

AYURVEDIC MANAGEMENT OF ADHD (ATTENTION-DEFICIT AND HYPERACTIVITY DISORDER) WITH *PANCHENDRIYA VIVERDHAN TAIL NASYA*- A CASE STUDY

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ABSTRACT

Attention deficit hyperactivity disorder (ADHD) manifests in childhood with symptoms of hyperactivity, impulsivity and/or inattention. In addition, there are other secondary symptoms associated with ADHD such as insomnia, learning disabilities and delayed language development. The symptoms affect cognitive, academic, behavioural, emotional and social functioning. ADHD is found to be more common in boys than girls. ADHD is a Vata-Pitta predominant disorder. In Ayurveda, there are references in the *Samhita* that cite symptoms associated with inattention, hyperactivity and compulsive behaviour as the symptoms of Vata imbalance in the body. The Charaka Samhita states, "If Vyana-vayu is occluded by Prana-vayu, then there will be loss of all the senses, and there will loss of memory as well as strength." Pitta symptoms include: anger, aggressiveness,

self-ruining behaviour, increased body temperature, discolouration of eye/ skin and upashaya (relief) with coolant activities. A 11 year old male child brought by his father with complaint of the hyper activity behaviour, aggressive nature etc. in ayurvedic management planned for nasya karma with *panchendriya viverdhan tail* described by Acharya kashyapa.

KEYWORD: ADHD, *Nasya*, *Panchendriya Viverdhan tail*.

INTRODUCTION

Psychosomatic disorder affected children are increased in paediatric clinics, out of that Attention deficit hyperactivity disorder (ADHD) is one of them which is characterized by a persistent pattern of inattention and/or hyperactivity as well as forgetfulness, poor impulse control or impulsivity and distractibility.^[1] 5-10% of Indian population is affected by this disorder with male predominance.^[2] Attention-deficit/hyperactivity disorder (ADHD) is a brain disorder marked by an ongoing pattern of inattention and/or hyperactivity-impulsivity that interferes with functioning or development.

- **Inattention** means a person wanders off task, lacks persistence, has difficulty sustaining focus and is disorganized; and these problems are not due to defiance or lack of comprehension.
- **Hyperactivity** means a person seems to move about constantly, including in situations in which it is not appropriate; or excessively fidgets, taps, or talks. In adults, it may be extreme restlessness or wearing others out with constant activity.
- **Impulsivity** means a person makes hasty actions that occur in the moment without first thinking about them and that may have high potential for harm; or a desire for immediate rewards or inability to delay gratification. An impulsive person may be socially intrusive and excessively interrupt others or make important decisions without considering the long-term consequences.^[3]

ADHD AND AYURVEDA^[4]

In *Ayurveda* neither this disease nor the symptoms of ADHD are described but some references about abnormal behavior are discussed under features of *vataprakriti Anavasthita Chittatva Mano vibhrama*, *Buddh vibhrama*, *Smriti vibhrama*, *Sheela vibhrama*, *Cheshta vibhrama* and *Achara vibhrama* can be correlated with ADHD.^[5] According to *Ayurveda*, the main reason for ADHD is vitiation of *dhee* (rational thinking), *dhriti* (retaining power of the mind), *smriti* (memory) which causes abnormality and abnormal conduct resulting into improper contact of the senses with their objectives and give rise to inattention, hyperactivity and impulsivity.^[6]

According to *Ayurveda*, psychological problems start when fundamental imbalances develop in the biological intelligence that controls all bodily processes.

- Vata imbalance contributes to anxiety, fear, mental instability and insomnia
- Pitta imbalance may give rise to anger and irritability
- Kapha imbalance may lead to lethargy and depression.^[7]

BASIC INFORMATION OF THE PATIENT

Age: 11 years

Sex: Male

Religion: Hindu

Socioeconomic status: Middle class.

Father occupation- Job in Indian navy

Mother is house wife.

Pradha Navedana Visesa (Chief Complaints)

Hyper activity, aggressive nature, emotional some time cry and sometime angry, poor school performance, beaten classmates and siblings, unable to concentrating in work, bed wetting some times since 3.5 year of age.

Vartamanavya Dhivrta (History of Present Illnesses)

Patient was delivered normally. cried soon after birth birth weight 3.31kg.

Purvavya dhivrta (history of past illness)

In antenatal period mother haemoglobin was 3gm% so blood transfusion given and admitted 45days in hospital.

Cikitsavrittanta (Treatment History)

Patient was taken allopathic medicine for this disease.

Kulaja Vruttanta (Family History)

No family history and consanguinity found.

Birth history

Antenatal: In antenatal period mother haemoglobin was 3gm% so blood transfusion given and admitted 45days in hospital.

Postnatal history

No history of birth asphyxia, convulsion any trauma etc.

Viruddhabhisamskrti (History of Immunization)

Proper up to age.

Vaiyaktika Vruttanta (Personal History)**Aharaja**

Appetite was poor. Diet was dominant in *madhura rasa* (sweet diet).

