

Management of Autism Spectrum Disorder (ASD) in Children through Multimodal Ayurveda Treatment Protocol: A Case Study

Dr. Shweta Choudhary^{1*}, Dr. Swapnil C. Raskar²

¹2nd Year PG Scholar, Department of Kaumarbhritya, Parul Institute of Ayurved, Parul University, Vadodara, Gujarat, India

Email: 2402022260004@paruluniversity.ac.in

²Professor & HOD, Department of Kaumarbhritya, Parul Institute of Ayurved, Parul University, Vadodara, Gujarat, India

Email: neonatecare22@gmail.com

*Corresponding Author: Dr. Shweta Choudhary, 2nd Year PG Scholar, Department of Kaumarbhritya, Parul Institute of Ayurved, Parul University, Vadodara, Gujarat, India

Email: 2402022260004@paruluniversity.ac.in

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ABSTRACT:

Background: Autism Spectrum Disorder (ASD) is a neurodevelopmental disorder affecting social interaction, communication, and behavior. In Ayurveda, its features resemble *Unmada*, characterized by disturbances in cognition and behavior.

Objective: To evaluate the effect of Ayurvedic management in a 13-year-old boy with ASD who showed minimal improvement with conventional therapy.

Methods: The patient presented with insomnia, hyperactivity, poor attention, repetitive speech, and aggression since age three. Treatment included *Manasmitra Vati*, *Saraswatarishta*, *Bala Taila Abhyanga*, *Matrabasti*, *Shirodhara* with *Mansyadi Kashaya*, and *Pratimarsha Nasya* for 7–30 days.

Results: Improvements were observed in sleep, attention, speech, and reduction of hyperactivity and aggression, without adverse effects.

Conclusion: Ayurvedic multimodal therapy may serve as supportive care in ASD by promoting mental stability and balancing Vata.

Keywords:

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INTRODUCTION: Autism Spectrum Disorder (ASD) is a neurodevelopmental disorder characterized by impaired social interaction and repetitive, restrictive behaviors, usually diagnosed before three years of age^[1,2]. Symptom severity varies, but communication is universally affected^[3]. Global prevalence ranges from 1.09 to 436 per 10,000, with a male-to-female ratio of approximately 4:2^[4].

In Ayurveda, ASD resembles *Unmada*, where mental faculties such as *Manas* (mind), *Buddhi* (intellect), *Smriti* (memory), and *Chesta* (behavior) are affected. Key features of *Unmada*—*Dhivibhrama* (perverted intellect), *Satvapariplavach* (psychic agitation), *Adheerata* (impatience), *Abadhvakyatam* (incoherent speech), and *Hridaya shunyata* (blockage of thought)—parallel ASD symptoms. Its etiology involves both genetic and environmental factors. According to Ayurveda, causes (*Nidana*) include intake of incompatible or unclean foods, mental

trauma, physical strain, gene alterations (*Beeja dosha*), and spiritual disturbances^[5].

TABLE NO.01 Clinical features of autism & their relation with *Doshas*:

S. No.	Clinical Feature	Associated Dasha
Social Domain:		
1	Difficulty in verbal as well as non-verbal communication	Vata ^[6]
2	Limited ability to establish social or emotional interactions with caregivers	Vata ^[7]
3	Inclination toward playing alone rather than with peers	Vata ^[7]
4	Reduced or inconsistent eye contact	Vata

Language Domain:		
5	Delayed development of speech and language skills	Vata ^[6]
6	Difficulty understanding and processing language	Vata ^[6]
7	Fluent speech containing meaningless or incomprehensible words	Vata ^[6]
Behavioral Domain:		
8	Appears unresponsive to sounds despite normal hearing	Vata ^[6]
9	Frequent irritability	Vata ^[6]
10	Persistent unhappiness or low mood	Vata ^[6]
11	Hyperactivity and impulsive behavior in certain children	Vata ^[6]
12	Repetitive motor behaviors such as hand flapping, spinning, or toe walking	Vata ^[7]
Neurological and Cognitive Domain:		
13	Neurological abnormalities, including seizures	Vata ^[6]
14	Exceptional abilities or extraordinary talents observed in a few children	Vata–Kapha ^[7]
15	Intellectual disability reported in approximately 50–70% of affected children	Vata ^[8]
16	Disturbed sleep pattern, particularly during the first year of life	Vata ^[9]

This case study involves a 13yrs old male child living with ASD. He was diagnosed with ASD at the age of 3yrs. The patient came to the hospital with complaints of insomnia, poor concentration power, aggressive behavior & repetition of words and was treated promptly by oral medication and Panchkarma procedures after taking proper consent/assent by the parents of the child.

