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### CASE STUDY

## A CASE STUDY ON AYURVEDIC MANAGEMENT OF ATTENTION DEFICIT HYPERACTIVITY DISORDER [ADHD] IN CHILDREN

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### ABSTRACT

Attention Deficit Hyperactivity Disorder (ADHD) stands as one of the most prevalent neurobehavioral disorders in childhood, causing disruptions in social, academic, and occupational spheres due to its hallmark symptoms of inattention, hyperactivity, and impulsivity. In the realm of *Ayurveda*, conditions pertaining to psychiatric and behavioural disturbances find discussion within the chapter dedicated to *Unmada*. Through an analysis of signs and symptoms, ADHD can be correlated with *Unmada*. This study was conducted at the *Kaumarabhritya* Outpatient Department and Inpatient Department of Government *Ayurveda* Medical College & Hospital in Patna, Bihar. The objective was to evaluate the effectiveness of Ayurvedic treatment protocols in managing ADHD among children. After 65 days of therapy, incorporating *Panchakarma* procedures alongside internal medication, there was observed a notable 30–40% enhancement in overall therapeutic efficacy. A such as *Kosthashodhana*, *Basti*, *Shirodhara*, and *Nasya* were administered, and assessments were conducted both before and after treatment. The results indicated that the prescribed Ayurvedic treatment regimen was efficacious in managing ADHD symptoms.

**Keywords:** ADHD, *Unmada*, Behavioural Disorder, *Ayurvedic* Management, Case study.

## 1. INTRODUCTION:

Attention Deficit Hyperactivity Disorder (ADHD) is a neurobehavioral condition primarily observed in children, though it can persist into adulthood. Its prevalence in India is estimated to be around 1.3 per 1000 individuals. According to recommendations from the American Academy of Paediatrics, it is advised to assess any child aged 4 to 18 years for ADHD if they exhibit academic or behavioural difficulties along with symptoms such as inattention, hyperactivity, and impulsivity. These symptoms of ADHD can significantly disrupt various aspects of a child's life, including social interactions, academic performance, and occupational functioning.

While the symptoms of ADHD typically manifest during childhood, they can persist into adolescence and adulthood<sup>1</sup>. Studies have indicated that mothers of children with ADHD are at a higher risk of encountering birth complications, including conditions such as toxemia, prolonged labour, and complicated delivery. Several factors during pregnancy have been associated with an increased likelihood of attentional difficulties in children, which are often linked to the development of ADHD. These factors may include maternal drug use, smoking, alcohol consumption during pregnancy, as well as exposure to substances like lead or mercury<sup>2</sup>. In Ayurveda, while there isn't a direct term equivalent to ADHD, its symptoms can be closely associated with a condition known as *Unmada*. According to Ayurvedic texts like those by *Acharya Charaka*, *Unmada* is attributed to various causative factors such as the consumption of incompatible or contaminated foods, spiritual possession, and mental trauma arising from prolonged exposure to fear or excitement. These factors lead to the vitiation of Doshas in individuals with low levels of *Sattva Guna*, subsequently affecting the mind, which is considered the seat of intellect. *Unmada* commonly presents with symptoms including intellectual confusion, mental instability, impatience, restlessness, incoherent speech, a sense of emptiness in the mind, and feelings of anxiety. While *Ayurveda* may not directly label ADHD, the symptoms and underlying imbalances described in *Unmada* can offer insights into Ayurvedic approaches for managing similar neurobehavioral conditions.

Ayurvedic interventions play a significant role in managing neurobehavioral disorders such as ADHD. Therefore, this case aimed to explore the efficacy of Ayurvedic treatments in addressing ADHD. By utilizing Ayurvedic principles and therapies tailored to the individual's constitution and imbalances, this approach seeks to address the root causes of ADHD symptoms and restore balance to the mind and body. Through this case study, we sought to evaluate the effectiveness of Ayurvedic treatments in managing ADHD, offering a holistic and personalized approach to alleviate symptoms and improve overall well-being.

## 2. CASE REPORT:

A 7-year-old male child with the complaints of hyperactivity, irritability in attentiveness, and lack of concentration, low memory power and delayed speech along with stammering had approached our hospital. As per the information by her parents, the child was apparently normal till 3 years of age. Gradually they noticed the behavioural disturbances in their child. She was not able to concentrate on any things in particular

for more time. She developed irritability behaviour, inattentive and slow learning. She had low memory power that she can't even recognize their parents. Then she developed anxiety and fear towards people and the crowd where she became socially inactive. She also had the problem in her speech. Patient had taken treatment for this but no changes observed in her behaviour. So, they approached our hospital for further management.