Viharaja

Nature of activity was hyper active

Sleep was disturbed (2–3 h/day, 6–7 h/night). Bed wetting (had not achieved bladder control)

Examination

Vitals were normal. Cardiovascular system, respiratory system and per abdomen examinations had shown nodeformity. *Prakṛti* (constitution) was *Vatadhipitaja*.

Astavidhapariksa

Naḍi (pulse) was *vatapita, vata dminant*. There was no complaint with regard to *Mutra* (urine) and *Mala* (stool) Frequency and color were normal. *Jihva* (Tongue) was *nirama* (coated suggestive of improper digestion). *Sabda* (speech) was normal *Sparsa* (touch) *samshitoshna Drk* (eyes) was functioning normal. *Akṛti* (appearance) was healthy.

Diagnostic criteria

The two main guideline used for the diagnosis of ADHD are DSM-V^[8] and DSM-V criteria is followed because of its broader spectrum.

In making the diagnosis, children should have six or more symptoms of the disorder and people above 17 should have at least five symptoms.

Table No.01.01. DRUG INGREDIENTS OF PANCHENDRIYA VARDHAN TAIL

Content	Botanical name	Content	Botanical name
Jivaka	<i>Leptidinia reticulata W&R</i>	Sharkara	<i>Sugar</i>
Rishabhaka	<i>Melaxis mucifera</i>	Anshumati	<i>Desmodium gengeticum</i>
Draksha	<i>Vitis vinifera Linn.</i>	Meda	<i>Poligonatum multiflorus</i>
Madhuka	<i>Glycrrhiza glabra linn.</i>	Vidanga	<i>Embelica ribes Burm.f.</i>
Pippali	<i>Piper longum linn.</i>	Sendhava	<i>Rock salt</i>
Bala	<i>Sida cordifolia linn.</i>	Neel kamal	<i>Nymphoea stellate</i>
Prapaundarika	<i>Nelumbo nucifera gaeris.</i>	Swadanshatra	<i>Tribulus terrastris linn.</i>
Brihati	<i>Solanum indicum linn.</i>	Rasna	<i>Pluchea lanceolata C.B.clarke</i>
Manjishtha	<i>Rubia cordifolia linn.</i>	Nidigdhika	<i>Solanum surratensa Burm.f.</i>
Twaka	<i>Cinnamomum zeylanicum breyn.</i>	Til oil	<i>Sesamum indicum linn.</i>
Punarnava	<i>Boerhavia diffusa linn.</i>	Milk	
Nidigdhika	<i>Solanum surratensa Burm.f.</i>		

Table No. 01.02. *Jivaka, Rishabhaka, Meda Neel kamala* are not available in present era, so their substitutes will be used as given below:

MAIN DRUG	SUBSTITUTE	BOTANICAL NAME OF SUBSTITUTE
Jivaka	Vidarikanda	<i>Puararia tuberosa DC</i>
Rishabhaka	Vidarikanda	<i>Puararia tuberosa DC</i>
Meda	Shatavari	<i>Asparagus recemosus wild</i>
Neel kamal	Kamal	<i>Nelumbo nucifera Gaeris</i>

TREATMENT PROTOCOL.

Duration of treatment was 21 days for *Nasya* with *panchendriya Vardhan* tail.

DISCUSSION

After completion of first course of *nasya* of *panchendriya vardhan tail*^[9] improvement in hyperactivity, also improvement in aggressive nature and mild improvement in school performance.

panchendriya vardhan tail describe by *Acharya Kashapa* to improving power of all *panchindriya*. its improve *smrutilop* (memory), also help improving strength of *indriya* and increased *smruti* (memory) *medha* (intellect) this drug is very auspicious.^[10]

According to *acharya kashayapa* this oil is mention in *kalpasthana* in *chakshu vikara*. Mostly drugs have *laghu, snigdha guna, madhur rasa, madhur vipaka, shita virya and vata pita shamaka*.

Ayurveda has duly recognized the individuality of *manas* (psyche) and *sarera* (body) and their inseparable and interdependent relationship in a living body.^[11] The following descriptions available in the classics of Ayurveda, bear proof to this statement. While defining 'Ayu it is said that 'life is the combined state of body, senses, mind and soul.^[12] Indicating the direct influence of *manas* on certain physiological functions, it is said that anger and fear could cause diaphoresis.

These descriptions enable one to conclude that Ayurveda is perhaps the earliest system of medicare to have certain clear concepts about the psychosomatics. *Manah Swaroopa*: (Concept of mind): According to *Acharya charaka*, 'that entity which is responsible for thinking is known as *manas*'. It is said to have been inherited from the previous birth and evolved from the combination of *vaikarika* and *tejasa ahankara*. It is *acetana* (inactive) by itself but gets *cetana* (activeness) from *atma* (soul). It is connected to both *jnanendriya*

sensory centres) and karmendriya (motor centres). That is why it is called Ubhayatmaka (combined psychomotor entity) Manovijnana (understanding of mind): Manas is understood by its actions which are, indriyabhigraha (sensory and motor perceptions and control), svasyanigraha (self-control), uha (speculation) and vicharya (thinking). Manas have three guna satvik guna, rajo guna tamo guna.^[13]

According to Ayurveda, psychological problems start when fundamental imbalances develop in the biological intelligence that controls all bodily processes.