MATERIALS AND METHODS USED:

CASE DISCRIPTION: An adolescent male patient, 13 years old with upper middle class socioeconomic status and Hindu religion came to OPD of Dept. of Kaumarbhritya for Ayurveda management at Our Institute.

CHIEF COMPLAINTS:

- Unable to sleep at night since 2-3yrs of age
- Poor Concentration since 2-3yrs of age

- Not speaking in sentence form since childhood
- Aggressive behavior since 2-3yrs of age
- Repetition of words since 2-3yrs of age
- Abnormal hands movement since 2-3yrs of age

PRESENT HISTORY: A male child, born post-term via LSCS in Bihar with a birth weight of 3.8 kg, achieved normal milestones until age three. After that, he developed poor sleep and appetite, aggression, and repetitive speech. He was diagnosed with ASD and had received various treatments with minimal improvement before presenting to this hospital for further management.

PAST HISTORY: Not significant.

TREATMENT HISTORY: Patient taken allopathic treatment and behavioral therapy for several months since the age of 3 years on and off from various doctors but discontinued due to not getting any proper relief.

BIRTH HISTORY: LSCS, Cried immediately after birth, birth weight- 3.8kg, birth order- 2nd child born out of non- consanguineous marriage. Child has breast fed exclusively till the age of six months. No history of neonatal convulsions or any neonatal illness.

FAMILY HISTORY: Not significant.

DEVELOPMENTAL HISTORY:

- Head holding at 2months of age
- Neck holding at 3months of age
- Rolling over at 4months of age
- Sitting without support at 7months of age
- Walking without support at 15months of age
- Saying monosyllabic words after 1.5 years of age
- Saying bi syllabic words after 2.5 years of age

EXAMINATION:

- Vitals were stable and within normal limits
- CVS, RS, GIS and GUS shows no any abnormality
- CNS examinations reveal that he was conscious, hyperactive, following oral commands, poor eye contact.
- ISAA SCORE Assessment was also done.

THERAPEUTIC FOCUS AND ASSESSMENT:

TABLE NO.02 [Multimodal Ayurveda Treatment Protocol:^[20,21,22,23]]

DATE	DRUGS	DOSE	ANUPAN A	DURAT ION
20.11. 2024	Manasm itra Vati	01 tab HS	Saraswata rishta 10ml with double amount of	30 days

			water	
	<i>Bala Taila</i> for <i>abhyang arth</i> and <i>Matrabasti</i>	30ml for <i>matra basti</i>	-	07 days
	<i>Mansyadi Kashaya</i> for <i>Shirodhara</i>	-	-	07 days
	<i>Panchendriya vivardhan taila</i> for <i>Pratimarsh Nasya</i>	2-2 drops in each nostril	-	21 days

TABLE NO.03 RESULTS:

ISAA SCORE ASSESSMENT:		
Before treatment		After treatment
121		105
Parameter	Observed Outcome	Time of Improvement
Hyperactivity	Noticeable reduction in hyperactive behavior	After the 7th day of <i>Shirodhara</i> and <i>Matrabasti</i> intervention
Sleep pattern	Improvement in sleep quality with consistent, restful sleep	Between the 5th and 7th days of treatment
Speech and Concentration	Enhanced speech clarity and better attention/concentration	Observed after almost 15 days of intervention period
Aggressive Behavior	Mild decrease in aggressive tendencies	Gradual improvement during the treatment period

DISCUSSION:

Manasmitra Vati: *Sarva manodoshahara, Buddhi, medha pratibha, vakshakti, kavyasakthi vardhaka, prabala unmada nasaka (Sahasrayoga).* *Manas Mitra Vati* acts in *Manas Rojas* by utilizing a blend of classical Ayurvedic herbs and minerals that target the *Manovaha srotas*, the subtle channels of the mind. The ingredients are prepared using traditional

Ayurvedic techniques to enhance their effectiveness and absorption. This formulation helps regulate neurotransmitter function, promotes mental calmness, improves clarity and focus, and supports emotional stability. It is particularly beneficial for individuals facing mental fatigue, stress, or overexertion^[10].

