



ROLE OF HOMOEOPATHY IN ATTENTION DEFICIT HYPERACTIVITY DISORDER (ADHD)

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Abstract : Attention deficit hyperactivity disorder (ADHD) is a mental health condition that can cause unusual levels of hyperactivity and impulsive behaviours. ADHD represents the extreme lower end of the continuous dimensional trait (bell curve) of executive functioning and self-regulation. In this review article, information from modern medicine texts and articles in view of definition, aetiology, risk factors, clinical features, and classification of disease and an essence of some homoeopathic therapeutic medicines used in cases of ADHD.

Keywords - ADHD, Hyperactivity, Impulsive Behaviours, Homoeopathy.

INTRODUCTION

Attention deficit hyperactivity disorder (ADHD) is the most common neurobehavioral disorder of childhood, among the most prevalent chronic health condition affecting school-aged children, and one of the most extensively studied neurodevelopment disorders of childhood. ADHD is characterized by inattention, including increased distractibility and difficult sustaining attention; poor impulse control and decreased self-inhibitory capacity; and motor overactivity and motor restlessness. A childhood diagnosis of ADHD often leads to persistent ADHD throughout the life span. From 60-80% of children with ADHD continue to experience symptoms in adolescence, and up to 40-60% of adolescents exhibit ADHD symptoms into adulthood.^[1]

EPIDEMIOLOGY ^{[2][3][4][5]}

The prevalence of behavioural disorders is increasing due to increased modernization, civilized society, over-possessive and over-protective environments at home. The over pampered child tends to

land into behavioural troubles like excessive crying, temper tantrums, cross answering, stubborn behaviour as these may result in fulfilling their demands as parents tend to give in to the requests. The conflicts in family also affects the mental and emotional spheres of the child. Also, the birth of younger sibling may result in triggering the attention demanding behaviour in the child.

ADHD is one of the most common childhood disorders, affecting an estimated 5-11% of school-aged children worldwide. It is more prevalent in boys than girls, with a male-to female ratio of approximately 2:1. However, under diagnosis in girls may contribute to this disparity. Symptoms typically appear in early childhood, with an average onset around 7 years old. ADHD frequently co-occurs with other mental health conditions, such as anxiety disorders, mood disorders, and substance use disorders.

An epidemiological study of the 20 countries from WHO World Mental Health Surveys found that across the high, upper-middle, and low/lower-middle-income countries, prevalence rates of ADHD in children and adolescents were most in the USA and least in Iraq, Poland and Romania. More tendency towards emotional and behavioural disorders were seen in children whose parents did not live together and in those of low socioeconomic status.

ETIOLOGY

Genetic Factors: ADHD has a strong hereditary component, with studies estimating its heritability between 60% and 90%. Family, twin, and adoption studies further support that ADHD is a highly polygenic disorder, meaning that multiple genetic variants contribute to its development. Specific genes related to dopamine regulation, such as DAT1 (dopamine transporter gene) and DRD4 (dopamine receptor gene), have been implicated in ADHD risk, though findings are still evolving.^{[6][7]}

Neurobiological Factors: From a neurobiological perspective, ADHD has been linked to structural and functional abnormalities in brain regions responsible for attention, impulse control, and executive functioning. Neuroimaging studies have shown delays in cortical maturation, particularly in the prefrontal cortex and basal ganglia. These brain regions play critical roles in attention regulation, decision-making, and inhibition, which are often impaired in individuals with ADHD. Additionally, dysfunction in dopamine signal pathways, which regulate mood, motivation, and attention, is thought to contribute to ADHD symptoms.^[8]

Environmental Factors: Environmental factors also play a significant role in the onset and severity of ADHD. Prenatal exposure to alcohol and tobacco has been consistently linked to an increased risk of developing ADHD, as has low birth weight (< 2,500 g). Other prenatal factors, such as hypoxic-anoxic brain injury and exposure to toxins, including lead and organophosphate pesticides, have also been associated with a higher likelihood of ADHD symptoms. However, the role of family environment and psychosocial adversity remains complex; while early deprivation can exacerbate symptoms, a direct causal relationship between these factors and ADHD is not universally agreed upon.^[9]

Brain Injury and Epilepsy: A history of brain injury, particularly hypoxic-anoxic injury, epilepsy, or traumatic brain injury, has been linked to an increased risk of ADHD. These neurological disruptions during critical stages of brain development may interfere with the functioning of the prefrontal cortex and other regions involved in attention and impulse control.^[10]

Genetic and Environmental Interplay: The interaction between genetic predispositions and environmental influences is critical in understanding ADHD. While genetic factors set the stage for susceptibility, environmental factors, such as prenatal exposures or early brain injury, can modulate the expression of ADHD symptoms. This multifactorial nature underscores the need for comprehensive approaches to diagnosis and treatment.^[11]