- Vata imbalance contributes to anxiety, fear, mental instability and insomnia
- Pitta imbalance may give rise to anger and irritability
- Kapha imbalance may lead to lethargy and depression.^[14]

MODERN VIEW ON MODE OF ACTION

Targeting the brain via nasal administration of drugs has been studied frequently in recent years. Several studies have shown a direct route of transport from the olfactory region to the central nervous system (CNS) in animal models without prior absorption to the circulating blood.

“Nasal delivery system is capable of increasing the fraction of the drug that will reach the CNS after its administration”. Modern pharmacology understands the mode of action of a drug administered in to the body under following headings.^[15,16,17,18,19]

Route of administration - Unlike oral administration, intranasal drug administration offers rapid absorption of the drug in to the systemic blood avoiding first-pass metabolism in the gut wall and the liver.

Anatomical considerations of nose

- Cribriform plate connects the nose with the cranial cavity through its foramens.
- Nasal cavity opens into the frontal, maxillary and sphenoidal sinuses which are richly supplied with blood vessels entering in to the meninges.
- Olfactory receptor cells are in contact with the nasal cavity and the CNS and they provide a route of entry to the brain that circumvents the blood–brain barrier (BBB).^{[20][21]}

Arachnoid matter sleeve extends to the sub mucosal area of the nose along with olfactory nerve giving a direct pathway for drug entry.^[22]

Solubility and absorption - According to modern pharmacology, the drugs which are soluble in lipid medium are only passed through the 'Blood Brain Barrier'. But absorption also depends on some more factors like –

A. Concentration of the drug in solution –

When the concentration of the drug is more, the higher concentration gradient causes higher absorption.

B. Vascularity of the area – Nose is a highly vascular area. Here, the transgression of the drugs occur in two ways –

a) Entry in to systemic circulation - through the surrounding vessels

b) Direct pooling in to the intracranial region –blood through the facial vein enters the cavernous sinus in intra cranial fossa. Drug can also enter the cranium from paranasal sinuses and lymphatic path way.

C. Stimulation and Irritation – '*Stimulation*' enhances the level of activity of the specialized cells (cells specialized for specific function e.g. neurons in CNS, heart muscles etc.). '*Irritation*' is acting non-selectively, applied often for non specialized cells. Irritants stimulate associated function of the cells and there is another action called '*Counter irritants*' which increase blood flow to the site. So collectively it can be said that the drug when administered through the nasal route takes various kinds of pathways before reaching either the systemic circulation or to the intracranial region. There are various factors which are interacting and are responsible for the absorption of the drug in the nasal region, which may be the anatomical structure of the area, may be the blood supply, the draining system or it may be the chemical nature of the drug.

PROBABLE ACTION PANCHENDRIYA VARDHAN TAIL NASYA

Mostly drugs have vata pitagna and kapha vatagna properties. The drug contains mainly *Teekshna* drugs like *Vidang* (*Embelica ribes*), *Pippali* (*Piperlongum*), *nidigdhika* (*solanum surratensa* *Burm.f.*), *twaka* (*cinnamomum zeylanicum breyn.*) which are responsible for the clearing of the channels. *Vaata* is considered as the controller of the mind. All the drugs are having the *Vaata hara* property with *Snigdha* and *Ushna guna*. So the pacification of the *Vaata* also is playing an important role in the action of the drug. The *Madhooka* (*Madhooka indica*)^[23] and *Saindhava lavana* (*Potassium chloride*)^{[24][25][26]} are having *Pittahara* action. This may be helping in reducing the aggressive and agitated behaviour which is a *Pitta* dominant symptom.

Draksha (Vitis vinifera.), Bala(Sida cordifolia), Anshumati (Desmodium gengeticum), Neelkamal(Nymphoea stellate), Manjishtha (Rubia cordifolia) Swadanshatra (Tribulus terrastris), Prapaundarika,(Nelumbo nucifera gaeris.) drugs have *vata pitagna* properties

Brihati (Solanum indicum linn.) Rasna (Pluchea lanceolata), Nidigdhika (Solanum surratensa), Twaka (Cinnamomum zeylanicum), Til oil (Sesamum indicum) have *kapha vatgna* properties.

The *Saindhavalavana (Potassium chloride)* is also having the *Sookshma* property which helps the faster penetration of the drug and faster initiation of the action.^[27]

CONCLUSION

ADHD is behaviour disorder which is correlated in Ayurveda with *manas roga* (psychosomatic disorder). According to ayurveda Ayu it is said that 'life is the combined state of body, senses, mind and soul. the management of adh patient is *vatapiatashamaka* and *nasya* is most effective in *manasroga* because it s nasal medicine directly enter in shira (head). *Panchendriyavardhan* tail have mostly *vata pita shamaka* drugs and *strotoshudhikara* drugs. So *Nasya* of this tail gave extraordinary result after 21 days of procedure. Parents of the patient was surprised by improve their child condition by *ayurvedic* treatment. This treatment effect gave very promising result and improvement in patient complains, condition and quality of life.

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