



AN APPROACH TOWARDS ADHD IN CHILDREN AND ITS MANAGEMENT IN AYURVEDA - A REVIEW

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ABSTRACT:

Background: Attention deficit hyperactivity disorder is neurodevelopmental disorder characterized by problems in paying attention, excess activity, uncontrolled behavior which is inappropriate for age of child. Most commonly affects the children of age group 6-12 years. According to ayurvedic literature, *Unmada* is term for psychotic issues that encompasses many mental conditions including ADHD. So, Attention deficit hyperactivity disorder can be correlate with *Vataj Unmada* as the symptoms appeared similar. **Aim:** Critical review and analysis of the effects of various conventional Ayurveda treatment modalities in the management of ADHD. **Materials and Methods:** Classical textbook of Ayurveda, journal publications and clinical experiences were considered as the source of information. **Result:** Multimodal management approach of an Ayurveda *Deepan, Pachana, Panchakarma* treatments, *Medhya Aushadhi*, Yoga and Diet can help in preventing and resolving the condition. **Conclusion:** Ayurveda indicates that prevention of ADHD right from *Beejashuddhi* and *Masanumasika Paricharya* till birth and postnatal life. Ayurveda offers different modes of *Chikitsa* (treatment) for safe approach in management of ADHD in children. ADHD needs a long-term intervention and the improvements in the patients after each course of management may amplify steadily.

Keywords – Attention deficit hyperactivity disorder, Panchakarma, Ayurveda, *Vataj Unmada*, *Medhya Aushadhi*.

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INTRODUCTION

Psychosomatic disorder affected children are increased in pediatric clinics, out of that attention deficit hyperactivity disorder is one of them which is characterized by persistent pattern of inattention and hyperactivity as well as forgetfulness, impulsivity and distractibility. It is a developmental disorder in which the interplay of multiple genetic and environmental factors contributes to the risk for the disorder. It is a genetic and long-term condition which affects learning and behavior right through the school years and in many cases beyond into adulthood. For the management of ADHD pharmacotherapy and clinical behavioral management is advised medications indicated for ADHD include Psychostimulants e.g., methylphenidate and antidepressants. About 70-80% cases show positive response to stimulants as reduced hyperactivity, increased attention span and improved visual/motor skills. However, these agents do not address other problems, e.g., academic failure or social maladjustment^[1].

According to ayurvedic literature, *Unmada* is term for psychotic issues that encompasses many mental conditions including ADHD. Attention deficit hyperactivity disorder cannot be compared directly to any disease of ayurveda but it can be correlate with *Vataj Unmada* as the symptoms appeared similar.

According to Ayurveda, *Vata dosha* is responsible for all types of movements in the body and attention deficit hyperactivity disorder is a condition in which there is physical and mental activity. Thus, it is the result of vitiation of *Vata dosha*.

Attention deficit hyperactivity disorder is a treatable condition if diagnosed and properly treated, people with attention deficit hyperactivity disorder can reach their potential and lead happy and successful lives. A combination of *Deepan*, *Pachana*, Panchakarma treatments, *Medhya aushadhi*, Yoga and Diet will significantly enhance the quality of life of patient.

AIMS AND OBJECTIVES

Critical review and analysis of the effects of various conventional Ayurveda treatment modalities in the management of ADHD.

MATERIALS AND METHODS

Various Ayurveda classics and studies published in journals related to effect of Ayurveda drugs and therapeutic process in the management of ADHD children are reviewed and appraised.

Diagnosis of ADHD is usually made in preschool years

- 1) Inattentiveness – These children have difficulty in controlling their activity in situation that call for sitting still, e.g., Classrooms. They can only engage

themselves in brief activities and change activities frequently.

- 2) Hyperactivity – The commonest cause of parental concern is usually noticed in preschool years as excessive movements, restlessness, fidgety and shortened attention span. As preschoolers by nature have shorter attention span that improves with time, persistence of such behavior beyond 3 years of age is more reliable indicator of ADHD.
- 3) Impulsivity is closely associated with hyperactivity and often manifests as a dislike for waiting for his turn. They interrupt others in their conversations and some of their actions may be extremely dangerous.

