



MANAGEMENT OF ATTENTION DEFICIT HYPERACTIVITY DISORDER WITH AYURVEDIC INTERVENTION – A CASE REPORT

Ayurveda

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ABSTRACT

Background: This study was performed for the effectiveness of the ayurvedic treatment in the patient presented with the complaints of ADHD. A 5 years old, male patient consulted to the ayurveda hospital with hyperactive behavior associated with inattention for 1 year. **Design:** Single case report **Materials And Methods:** In this prospective case study, conducted on a subject experiencing attention deficit hyperactive disorder from 3 years, the individual was admitted to the indoor patient department of *kaumarbhritya* over a period of months, the subject was assessed every 15 days. The intervention involved the administration of panchkarma therapy along with oral medications, the symptoms reduce progressively, and there as an alleviation of associated symptoms. Additionally, the subject showed improvement in diagnostic parameters and reported an enhanced sense of well-being. **Results:** DSM-5 Criteria showed ≥ 5 symptoms per category; persisting at least 6 months; present prior to age 12; several symptoms are present in ≥ 2 settings and these symptoms reduces the quality of social, academic, or occupational functioning, which was corrected after treatment, increased attention span along with normal behavior without any hyperactivity. After 30 days, a significant improvement was noted in all clinical features. No any unwanted effects were noted during the study period. The case was managed without encountering any adverse effects, following the treatment regimen for vitiated Manas doshas.

KEYWORDS

Panchkarma, Attention deficit hyperactive disorder, Kaumarbhritya, Manas doshas

INTRODUCTION

Attention deficit hyperactivity disorder (ADHD) is a neurobehavioral disorder of childhood^[1,2] which interferes with social, academic and occupational functioning and it is characterized by executive dysfunction occasioning symptoms of inattention, hyperactivity, impulsivity, an emotional dysregulation that are excessive and pervasive, impairing in multiple contexts, and otherwise age-inappropriate.

ADHD symptoms arise from executive dysfunction and emotional dysregulation is often considered as core symptom. Difficulties in self-regulation such as time management, inhibition and sustained attention may cause poor professional performance, relationship difficulties and numerous health risks, collectively predisposing to a diminished quality of life. This mental state can be related to risks such as for internet addiction and types of offending behavior.

ADHD represents the extreme lower end of the continuous dimensional trait (bell curve) of executive functioning and self-regulation, which is supported by brain imaging and molecular genetic studies. Although people with ADHD struggle to persist on tasks with temporally delayed consequences, they may be able to do on tasks they find intrinsically interesting or immediately rewarding, this is known as hyperfocus or perseverative responding. In ayurveda, disorders related to psychiatric and behavioral disturbances are mentioned under the chapter of Unmada. So, according to the signs and symptoms it can be co-related with Unmada. As modern medicine has failed to provide a cure for a variety of health problems, mainly are behavioral or psychiatric disorders of childhood. Many of these problems are of transient nature and often go unnoticed. The incidence of ADHD in school-going children in the west and India ranges from 5%-10%. Two to four times more boys than girls are affected. It often continues into adolescence and adulthood and can cause a lifetime of frustrated dreams and emotional pain.

A number of researches show that children with ADHD have slower reaction time. The cerebellum is one of the areas of the brain concerned with making quick responses and so a poor reaction time is consistent with the theory that a weak or underdeveloped cerebellum is partly to blame.

In view of the poor outcomes of ADHD-affected children, Ayurvedic treatment like Shirodhara, Nasya were followed for their abilities to improve the reaction time in ADHD and also to achieve a homeostasis of the vitiated doshas in the affected child.

Patient Information

A 5 years old, male child, weighing 16 kg, presented at the outdoor patient in the hospital with the complaints of hyperactive behavior associated with inattention for the past 2 years. At the age of 2 years, the child had a history of delayed milestones. He was having no eye contact while talking, his mother started noticing her child's behavior which is not the same as other child of same age. He doesn't make any eye contact with anyone and missed some milestones such as waving bye-bye, speaking one line sentence or blabbering as mentioned age. He only speaks some disyllabic words such as papa, ganga and after 1 year, at the age of 3 he even stops speaking those disyllabic words also. At the age of 3, he stopped speaking, he had regression of speech. At the age of 3, they came first time for seeking treatment for her child. At that time, we gave him some herbal medicines and started occupational therapy. We encouraged her mother to send her child to playschool where he will meet other children of his age group and will start communicating, playing with them and also encourage her mother to give her child some special time for daily playful activities in which we suggested her to make time for him in which try to communicate with her child, play some games in which communication is needed. After 3 months for child's regular checkup, her mother had given very positive response as he had started speaking again and making eye contact while speaking. But at the age of 5, when he went to school, his teacher started noticing some inattentive behavior in class and never listen to anyone, talks excessively, can't sit properly on one place, can't wait for his turn. At this time, they visit again to hospital for his checkup for his hyperactive behavior and inattention. He prefers a flexitarian diet. Bowel habit was altered and urine output was normal according to patient's attendant. There was no history of any head injury. The patient's main concern was hyperactive behavior in which patient was not sitting at one point, moving from one place to another place continuously without any attentive behavior associated with some continuous blabbering and all of which were increasing day by day.