### **Birth History**

Full term delivery with caesarean section [previous LSCS]. No history of Birth Asphyxia.

### **Developmental History**

Gross motor & fine motor development were normal as per the chronological age but there was delayed with Language and Social development.

### **Family History**

Non-Consanguineous marriage. Elder sister has no any problem.

### **Personal History**

Diet - Mixed Appetite

Bowel - Clear (once daily)

Urine - Normal

Sleep - Sound

### **General Examination,**

Anthropometry and Vitals General condition - Fair, Lean, Hyperactive and in attentive.

Height - 110 cm

Weight - 17 kg

HC - 50 cm

CC - 56 cm

MAC - 13.5 cm

HR - 88 bpm

RR - 26 rpm

Temperature - Afebrile

### **Systemic Examination**

Examination of Cardiovascular system, Respiratory system, Per abdomen shows no deformity. Gait was normal. Muscle tone and texture was normal.

### **Central Nervous Examination**

Patient was conscious, inattentive, easily gets distracted, poor eye contact, not obeying the commands and irritable, can speak words but not clear but stammering, unable to memorise the daily activity, low memory power, often fidgets with hands or feet or squirms in seat. Sleeping patterns was disturbed and less and get up at night frequently.

### ***Ashta Sthana Pareeksha:***

*Nadi - Vata-Pittaja*

*Mala - Prakruta* (once daily, normal consistency, satisfactory)

*Mutra - Prakruta* (4-6 times a day / 1-2 times at night)

*Jihwa - Aliptha* (not coated)

*Shabda - Stammering*

*Sparsha - khara*

*Drik - Prakrutha* (normal)

*Akriti - Leena* (lean)

*Samprapti Ghataka*

*Dosha - Vata- Pitta Pradhana*

*Dooshya - Rasa, Manas*

*Agni - Vishamagni*

*Udbhavasthana - Pakwashaya*

*Adhisthana – Shiras*

*Vyakthasthana - Sarvashareera*

*Srotas - Manovahasrotas*

*Srotodushti - Sanga and Vimargagamana*

*Rogamarga – Abyantara*

*Rogaswabhava - Chirakari*

*Sadya Asadyata - Krichra Sadhya*

Diagnosis: Attention Deficit Hyperactivity Disorder (*Vata-Pittaja Unmada*)

### **TREATMENT PLAN:**

Total duration of treatment as given below: 65 days.

Two shift treatment plan of 15 days gap.

<b><i>Shamana Aushadi</i></b>	<b><i>Panchakarma Given</i></b>
<b>1<sup>st</sup> shift</b> 1.Tab <i>Annakama vati</i> 1bd 2. <i>Abhivya vati</i> 2bd 3.Tab <i>Manasmitra votkam</i> 1 bd 4.Syrup <i>Sarswatharistam</i> with gold 10 ml bd	Initially 3 days <i>Deepan</i> <i>Pachan</i> with <i>Panch kol</i> <i>phanth</i> 10 ml tid 2. <i>Snehan</i> with <i>Mahanaryan taila</i> + <i>Parishek</i> with <i>Dasmool</i> <i>quath</i> for 7 days

<p>5. <i>kumar kalyan rasa</i> half tab bd mixed with <i>Mahakalyanak ghrita</i> <b>2<sup>nd</sup> shift</b> 1. Tab. <i>annakama vati</i> 1bd 2. <i>Abhivya vati</i> 2bd 3. Tab <i>Manasmitra votkam</i> 1 bd 4. Syrup <i>sarswatharistam</i> with gold 10 ml bd 5. <i>Kumar kalyan rasa</i> half tab bd mixed with <i>Mahakalyan ghrita</i></p>	<p>3. <i>Matra basti</i> with <i>Mahanaryan taila</i> For 7 days.</p> <p>Initially 3 days <i>Deepan Pachana</i> with <i>Panch kol phanth</i> 10 ml tid 2. <i>Snehan</i> with <i>Mahanarayan taila</i> <i>Parisheka</i> with <i>Dasmool qwath</i> + <i>Matra basti</i> with <i>Ksheerbala taila</i><sup>4</sup> for 7 days. 3. <i>Shiro dhara</i> with <i>Bramhi Taila</i> for 21 days. 3. <i>Nasya</i> with <i>KB</i> 101(<i>ksheer bala taila</i> <i>101avarthi</i>) for 7 days.</p>
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❖ **Note:** For each procedure 3 days gap.

