



**Case Study**

**EFFECT OF MAHAPAISHACIKA GHRTA IN THE MANAGEMENT OF ADHD - CASE SERIES**

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**ABSTRACT**

Attention-Deficit/Hyperactivity Disorder (ADHD) is the most commonly diagnosed childhood psychiatric disorder. It is a neuro-developmental disorder characterized by problems in paying attention and hyperactivity-impulsivity which is inappropriate for the age of the child. Children with ADHD have been found to have Cognitive deficits, lower IQ, Impaired social relationships with in the family and with peers as well as poor study skills and lower academic achievement. The disease most commonly affects the children of age group 6 to 12. Despite being most commonly studied and diagnosed mental disorder in children, the cause is yet not known in majority cases. W.H.O. (World Health Organization) estimated that it affected 39 million people as of 2013. ADHD prevalence is estimated to be 5% for the Indian pediatric population. 5 to 7% children are getting affected with similar rates in various countries. It is found more commonly in boys than in girls (ratio 3:1). In Ayurveda, disorders related to psychiatric and behavioral disturbances are discussed under the chapter of *Unmada*. The cardinal features of ADHD resemble features of *Vata-pitta* predominant *Unmada*. This disorder affects mind as well as body because of having *Adhishthana* in both *Sharira* and *Mana*. Five diagnosed cases of ADHD from OPD of Manassanthi, Vaidyaratnam P S Varier Ayurveda College, Kottakkal, were given *Mahapaishacika Ghрта* in a dose of 10ml twice daily 1 hour after food for 1 month period. Severity of symptoms was assessed by using Conner's Revised Rating Scale on 0<sup>th</sup> day, 16<sup>th</sup> day, 31<sup>st</sup> day and after 15 days. There was a significant improvement in the Conner's Revised Rating Scale after Ayurvedic management and follow up.

**INTRODUCTION**

Attention deficit hyperactive disorder (ADHD) is one of the commonest neurobehavioral disorders of childhood, affecting social, learning, and behavioural abilities, with a prevalence rate in India of 1.3 per 1000. The prevalence rate of ADHD in India is more than the global rate, i.e., at 11.32%, as per a study conducted in Coimbatore<sup>[1]</sup> The disease most commonly affects the children of age group 6 to 12. Its prevalence is higher, i.e., (66.7%) in male children than in female children. Poor academic performance due to difficulties while reading, writing, and behavioural problem are common issues in children who have ADHD.

The characteristic features of the disease are inattention, including increased distractibility, poor impulse control, and hyperactivity. Affected children may commonly experience underachievement in academics and difficulties with interpersonal relationships. Although the symptoms of ADHD begin in childhood, it can continue through adolescence and adulthood.<sup>[2]</sup> DSM V criteria are considered to be the criteria of diagnosis for ADHD. Based on the types of symptoms, three kinds (presentations) of ADHD can occur. They are combined presentation, predominantly inattentive presentation and predominantly hyperactive-impulsive presentation. Presynaptic dopaminergic agonists, commonly called psychostimulants medication, are the choice of drug for treating ADHD. Increased risk of adverse cardiovascular events, including sudden cardiac death, myocardial infarction, and stroke in young adults, rarely in children, may be associated with stimulant drugs used to treat the disease.<sup>[3]</sup>

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As per Ayurveda, every hyperactive disease falls under the category *Unmada*. The cardinal features of ADHD resemble features of *Vata-pitta* predominant *unmada*.<sup>[4]</sup> (Table 1) Ayurveda has many effective

treatments for ADHD, among these *Ghrta* preparations have an important role as *Ghrta* is ideal for improving higher mental functions, indicated in *Unmada*, *Apasmara* and especially beneficial for children.<sup>[5]</sup>