Clinical Findings

A Physical examination of the patient showed that he is an average-built and moderately nourished child, with a weight of 16 kg and with a heart rate: 98bpm and respiratory rate of 26/min. No lymphadenopathy. A respiratory examination revealed symmetrical chest which is bilaterally clear. A cardiovascular examination revealed no major abnormality on examination with normal S1 S2 Heart sounds. The per abdomen examination was soft, non-tender. CNS examination: MRI Brain and CT Head -appears normal

Ayurveda examination revealed that his Sharirika Pakriti (Body

constitution: VataKaphaja), and Mental constitution were Raja and Tamah, Sara (Excellence of Dushya or tissue elements), Samhanana (Compactness of tissue organs), Pramana (Anthropometry) were Madhyama, Aharsakti (Capacity of intake of food) examined by Abhyvahan Shakti and Jarana Shakti were Madhyam.

Timeline

Assessment of ADHD has done first with its symptoms on the first visit and intermittent monitoring was done daily, for the next 15 days. Assessment was done before and after treatment and during follow ups. The follow up was done after fortnight of discharge of patient.

Diagnostic Assessment

The assessment criteria were based on the DSM-5 Criteria ^[3], mentioned in table 1.

Therapeutic Intervention

After the case conceptualization, the patient was put on 1st sitting of panchkarma therapy along with oral medications for 15 days. Panchkarma therapy was started with shirodhara and nasya. The given treatment was found to be effective in management of ADHD. Before and after treatment is mentioned in the following table 4.

Follow Up And Outcome

The patient was encouraged and given treatment after being hospitalized for 15 days. Assessment of the patient for its symptoms has done according to objective and subjective parameters (grading criteria mentioned in table 4). During 1st sitting, there was no significant improvement in the clinical features. But after getting discharge from 1st sitting, patient's symptoms start improving. Patient's attendant was happy about seeing the results after 1st sitting and patient's clinical features has declined about to 70%-80%. Next follow up is after 15 days and after 2nd sitting, patient's clinical features had been improved according to DSM-5 Criteria. ^[3]No adverse response has seen throughout treatment, the quality of sleep, appetite, urine output was improved along with symptoms of ADHD during treatment.

DISCUSSION

ADHD affects teens and children and can continue in adulthood. In children's ADHD is the most commonly diagnosed behavioral disorder. Many researchers have been carried out but there has been no precise cause to suggest why person suffers from ADHD. Although the exact cause behind this disorder is not known, the following things have been determined to be the reason why someone suffers from ADHD, they can be hereditary causes, brain's chemical imbalance, brain injury or brain disorder (damage to frontal lobe) poor nutrition, infection, smoking, drinking and substance abuse during pregnancy, toxins which affects brain development.

ADHD disorder causes many negative effects on children such as social isolation, negative impact of child's relationship with family and other children, low job performance, inability to make a bond with others, motor vehicle accidents, family disruption and stress, antisocial personality disorder, risk of casual injuries, quite challenging for those who have to get engaged in day-to-day activities with them, so they need ADHD treatment as soon as possible. The current conventional treatment involves occupational therapies, speech therapies, listening therapies, audio-visual therapies, vibrant lifestyle which includes proper sleep and nutrition, by maintaining discipline, making proper time table, task management with a healthy environment. The current conventional treatment involves long course of treatment.

Ayurvedic principles have shown convenient, safe and least expensive in comparison to the conventional method of treatment. Herein, the drugs, dietary, and lifestyle modifications were chosen on the basis of Nidanam (causative factors of disease), involvement of dominant dosha (Vata-kapha), and nature of vyadhi (disease). In the literature, Ayurveda Classics has a line of treatment of Vataj Nanatamaj Doshas.