RISK FACTORS

1. **Genetic Predisposition:** Family history of ADHD significantly increases the risk, with heritability estimates ranging from 60% to 90%.^[12]
2. **Prenatal Exposure:** Exposure to tobacco smoke, alcohol, and illicit drugs during pregnancy is linked to a higher risk of ADHD.^[13]
3. **Low Birth Weight:** Children born with low birth weight or those who experience premature birth are at an increased risk for developing ADHD.^[14]
4. **Environmental Toxins:** Exposure to environmental toxins, such as lead and polychlorinated biphenyls (PCBs), has been associated with ADHD.^[15]
5. **Psychosocial Factors:** Adverse childhood experiences, including family dysfunction, abuse, and neglect, can contribute to the development of ADHD.^[16]
6. **Nutritional Deficiencies:** Some studies suggest that deficiencies in essential fatty acids, zinc, and iron may be linked to ADHD symptoms.^[17]
7. **Sleep Disorders:** Sleep disturbances and disorders, such as sleep apnea, have been associated with increased ADHD symptoms.^[18]

CLASSIFICATIONS ^{[19][20]}

INATTENTIVE TYPE	HYPERACTIVE TYPE	MIXED TYPE
Doesn't pay close attention to details	Fidgets with or taps hands or feet, or squirms in seat.	Diagnosed when both criteria for both inattentive and hyperactive/impulse types are met
Has problems staying focused on tasks or activities	Always "on the go," as if driven by a motor.	
Is easily distracted.	Talks too much.	
Forgets daily tasks	Interrupts or intrudes on others	

SIGNS AND SYMPTOMS ^{[21][22]}

1. INATTENTIVENESS (difficulty concentrating and focusing)

The main signs of inattentiveness are:

- ☆ having a short attention span and being easily distracted
- ☆ making careless mistakes – for example, in schoolwork
- ☆ appearing forgetful or losing things
- ☆ being unable to stick to tasks that are tedious or time-consuming
- ☆ appearing to be unable to listen to or carry out instructions
- ☆ constantly changing activity or task
- ☆ having difficulty organising tasks

2. Hyperactivity and impulsiveness

The main signs of hyperactivity and impulsiveness are:

- ◇ being unable to sit still, especially in calm or quiet surroundings
- ◇ constantly fidgeting
- ◇ being unable to concentrate on tasks
- ◇ excessive physical movement
- ◇ excessive talking

- ✧ being unable to wait their turn
- ✧ acting without thinking
- ✧ interrupting conversations
- ✧ little or no sense of danger

DIAGNOSIS ^[23]

In general, a child shouldn't receive a diagnosis of attention-deficit/ hyperactivity disorder unless the core symptoms of ADHD start early in life — before age 12 — and create significant problems at home and at school on an ongoing basis.

There's no specific test for ADHD, but making a diagnosis will likely include:

- Medical exam, to help rule out other possible causes of symptoms.
- Information gathering, such as any current medical issues, personal and family medical history, and school records.
- Interviews or questionnaires for family members, your child's teachers or other people who know your child well, such as caregivers, babysitters and coaches.
- ADHD criteria from the Diagnostic and Statistical Manual of Mental Disorders DSM-5, published by the American Psychiatric Association.
- ADHD rating scales to help collect and evaluate information about your child.

DIFFERENTIAL DIAGNOSIS ^[24]

common differential diagnosis for ADHD

Conditions that Can Mimic ADHD	Symptoms or Signs not Characteristic of ADHD
Generalized Anxiety Disorder	Worry for six months or more that the person cannot control; lack of energy; anxious mood and somatic anxiety symptoms.
Obsessive Compulsive Disorder	Presence of obsessions or compulsions that interfere with level of function.
Major Depression	Episodic decline in mood or depressed mood and/or dysphoria; suicide-related issues; low energy; psychomotor retardation.

Some Other Conditions That Can Mimic ADHD are as follows ^{[25][26]}

- ❖ Bipolar Disorder I or II (manic or hypomanic episode)
- ❖ Psychotic Disorder (schizophrenia or schizoaffective disorder)
- ❖ Autism Spectrum Disorder
- ❖ Oppositional Defiant Disorder
- ❖ Conduct Disorder
- ❖ Substance Use Disorder
- ❖ Learning Disorder
- ❖ Language Disorder
- ❖ Tic Disorder/Tourette syndrome (TS) Borderline Personality Disorder
- ❖ Antisocial Personality Disorder
- ❖ Medication with cognitive dulling side effect (e.g. mood stabilizers)
- ❖ General Medical Conditions
- ❖ Head Trauma/Concussion

- ❖ Seizure Disorders
- ❖ Hearing Impairment or Vision Impairment
- ❖ Thyroid Dysfunction
- ❖ Hypoglycemia
- ❖ Severe Anemia
- ❖ Lead Poisoning
- ❖ Sleep Disorders
- ❖ Fragile X Syndrome
- ❖ Unsafe or disruptive learning environment
- ❖ Family dysfunction or poor parenting
- ❖ Child abuse or neglect
- ❖ Attachment Disorder

HOMOEOPATHIC MANAGEMENT ^{[27][28][29][30][31][32][33][34][35]}

In aphorism 5 of 'Organon of Medicine, 5th edition', Dr. Hahnemann said that the most significant points in whole history of the disease are necessary for successful treatment. So that in these cases it happens frequently that maternal history specially during pregnancy becomes very important. Otherwise the constitution, the temperament of the patient, the tendencies, and the clarity of some of the presenting characteristics helps in understanding the case. But every case has their own variable approaches.