Diagnosis – There is no specific diagnostic test for ADHD and diagnosis is exclusively clinical, based on well-defined criteria Diagnostic and Statistical Manual, Fifth edition (DSM-5)

Etiology – Exact etiology for these pathological changes is uncertain. Some important causative factors include –

- 1) Hereditary (*Beeja Dosha*) – in ADHD as 1/3rd of these cases have similar family history and concordance rate in monozygotic twins is 75-90%. Genetic studies have implicated defect in

several genes, modulating dopamine/norepinephrine action.

- 2) Environmental factors – Low birth weight, prenatal exposure to maternal smoking, alcohol or drug abuse and environmental toxins, e.g., lead, dioxins and plastic constituents have been frequently implicated.

As per Ayurveda literature, *Unmada* is a term for psychotic problems that include many mental illnesses. The symptoms of *Unmada* – *mano vibhrama*, *buddhivibhrama*, *sangyavibhrama*, *dhyanyvibhrama*, *smrutivibhrama*, *bhaktivibhrama*, *sheelavibhrama*, *cheshtavibhrama*, *aacharvibhrama*^[2]. The individual loses the power for regulating his actions and conduct according to the demand of the personal and social life. The derailment of *Mana* (thoughts/mental faculties), *Buddhi* (intellect), *Sangya* (consciousness), *Jnana* (orientation), *Smriti* (memory), *Bhakti* (attitude to the society), *Cheshta* (psychomotor activities), *Achara* (routine/rituals) are noted in the disease.

According to fundamentals of Ayurveda, Pathogenesis of any disease comprises of the vitiated *Dosha-Dushya Sammurchhana* (union). These vitiated components are manifested in full flown disease, when they exacerbate with already existing *Khaviagunya*

(structural and functional alteration of body tissues). The aggravated *Doshas* become *Unmargami* (leave their place and reach the upper channels of the body) and produces symptoms. Vitiating of *Tridoshas*, *Rajas* and *Tamas* lead to vitiating of *Manovaha Srotas*, which disturbs mental emotions and produce *Unmada*.

Yuktivyapashraya Chikitsa –

Dosha Pachana therapy or detoxification - *Agni* (Digestive fire) is the factor responsible for preventing toxins entry into the system and detoxification of the internalised toxins. In ADHD children *Agni* is unable to perform these functions properly. *Srotas* are the channels in the body which carry *Ahara Rasa*, *Doshas*, to various *Dhatus*. Extrinsic or intrinsic toxins in the system causes *Srotoavrodha* (obstruction of these *Srotas*), which results in the malfunctioning of various *Dhatus* and disturbing the internal environment of the body. As a result, *Oja Kshaya* happens in the body which leads to poor immunity, recurrent infections, and uncommon behavioral symptoms which is the result of *Manovaha Srotas Dushti*. *Mana* is the one which connects *Jnanendriyas* (sensory system), *Karmendriyas* (motor system) and *Buddhi (Atama)*. Hence disruption in the *Manovaha Srotas* leads to the abnormal and under functioning of sensory perception and motor responses. For

the proper correction of all these factors *Agni* should be managed. *Agni* ensures the proper operation of *Srotas*, detoxification of toxins; facilitate proper nutrition to *Dhatus*, proper functioning of *Manovaha Srotas* and formation of *Ojas*.^[3]

In order to stabilize *Agni* certain medication and therapies are described in Ayurvedic texts viz. *Agni Deepanam* i.e., augmentation of *Agni* through *Deepana* and *Pachana* drugs and procedure. This concept calms the stomach and digest the *Ama*. As a result, it corrects the appetite, removes *Ama* from channels and promote normal nourishing of all seven *Dhatus*. Acharya Charaka has described *Deepaniya Mahakashaya* i.e., *Pippali*, *Pippalimula*, *Chavya*, *Chitraka*, *Adarak*, *Amlavetasa*, *Maricha*, *Ajamoda*, *Bhallataka Asthi* and *Hingu* which can be used for the above purpose.