Shirodhara: Shirodhara is an Ayurveda therapy described by Vagbhata in Astang hridaya. ^[4] It is also described in other books of panchkarma ^[5] The etymology of the word Shirodhara is from 'shira= head' and 'dhara=a steady flow'. In shirodhara, medicated oil, milk, buttermilk or kwath are poured over the forehead of the patient in the form of a regular stream from a height of precisely 3.14 inches (as mentioned in Dharakalpa ^[6] of Sahasrayogam) and with a fixed oscillatory movement. It is a form of Snehana procedure. The treatment is for 45 minutes/day over 2 weeks, in every sitting. This procedure induces a

relaxed state of awareness and results in a dynamic psycho-somatic balance. Taila dhara is one of the type of shirodhara which is considered specifically effective in various disorders where vata dosha play a predominant role. The pressure of oil on to the forehead creates a vibration and then the oil saturates the forehead and scalp and penetrates into nervous system. Gentle pressure and soothing warmth of the oil allow the body, mind and nervous system to experience a deep state of relaxation.

Looking at ADHD from this perspective, we can use Ksheerabala taila and Brahmi taila for shirodhara. In the pathogenesis of this disease we can assume that vitiated vata dosha are the main cause, vata predominant tridoshaj vyadhi.

In the first sitting, shirodhara was done by Ksheerabala taila. Constituents of Ksheerabala taila are bala (sida cordifolia), go-ksheera (cow milk) and tila taila (sesame oil) as mentioned in table 2. Bala possess Madhur rasa and vipaka, madhur ras mitigates both vata and pita dosha, it is dhatunaamprabalam (strength to the tissue) and is good for sense organs and pleasing to mind (shadindriyaprasadam). Bala contains ephedrine and pseudoephedrine, ephedrine is known to stimulate CNS. Snigdha and guru guna of tila taila decreases ruksha of vata and with the help of ushna guna, it alleviates vata. It contains alkaloids which are CNS stimulants, go-ksheer is having Madhur rasa, sheetavirya, mridu, snigdha, bhahala, shlakshana, guru, manda and prasana qualities, these 10 qualities are similar to that of ojas. it possess rasayana that is it rejuvenates the whole body and considered to be jeevaniya.

In second sitting, shirodhara was done by brahmi taila. Constituents of brahmi taila are Brahmi (Bacopa monnieri), Amalki (emblica officinalis) and tila taila (sisema oil). Brahmi taila will be useful in breaking the pathogenesis of this disease because brahmi itself is a medhya, rasayana ^[7] and vatashamaka which is specifically used in manoroga (psychiatric disorders). Brahmi taila has bhrighaniya, Medhya, rasayana, medohara, chittotwegahara and hrudya properties. Shirodhara is also a purifying and rejuvenating therapy designed to eliminate toxins and mental exhaustion and pacifies the aggravated Vata dosha in shira and balancing the prana vayu and vyana vayu around the body.

After treatment – cover the head and rest for at least one hour and wait for 2-3 hours before rinsing the oil out of hair to allow for the full effect of treatment. Avoid cool breezes, hot sun, exercise and travelling for rest of the day.

Probable mode of action of shirodhara by Brahmi tail – in shirodhara, a particular pressure and vibration is created over the forehead and this vibration is amplified by hollow sinus present in the frontal bone. The vibration is then transmitted inwards through the fluid medium of cerebrospinal fluid (CSF) and thus this vibration along the little temperature may activate the functions of thalamus and basal forebrain, which then brings the amount of serotonin and catecholamines to normal stage. Due to continuous and rhythmically pouring of Tailadhara also lead to state of concentration and enhance the release of serotonin and produces chemical substance like acetylcholine.

Brahmi tail is used for Shirodhara. Taila itself is having the Vatahara, Sukshma and Snigdhatva properties which helps in proper facilitation and sound connection of Indriyas and Vishaya which was deranged earlier by aggravated vata dosha. Due to its Sukshma guna it easily penetrates in the deep channels inside the body. Active components of taila penetrates into the circulation via forehead and produces Vatahara effect and it also produces lubrication and nutrition. Improvement in circulation to the hypothalamus also improves the function of autonomic nervous system as its stimulation during stress causes many physiological disturbances.

By affecting in all these ways, Shirodhara by Brahmi taila can probably give better results in ADHD.

Nasya: ^[8]

“Nasa hi shirsodavarm” As Vagbhat and Charak mentioned here, Nasa is the main channel for Shira (head), from where we can manage CNS problems.