Homoeopathy treats an individual on the basis of totality of symptoms; totality of symptoms means that the uncommon peculiar characteristics symptoms that individualizes the patient irrespective of underlying pathology.^[27]

☆ **BARYTA CARB:** Baryta Carb works wonders in treating concentration difficulties in children having ADHD. Children who need Baryta Carb cannot concentrate or pay attention to any work. Difficulty in concentrating during studies is also pronounced in such cases. The affected children cannot fix their attention while reading, thereby forgetting the lesson. Always inattentive. Constant need for emotional and physical support. Nervous with strangers. Constantly picks and bites his nails. Delayed development.

☆ **BELLADONNA:** Furious excitement. The child lives in the world of his own. Suddenness and violence is very marked in all complaints. Child has a turmoil in the brain. Hypersensitive to light, jar, motion and pressure. He is lively and crazed by a flood of a lot of subjective visual impressions and the fantastic illusion. Hallucinations; sees monsters, hideous faces. Marked irritability, with rage, furious, strikes, bites and desires to escape. Pulls hair of bystanders in rage. The head is very hot with the red face and the wild fierce look.

☆ **LYCOPodium:** Lycopodium Clavatum is a homeopathic medicine considered in cases where children show difficulty with concentration during reading and conversation. They also tend to be confused and display traits of low self-confidence. Causeless crying. Aversion to company, specially of strangers. Envious of other's qualities. Lazy children. Selfish and greedy, very possessive about their stuff. Strong beliefs and ideas, aversive of contradiction. Defiant.

☆ **HYOSCYAMUS NIGER:** Hyoscyamus Niger is suitable in cases when there is impulsiveness with the desire to strike and bite in high degrees. Ailments from being abused, being alone, or emotional excitement. Behavioral problems, displays antisocial attitudes; biting others, destructive actions such as breaking things, tearing clothes, kicking, obstinacy, quarrelsomeness, desire to strike others. Shrieks in rage, or on waking up at night, or when touched. Throws temper tantrums. Hyperactive and restless children, desires to run

around the room or climb everywhere. Temper tantrums or rage with red face. Easily frightened on waking.

☆ **VERATRUM ALBUM:** Veratrum Album is a homeopathic treatment for ADHD used to control impulsive behavior along with a desire to cut and tear things and excessive shrieking.

☆ **TARENTULA HISPANICA:** Tarentula Hispanica is used when a child is hyperactive with marked restlessness and impatience. Sudden alteration of mood, foxy, destructive impulses. Sudden sly or violent destructive movements, sudden spitefulness, to a paroxysm of insanity in which patient strikes himself and the others, tear and destroy things. Frightful restlessness of the arms and legs. Very sensitive to music. Dances with music. Averse to company, but wants someone to be present around. Ungrateful, discontented. Patient is guided by whims of his own.

☆ **TUBERCULINUM BOVINUM:** Tuberculinum Bovinum is indicated when a child displays hyperactivity along with an impulse to run away. Use of the medicine is suggested when there are fits of angry outbursts coupled with screaming, and a tendency to use abusive language. Abusive, angry and rude children who tend to insult their parents. Dissatisfied and defiant children. Energetic children who cannot sit at one place. Always loquacious and full of enthusiastic spirits, chatters all the time with the parents, the relatives and the friends. Destructive, tends to break his toys and other objects, and pull his hair in anger. Knocks his head against the wall.

☆ **STRAMONIUM:** Stramonium is used for children with violent tantrums, intense fear, or night terrors. They may show excessive hyperactivity, fear of darkness, or feel threatened by imaginary things. Mentally retarded or congenitally deformed children where the mother was injured, either physically or emotionally. Wants to cling to parents all the time. Involuntary movements in the whole body. Behavioral problems in children from abuse, fright, reproaches and violence. Destructive, desire to break things and tear clothing and pillows. Disobedient, stubborn, mischievous, quarrelsome and abusive children. Very talkative. Violent anger.

☆ **LACHESIS MUTUS:** Lachesis Mutus is indicated for individuals with talkative, impatient, and argumentative tendencies. They may feel frustrated when not the center of attention and show bursts of irritability. Very talkative, loves dancing, singing and learning musical instruments. Possessive and materialistic children. Chaotic children; who cannot perform anything in an orderly manner. Clumsy, tends to drop things. Defiant children, contradicts everything. Restlessness of children who constantly play with their fingers and also make many gestures.

☆ **CALCAREA PHOSPHORICA:** Calcarea Phosphorica is often prescribed to children with learning difficulties and delayed cognitive development. These children may struggle with focus and feel overwhelmed with mental tasks.

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