Panchakarma therapy - The protocol for ADHD is focused on removing toxins from the system, to nourish and to energize the cells. Panchakarma is helpful in the mobilization of toxin layer and excreting them from the body. *Basti* (enema), *Abhyanga*, *Shirodhara* (pouring liquids over the forehead), *Nasya* (nasal drops), *Talam* (placing herbs mixed with oils or decoctions placed on vertex of the head) and *Shaman Sneha* (intake of medicated *ghrita*) as *ghrita* is considered as one of the main

rejuvenators of the brain and brain cells are few of the therapies applicable in children. *Shirodhara* that bring changes in the electric potential of the brain compartments that leads to regularization of the neurotransmitter mechanism. However appropriate procedures should be selected based on the intellect of the physician.

Medhya Rasayana (CNS rejuvenators) - The administration of *Medhya* drugs in ADHD patients is to maintain and restores the body's harmony, improving balance between brain and nervous system. *Medhya Aushadi* enhances *dhee*, *dhriti*, and *smriti* individually

and improve coordination between various mental factors Some of the drugs applicable in these conditions are enlisted in table no. 1. And the *Ghrita* preparations most commonly used in the management of ADHD are enlisted in table no. 2

Commonly used *medhya rasayan* are as follows –

1. *Swarnaprashana*
2. *Saraswatarishta*
3. *Brahmi ghrita*
4. *Kalyanaka ghrita*
5. *Mahakalyanaka ghrita*
6. *Manasamitra vatakam*

Table no. 1 showing - Medicinal properties of *Medhya* drugs.

Sr. no.	Drug name	Latin name	Pharmacological action
1	<i>Brahmi</i>	Bacopa Monneira	Cognitive Properties, Antidepressant, Memory enhancer ^[4]
2	<i>Mandukaparni</i>	Centella asiatica	Cognitive and antioxidant properties ^[5] , Anti-nociceptive and anti-inflammatory ^[6] , Memory enhancing
3	<i>Shankhapushpi</i>	Convolvulus pleuricaulis	Effect on learning, memory and behaviour ^[7] , Anxiolytic, Brain nourishment ^[8]
4	<i>Jyotishmati</i>	Celastrus panniculatus	Effect on learning and memory ^[9] , Cognitive properties and Antioxidant effect ^[10] , Neuroprotective effect ^[11]

Table no. 2 showing - Medicinal properties of drugs used in *Unmada* as per Ayurveda

Sr. no.	Drugs	Description

1	<i>Kalyanaka Ghrita</i>	It is found to be beneficial in personality disorders, curing insanity, cough, epilepsy, anemia, itching, poison consumption, delusion, diabetes mellitus, fever, scanty semen volume, infertility, stammering speech, who desire good memory, who have poor digestive power. It bestows strength, auspiciousness, long life, complexion, fortune and nourishment ^[12] .
2	<i>Suvarnaprashan</i>	<i>Suvarnaprashan</i> is a comprehensive <i>Rasayana Chikitsa</i> , administered for physical, mental, intellectual and spiritual wellbeing of the children ^[13]
3	<i>Mahapaishachika Ghrita</i>	<i>Chaturthaka Jwara</i> (a type of recurrent fever), Insanity, Seizures by evil spirits and Epilepsy. It promotes intellect, memory and help in development and physique of children ^[14]

Yoga therapy - *Pranayam* (breathing technique), *Asanas* (postures), *Bandhas* and *Mudras* (relaxation and meditation) promotes physiological and psychological processes which can induce calm state of mind. It provides an environment which improves sensory incorporation, attention, defensiveness and increased verbal receptivity. Few research studies suggest practicing Yoga may have a positive effect on CNS like improving the wave frequencies, glucose metabolism, neurotransmitter activity and the autonomic nervous system all of which are affected in disruptive behavior^[15]. Yoga may prove to be a useful tool for children with ADHD and requires a long-time application. Few examples of Yoga procedures

which may help in ADHD include *Trikonasan*, *Veerbhrasan*, *Shahsakasana*, *Parvatasana*, *Sukhasana*, *Shavasana*, *Makrasana*, *Singh Mudra* etc.