### 3. OBSERVATION AND RESULT:

SIGN & SYMPTOM	BEFORE TREATMENT	AFTER TREATMENT
<b>HYPERACTIVITY</b>		
Not sitting in one place	Not sitting in one place for 5 min	Sitting for 10-15 min. in one place

Sustaining attention in tasks and play activities	Difficulty in sustaining attention in tasks and play activities	Mild improvement in sustaining attention in tasks and play activities
Talking	Talking excessively	Now talking limitedly but sometimes talking nonstop
Forgetfulness items	Always ex-pencil, rubber in school	Less forgetfulness

### Inattention

Distracted	Often distracted in school	Only happens in heavy work load from school
Eye contact while conversation	Less eye contact while conversation	Moderate increase in eye contact while conversation.
Fidgets	Often fidgets with hands or feet or squirms in seat	Slightly reduced from previous.
Obeying commands	Every time not obeying commands	Sometimes not obeying commands.
Leisure time activity	Difficult in playing or engaging himself in leisure time.	Now a days playing with teddy alone quietly & along with engaging him self in leisure time for activity.

### Impulsivity

Having trouble waiting for his term	Every time having trouble waiting for his turn	Sometimes having trouble waiting for his turn
Controlling anger	Trouble in controlling anger	Tries to control anger

Sleeping pattern	Less sleep frequently getup at night	Sleep improved only get up at night for urine passage.
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Table 1: The observation and result based on clinical picture was noted before and after the course of treatment is as given.

#### 4. DISSCUSSION:

In this case, we identified a predominant involvement of *Vata* and *Pitta Doshas* in the manifestation of ADHD symptoms. Therefore, the treatment plan primarily focused on restoring balance to these *doshas*. ADHD is a neurobehavioral disorder, medications with *Medya* (brain tonic) properties were selected to address the underlying imbalances and support neurological function. The aim was to pacify aggravated *Vata* and *Pitta doshas*, thus alleviating symptoms of hyperactivity, irritability, lack of concentration, and other associated issues. This approach aimed to not only manage the current symptoms but also address the root cause of the disorder to promote long-term well-being and improved quality of life for the child.

During the initial admission, our treatment approach involved recommending *deepan pachana* therapy with *panch kola phanth*. The primary objective of this therapy was to *Deepana*, the appetizer component in *Ayurveda*, is known for its ability to kindle the digestive fire, *Agni*, within the body. However, it's important to note that while *Deepana* enhances *Agni*, it doesn't directly address the digestion of *Ama*, the toxic waste byproduct of incomplete digestion.

On the other hand, *Pachana* drugs, classified as digestives in *Ayurveda*, primarily target the breakdown and elimination of *Ama* from the body. Unlike *Deepana*, their focus is on resolving the accumulation of *Ama* without necessarily intensifying *Agni*.

It's crucial to understand that *Deepana* drugs aid in the separation of *Dosha*, the biological humors, from *Dathu*, the body tissues. This process supports the proper functioning of *Agni* and facilitates the efficient conversion of food into nourishment, ultimately contributing to overall well-being. This tailored approach aimed to prepare the body for further treatment while ensuring the safety and well-being of the 7-year-old child. Then in each sitting we had planned for the *Sarvanga Abyanga*, *Nadi Sweda*, *Kashayadhara / Tailadhara*, *Matrabasti*. Probable mode of action of the treatment are as follows:

##### **Shirodhara**

We incorporated *Shirodhara* therapy into the treatment plan due to its significant impact on *Uttamanga*, which in *Ayurveda* refers to the head, considered the control center of the body's functions. It also involves a continuous and gentle stream of medicated liquids flowing over the forehead and head, stimulating local cells. The medicinal herbs used in this therapy, such as *Dashamoola*, *Yastimadhu*, *Vacha*, and *Brahmi*, possess *Vata-Pitta* balancing properties and a cooling effect (*Sheetavirya*) on the head. This cooling effect aids in reducing hyperactivity, while the *Medya* (brain tonic) properties of these herbs enhance concentration and memory power.

