up to 90%; not suitable for tic disorder;
- the non-stimulant drug **atomoxetine** , a noradrenaline reuptake inhibitor (Strattera®); slow onset of action, only after 3 weeks; suitable for comorbid anxiety and depression or tics.

Aim: core symptom modification, family conflict resolution, focus on educational and employment issues, driving risks, physical health, lifestyle, treatment of psychiatric comorbidities.[2]

Psychotherapy and sociotherapy:

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

  By law, children with this disorder have the right to education, the content, forms and methods of which correspond to their educational needs and possibilities. These special educational needs are determined by the school counseling facility. See also Decree No. 73/2005 Coll. on the education of children, pupils and students with special educational needs and exceptionally gifted children, pupils and students.[8] Children with ADHD require a specific approach and regimen, different from that of their peers. For that reason, dyslexic and remedial classes were established with a special regime (e.g. breaks every 20 minutes, learning lying on the ground, the possibility to change position and place during the teaching process, etc.). The classes are taught by special pedagogues (etopedists) who, with a maximum number of 12 children in the class, can apply an individual approach. Also, the decree of the Ministry of Education of the Czech Republic (No. 23 472/9291) allows for a different classification, e.g. only a written assessment or, in the case of comorbid dyslexia, no classification based on languages.[8]

- EEG-biofeedback (training of the functions of the nervous system directly at the level of activation of attention and concentration, strengthening of the will, self-control, etc.)
- movement rehabilitation (activation of weak muscles and improvement of motor coordination).
- possibly logopedic correction
- methods of counseling psychology (solving educational difficulties, adaptation difficulties of the child, relaxation exercises, etc.) and special pedagogy (development of perceptual-motor functions, corrective procedures for specific learning disorders - dyslexia, etc.)[8]

ICD-10

Hyperkinetic disorders (F90 (https://mkn10.uzis.cz/prohlizec/F90)) – characteristics of this group:

- early onset (usually in the first five years of life)
- insufficient persistence in activities requiring cognitive abilities
- the tendency to flow from one activity to another without completing one
- disorganized, poorly regulated and excessive activity[7]

F90.0 Activity and attention disorder

- Attention Deficit Hyperactivity Disorder
- Attention Deficit Hyperactivity Disorder
- *Excludes* : hyperkinetic disorder with conduct disorder (F90.1)

F90.1 Hyperkinetic behavior disorder

- Hyperkinetic disorder associated with conduct disorder

F90.8 Other hyperkinetic disorders

F90.9 Hyperkinetic disorder NS

- Hyperkinetic reaction in childhood or adolescence NS

- NS hyperkinetic syndrome [7]

The diagnoses of LDE (mild childhood encephalopathy) or LMD (*mild brain dysfunction*) were previously used for ADHD , which tried to understand the etiology, the currently used designation of the syndrome is based on the description of the behavior of this disorder. [8]

Links

References

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