DISCUSSION

Attention deficit hyperactivity disorder is a developmental disorder in which the interplay of multiple genetic and environmental factors contributes to the risk for the disorder. The above prevalence is sufficed to say that practicing pediatrician will definitely encounter the child with ADHD. According to Ayurvedic pathophysiology it may be a result of *Beeja Dosha* (genetic factor), *Ahara Dosha* (deprived diet), *Agni Dushti* (digestive fire disturbance), *Medha* (cognition) problems and *Vata Dushti*. Ayurveda offers different modes

of *Chikitsa* (treatment) for safe approach in management of ADHD in children. ADHD needs a long-term intervention and the improvements in the patients after each course of management may amplify steadily.

Preventive measures – Prevention of ADHD can be accomplished at three stages: before conception, during pregnancy and after birth. Creating awareness among general public regarding the role and importance of *Garbhiniparicharya* (regimen for pregnant women), *Garbhopaghatakar Bhavas* and methods like non-consanguineous marriages (premarital genetic counseling in case of non-avoidance of consanguineous marriages) can help in reducing the incidence of pregnancy complication thereby preventing development of ADHD directly by altering *Beeja Dosha*. Panchakarma aids in the removal of bodily toxins and renewal of healthy tissues happens as a result of *Rasayana chikitsa* which aids in the creation of healthy sperm and ovum.

The treatment of ADHD in Ayurveda involves procedures *Deepan Pachana* drugs may help to boost digestive fire, application of *Medhya* drugs, Yoga therapies and specific drugs, Diet regimen along with Panchakarma (especially *Basti, Shirodhara, Nasya* and *Abhyanga*) helps in alleviating *Vata Dushti*. These treatments help in pacifying the effects of *Vata dosha*, removing obstruction from channels

(*manovahastrotas*), removal of *Ama* from body and rejuvenates the nervous system. Medicated *ghrita* preparations are used in ADHD which absorbs and readily enter the brain through the blood brain barrier. *Shirodhara* induces sleep and stabilize the mind effectively reduces the condition of hyperactivity in children by reducing chemical transactions inside the brain. *Abhyanga* provides significant relief to patients suffering from anxiety and depression because these therapies have a soothing effect on the nervous system, relax tensed muscles and increase blood circulation.

Some research works conducted on ADHD are as follows-

- 1) Singhal et al (2010) conducted investigation to evaluate the increase in attention span in 43 ADHD affected children treated with different ayurvedic approaches. In their study, selected children of both sexes in the age group of 6-16 years were divided into 3 groups. In group A, 17 patients received syrup ayurvedic compound 1 (*Brahmi, Ashwagandha* and *Tagar*), In group B, 14 patients were treated with syrup ayurvedic compound 1 + *Shirodhara* with milk, and in group C, 12 patients received placebo syrup. The dose of drug was 1ml/kg body

weight and the duration of treatment was 3 months. It was observed that group B showed highly significant ($P < 0.001$) improvement in total reaction time, while in group C the change was statistically non-significant ($P > 0.10$). further it was observed that the drug and *Shirodhara* were both effective in improving the reaction time of ADHD affected children but the drug combined with *Shirodhara* was superior to the drug used alone.^[16]

- 2) Akshay Gurav et al (2022) conducted study to assess the efficacy of ayurvedic treatment protocol in the management of ADHD in children. Ayurvedic treatment like *Kosthashodhana*, *Basti*, *Shirodhara* and *Nasya* were followed and assessment was done before and after treatment and during follow ups, the treatment was found to be effective in management of ADHD.^[17]
- 3) Ragamala K C et al (2017) conducted study to the effect of *Takradhara* in attention deficit hyperactivity disorder. In their study 40 children aged 7-12 years were selected. *Takradhara* was done for 14 days and then again repeated after every 2 months for 3 consecutive sittings. In the group

statistically highly significant change ($p < 0.001$) was observed in the symptoms of ADHD.^[18]

CONCLUSION

Present review study shows that Ayurvedic management with supportive therapies provides good response in ADHD children. After understanding ADHD from ayurvedic aspects, treatment principle of *Manoroga* seems to be more appropriate. All above discussed combination of *Deepan*, *Pachana*, Panchakarma treatments, *Medhya Aushadhi*, Yoga and specific wholesome Diet, that bring changes in the electric potentials of the brain that lead to regularization of the neurotransmitter mechanism and reduce the symptoms of ADHD without causing adverse effects on growth of the body in growing stage. However, Ayurveda advocates prevention of these types of condition as more beneficial measure than managing them.

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