**Table 1: Lakshanas of Unmada in ADHD**

<b>Vatika Symptoms<sup>[6]</sup></b>	<b>Paithika Symptoms<sup>[7]</sup></b>
परिसरणमजस्रम् (Constant wandering)	अमर्षः (Irritability)
बहुभाषिता (Continuous and incoherent speech)	संरम्भश्चास्थाने, Excitement on inappropriate occasions
अस्थाने क्रोश हसितस्तिमित (Smiling, laughing)	मुष्टिलोष्टाद्यभिद्रवः Inflicting injury on others,
अस्थाने नर्तनम् (Singing and playing at inappropriate situations)	अतिद्रवणं (Fleeing)
काश्यं (Emaciation)	प्रच्छायशीतोदकान्नाभिलाषः (Desire for cold water and food)
पारुष्यम् (Roughness)	क्रोधः (anger)

**MATERIALS AND METHODS**

Five diagnosed cases of ADHD as per DSM 5<sup>[8]</sup> were selected from Manassanthi OPD of VPSV Ayurveda College, Kottakkal.

**Table 2: Preliminary Details of the Patients**

	<b>Case 1</b>	<b>Case 2</b>	<b>Case 3</b>	<b>Case 4</b>	<b>Case 5</b>
<b>Gender</b>	Male	Male	Male	Male	Female
<b>Age</b>	6 years	8 years	9 years	7 years	7 years
<b>Duration</b>	3 years	5 years	6 years	4 years	4 years
<b>Family history</b>	Absent	Absent	Absent	Present	Absent
<b>Prenatal history</b>	Gestational diabetes	History of previous abortion- Rubella	Nothing specific	Nothing specific	Hyperemesis gravidarum
<b>Birth history</b>	Preterm LSCS	FTND Birth asphyxia NICU -24hr	Preterm LSCS	FTND	FTND No birth cry NICU -24 hr
<b>Developmental history</b>	Normal	Speech -delayed	Walking- delayed	Normal	Language - delayed

**Table 3: Presenting Complaints**

<b>Case 1</b>	<b>Case 2</b>	<b>Case 3</b>	<b>Case 4</b>	<b>Case 5</b>
Persistent irritability and restlessness	Persistent irritability and restlessness	Poor concentration and attention	Irritability, restlessness	Persistent irritability and restlessness
Unable to sit in one place	Increased anger	Irritability, Restlessness	Running excessively in inappropriate situations	Increased anger Unable to sit in one place
Excessive talkativeness	Temper tantrums	Argues with adults	Difficulty in concentrating in class	Decreased attention and concentration in school
Short attention span	Decreased attention and concentration in school	Difficulty in waiting his turn	Shouting and attacking with his classmates	Excessive talkativeness
Fidgets with hands and feet	Aggressive behaviour	Always annoying others		

Three of them had associated learning disability

**General Examination**

Vitals were normal. The general conditions of the patients were moderate, nourished and hyperactive. Examination of cardiovascular system, respiratory system, per-abdomen shows no deformity. Gait was normal. Muscle tone and texture was normal.

**Central Nervous System**

CNS revealed that the children were conscious but not well oriented with time, place and person, inattentive, easily gets distracted, poor eye contact, not obeying the commands and irritable. Sensory system were intact and no abnormality was found. The

detailed examination of the patients was not possible to record properly as they were not stable in one place.

**Assessment**

The assessment was done using the Conner’s revised rating scale for ADHD<sup>(9)</sup> on the 0<sup>th</sup> day, 16<sup>th</sup> day, 31<sup>st</sup> day and after 15 days follow up.

**Table 4: Method of Intervention**

Drug	Mahapaishacika Ghrta <sup>(10)</sup>
Dose	10ml
Time of intake	Twice daily, 1 hour after food
Anupana	Lukewarm water
Duration	30 days

**RESULTS**

**Table 5: Conner’s Revised Rating Scale for ADHD**

Case	0 <sup>th</sup> day	16 <sup>th</sup> day	31 <sup>st</sup> day	46 <sup>th</sup> day
Case 1	70	68	60	50
Case 2	65	63	56	45
Case 3	65	63	54	44
Case 4	68	65	55	48
Case 5	67	63	54	47