From nose we can administer medicines, which helps to treat the

various disorders affecting CNS.

Nasya is an Ayurveda therapy where a mixture of medicated oil is administered to the patient through the nose. As the liquid passes from the nose to the head helps clean the channels and brings benefits. It is considered beneficial for the central nervous system and is known to have calming effects on the mind. It may help to improve oxygenation, which aids in better functioning of the brain and can therefore aid in smoother response time.

Here we have done Nasya with Brahmi ghrita^[9]. Brahmi ghrita has a vata balancing property which helps in reducing the symptoms of ADHD, which is a Vata-dominant tridosaja disease of manovaha strotas. Brahmi ghrita has Medhya, rasayana and balya properties. According to Charaka, constituents of brahmi ghrit are Brahmi swarsa, Vacha, Kushta, Shankhpushpi, Puarana Ghrita. The rasa, guna, virya, vipak and karma of Brahmi Ghrita are mentioned in table 3. Brahmi, the main ingredient of Brahmi Ghrita is a popular Medhya drug referred in Ayurveda classics. Recent advances have established the action of bacoside, one of the constituents of Brahmi in various psycho-neurological disorders.

CONCLUSION

Ayurveda has many potent herbs for treating mental conditions such as ADHD. In the present case, the impact of the treatment given to the patient of ADHD was seen with a drastic outcome. The entire ayurvedic treatment methodology selected for this situation indicated Panchkarma therapy. Oral medication along with Panchkarma therapy are effective without any harmful effects. To further explore this, conducting long term research with a larger sample size using advance investigations and techniques would be more beneficial. This will ensure the safety of the intervention.

Conflicts Of Interest - There are no conflicts of interest.

Consent - Taken

Table 1	
DSM-5 CRITERIA FOR ADHD	
INATTENTION Age 17 and younger; six or more of these symptoms must be present for at least 6 months; be consistent with the child's development level, and have a negative effect on social and academic activities. To be confirmed, the following must occur often	HYPERACTIVITY AND IMPULSIVITY Six or more of these symptoms must be present for at least 6 months; be consistent with the child's development level, and have a negative effect on social and academic activities. To be confirmed, the following must occur often
A. Fails to pay close attention to details. B. Has trouble sustaining attention. C. Doesn't seem to listen when spoken directly. D. Fails to follow through on instructions and fails to finish schoolwork or chores. E. Has trouble getting organized. F. Avoids or dislikes things that require sustained focus. G. Loses thing frequently. H. Easily distracted by other things. I. Forgets things.	A. Fidgets with hand/feet or squirms in chair. B. Frequently leaves chair when sitting is expected. C. Runs or climbs excessively D. Trouble playing/engaging in activities quietly. E. Acts "on the go" and as if "driven by a motor" F. Talks excessively. G. Blurts out answer before questions are completed. H. Trouble waiting or taking turns. I. Interrupts or intrudes on what others are doing.

Table 2

	DRAV YA	RASA	GUNA	VIR YA	VIPAK A	DOSHAGNAT A
1.	BALA MOOLA	Madhura	guru, snigdha,	Sheeta	Madhura	Vatahara
2.	TILAILA	Madhura Kashaya tikta (anurasa)	Guru Snigdha, Sukshma	Ushna	Madhura	Balances vata and kapha dosha, srotovishodhan (Ch.su.)
3.	GOKSHIRA	Madhura	Mrudu, snigdha, picchila, bahala,	Sheeta	Madhura	Vatapitta shamaka

A		guru, prasana, manda (charaka) Alpabhishyanda (sushruta)			
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Table 3

	DRUG	RASA	GUNA	VEERYA	VIPAKA	KARMA
1.	Brahmi	Tiktha	Laghu	Sheeta	Madhura	K P hara
2.	Vacha	Katu, tiktha	Laghu, tikshna	Ushna	Katu	K V hara
3.	Kushta	Tiktha, katu	Laghu, ruksha, tikshna	Ushna	Katu	K V hara
4.	shankhpushpi	tiktha	Snigdha, picchila	Sheeta	Madhura	Tridosha hara

Table 4

PATAMETER	BEFORE	AFTER	% RELIEF
HYPERACTIVITY	Present with all parameters	1-2 parameters	80%
IMPULSIVITY	All parameters	Nil	100%
INATTENTION	All parameters	Nil	100%

Data Showing Parameters Of Adhd Before And After Study

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