It also primarily serves as a local treatment (*Sthanika Chikitsa*), particularly effective in acute cases. However, to further advance the child's progress, we introduced *Matra Basti* therapy simultaneously. It involves the administration of medicated enemas, providing systemic support to address underlying imbalances and promote overall well-being. This combined approach aimed to optimize therapeutic outcomes and support the child's holistic healing journey. It is a therapy that plays a crucial role in *Ayurvedic* treatment, particularly in managing conditions primarily related to *Vata* imbalance. According to *Acharya Charaka*, *Basti* is considered *Ardha Chikitsa*, meaning it holds a significant position in therapeutic interventions, especially for disorders associated with *Vata* dominance. Since ADHD often exhibits characteristics influenced by *Rajoguna*, which is predominantly governed by *Vata*<sup>3</sup>, controlling *Vata* dosha can indirectly help manage the symptoms associated with ADHD. It also works through the gut-brain axis, exerting its effects not only on the gastrointestinal system but also on the brain. By regulating *Vata dosha*, it aids in reducing stress, anxiety, and depression, which are commonly observed in individuals with ADHD.

Initially, we prescribed *Matra Basti* using oils such as *Ksheerabala Taila*<sup>4</sup> and *Mahanarayana Taila*. These oils are chosen for their *Vata*-pacifying properties, aiming to address the primary complaint of hyperactivity in ADHD. Subsequently, as treatment progressed, we introduced a medicated *ghee*. *Ghrita* aids in pacifying *Pitta dosha*, complementing the management of ADHD symptoms by addressing any *Pitta* aggravation. Additionally, *Mahakalyanaka Ghrita* is known for its cognitive-enhancing properties, which can further support the improvement of cognitive functions in individuals with ADHD.

Once *Vata* and *Pitta doshas* were adequately controlled, we incorporated *Brahmi Taila* into the treatment regimen. *Brahmi Taila* is renowned for its *Medya* (brain tonic) properties, which promote mental clarity, concentration, and memory power. By integrating *Taila*, we aimed to enhance cognitive functions and overall well-being, completing a comprehensive approach to managing ADHD using *Ayurvedic* principles and therapies.

### ***Samana ausadhi***

Following the purification procedures to eliminate viciated *doshas* from the body, we initiated the administration of *Shamana Ausadhi*, or pacifying medicines. These medications contain gold, known for its *Medya* properties, which have a beneficial effect on brain cells, enhancing concentration and memory power. Therefore, we recommended several formulations, including *Manasmitra vatkam*, *kumar kalyan ras*, *Saraswataarista* enriched with gold, these formulations were chosen for their ability to support cognitive functions, aiding in improving focus, memory retention, and overall mental clarity in the management of ADHD.

### ***Asayapratisharana***

Addressing speech difficulties is crucial in managing ADHD, which was also observed in this case. Therefore, we implemented *Asayapratisharana* therapy, a specialized treatment aimed at enhancing speech capabilities. This therapy involved the use of *Teekshna* (sharp), *Ushna* (hot), and *Medhya* (brain tonic) drugs tailored to improve



the child's speech abilities. By incorporating these specific medications, we aimed to significantly improve the child's speech and communication skills, contributing to their overall development and well-being.

**Nasya:** *Nasa* is the *Dwara* of *Shiras*. So, we advised the *Pratimarsha Nasya* with *KB 101 Taila* which increased her mental ability.

## 5. CONCLUSION:

In *Ayurveda*, ADHD symptoms closely resemble those of *Unmada*, allowing for a correlation based on signs and symptoms. By assessing the involvement of *doshas*, symptomatology, and appropriate treatment approaches, the condition was diagnosed as *Vata-Pittaja Unmada*. Treatment was then tailored accordingly. The therapeutic plan involved various interventions such as *Deepana* (digestive enhancement), *Pachana* (digestive regulation), *Shirodhara*, *Matra Basti*, followed by *Shaman Aushadi* comprising *Medya* drugs, *Asyapratisarana*, *Pratimarsha Nasya*.

Recognizing ADHD as a *Yapya Vyadhi*, or a condition requiring ongoing management, efforts were made to enhance the child's quality of life and support the family. The treatment yielded satisfactory results, contributing to the child's well-being and bringing contentment to the parents. Furthermore research work is needed for this diseases.

## COMPETING INTEREST

No competing interest exist.

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