**Table 6: Percentage of Relief on Conner’s Revised Rating Scale**

Domain	Percentage of relief
Inattention	20.14%
Hyperactivity/Impulsivity	35.98%

**Table 7: Condition of the Patients**

Signs and symptoms	Before treatment	After treatment
<b>Hyperactivity</b>		
Not sitting in one place	Not sitting in one place for 5 min.	Sitting for 15 - 20 min in one place
Fidgets with hands or squirms in seat	Always fidgets with hands and squirms in seat	Now only Sometimes fidgets with hands
Talking	Talking excessively	Now talking limitedly but sometimes talks excessively
<b>In Attention</b>		
Eye contact while conversation	Less eye contact while conversation	Moderate increase in eye contact while conversation
Sustaining attention in tasks and play activities	Difficulty in sustaining attention in tasks and play activities	Moderate improvement in sustaining attention in tasks and play activities
Regarding task focus	Start task but quickly lose focus	Now focus increased in tasks
<b>Impulsivity</b>		
Having trouble waiting for his turn	Every time having trouble waiting for his turn	Sometimes having trouble waiting
Controlling anger	Trouble in controlling anger	Tries to control anger

**Probable Mode of Action of Mahapaishacika Ghrta**

- Ghee carries the therapeutic properties of herbs to all the body’s tissue. The lipophilic action of ghee facilitates transportation to a target organ and final delivery inside the cell since the cell membrane which also contains lipid. Ghrta has the capacity to cross the blood brain barrier.
- Vagbhata has described Mastulunga (brain) as composed of Medas. Dalhana as stated that Mastulunga is Mastaka majja resemble partially melted Ghrta. This suggests the relation between

Ghrta and Mastulunga. While explaining the properties of Ghrta, it enhances Dhee, Smriti and Medha. As ADHD is a developmental disorder and it also affects Dhee, Dhriti and Smriti; Ghritha have a definite role in ADHD.

- Indication of Mahapaishacika Ghrta described in classics includes - Caturtaka jwara (type of irregular fever), psychiatric ailments like Unmada (insanity), Apasmara (epilepsy), afflictions by Graha (seizure by evil spirits) etc. This Ghrta preparation is especially considered to revitalize Buddhi

(intellect), *Medha* (thinking ability), and improves *Smrti* (memory power) and also helps in the development of the physique of children.

- *Mahapaishacika Ghrta* contains variety of drugs and most of the ingredients are *Tridosasamaka* in nature. The entire formulation contains about seven *Medhya* drugs which act on the brain by its *Prabhava*.
- The key ingredient in this preparation is *Jatamansi* (*Nardostachys jatamansi*) which is known 'Bhutaghna' drug with *Tridosahara* and *Medhya* property. Phytochemical analysis with ethanol extract of *Jatamansi* roots shown that, the main active constituent jatamansone is effective in Hyperkinetic states and its acute and sub chronic administration have significant action on GABA. In ADHD there is decreased levels of GABA which results in impulsivity.<sup>[12]</sup>
- It contains *Bacopa monnieri* (*Brahmi*) which act as a potential agent for improving attention and hyperkinetic disorders via a combination of cognitive enhancing and sedative effects.
- Also 10 of the total ingredients possess *Anuloma* property which can be attributed to its *Vatahara* action. In ADHD, we can see *Vata* predominant symptoms mostly and associated with some *Pitha* symptoms. So the *Vatahara* and *Anulomana* property will helps to counteract with *Vata* symptoms.
- Most of the drugs are *Madhura* and *Tiktha rasa pradhana*. *Tiktarasa* property generally considered to improve *Medha* and also will helps to pacify *Pitta* predominant symptoms seeing in ADHD.

## CONCLUSION

The present case series demonstrated the role of Ayurveda in managing a combined type of ADHD. According to Ayurveda, ADHD can be nearly co-related to *Vata-Pittaja Unmada* based on the sign and symptoms. *Mahapaishacika Ghrta* was found to be effective in managing the symptoms of ADHD. There was 36 percentage of relief on hyperactivity domain and 20 percentage relief on inattention domain in the Conner's Revised Rating Scale after Ayurvedic management and follow up. Large sample studies may be conducted to generalize these results and to explore the possibilities of Ayurveda in managing the

symptomatology of ADHD and reported for the benefit of the society, so as to improve the quality of life of the affected.

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