Saraswatarishta: Consisting *medhya rasayana* and helps in managing acute anxiety, fatigue, insomnia, partial loss of memory, low grasping power, and slurred speech. Also it acts as *deepana* and *pachana* and helps in digestion of *Aama*. Some of the ingredients in *Saraswatarishta* show potential in the prevention and management of neurological disorders. The identified targets play key roles in disease development. Network analysis using Cytoscape revealed strong interactions between the selected phytochemicals and these targets. Important targets include ALOX5, GSK3B, SLC9A1, CASP8, PTGS2, PRKCD, and TRPV1, with nine phytoconstituents linked to one or more of them^[11].

Bala Taila: *Bala Taila* is well-known Ayurvedic oil used especially in managing *Vata* disorders. The herb *Bala (Sida cordifolia)*, a perennial plant from the Malvaceae family, is valued for its rejuvenating, strength-promoting, fertility-enhancing, lactation-supporting, and vitality-boosting properties. *Charaka* and *Sushruta* classify it under groups that nourish the body, promote tissue growth, support reproduction, and pacify *Vata*.

Modern research highlights its wide range of pharmacological effects, including benefits for the cardiovascular and nervous systems, along with anti-inflammatory, analgesic, antipyretic, hypoglycemic, antiulcer, and hepatoprotective actions. It has also shown anti-HIV activity. Experimental studies in rats demonstrate that extracts of *Sida cordifolia* provide neuroprotective, antioxidant, and anti-inflammatory effects against quinolinic acid-induced neurotoxicity, with results comparable to standard drugs^[12,13].

Sarvanga Abhyanga: According to Ayurveda, *Abhyanga* (therapeutic oil massage) helps balance *Vata dosha* due to the oily (*snigdha*) and warm (*ushna*) qualities of the oil. By reducing *Vata*, it also moderates the *Raja* aspect of the mind, which is associated with stress, anger, and excessive thinking, thereby improving concentration and supporting mental health (*Manasik Swasthya*). As per Acharya Charaka, *Vata* governs the mind, so normalizing it through *Abhyanga* helps maintain mental balance.

Acharya Vagbhata describes *Abhyanga* as *Pushtikar*, meaning it nourishes both the body and mind. The *snigdha* property controls *Raja guna*, while the *ushna* property reduces *Tama*, both of which are considered mental doshas. Additionally, *Abhyanga* enhances *Satva guna*, further nourishing the mind and promoting overall mental well-being^[14].

Nasya with Panchendriya vivardhan taila: In Ayurveda, the nose is considered the entry point to the head, and *Nasya Karma* helps remove imbalanced doshas from the upper body, promoting proper brain and overall body function. Modern explanations of nasal drug action show similarities with Ayurvedic concepts.

Drug absorption occurs through areas comparable to *Sringhataka Marma*, such as the olfactory mucosa, trigeminal nerve receptors, and the cavernous sinus. The drug then circulates via pathways that parallel *Prana* and *Sira Marma*, including olfactory and trigeminal neural routes and blood circulation and crosses the Blood Brain Barrier.

The effects target different levels: the limbic system (mental/psychic level of *Prana*), trigeminal sensory regions (sensory level), and systemic circulation (physical level of *Prana*)^[15]. Use of this oil is mentioned in *Kashyap Samhita* by *Acharya Kashyap* in pediatric patients^[16].

Matrabasti: ASD is considered a *Vata*-predominant disorder in Ayurveda, and **Basti Chikitsa** is regarded as an ideal treatment, acting as '*Ardha Chikitsa*' for all diseases. **Matra Basti**, the administration of a small quantity of medicated oil rectally, nourishes the colon, pacifies *Vata*, and modulates the enteric nervous system, supporting gut-brain communication and promoting mental calmness^[17].

Shirodhara :

In Ayurveda, the head (*Uttamanga*) is the seat of all sense organs (*Indriyas*) and closely linked with the mind. Shirodhara strengthens *Prana* and the *Indriyas*, restoring balance in cases of psychological disorders. Imbalances in *Prana*, *Udana*, *Vyana Vayu*, *Sadhaka Pitta*, and *Tarpaka Kapha* can cause stress and tension, which Shirodhara helps normalize through its mechanical and therapeutic effects.

Therapeutic Action of Medicated Oils-

Oil used in Shirodhara has high lipid solubility and long contact duration, enabling effective absorption through the thin scalp skin, hair follicles, sweat ducts, and capillaries. Warmth and massage enhance local circulation, further improving dermal absorption. Essential oil molecules penetrate the epidermis and enter systemic circulation, contributing to therapeutic effects.

Procedural Mechanism-

The continuous flow of oil from a specific height converts potential energy into kinetic energy, generating momentum that stimulates nerve impulses and modulates brain activity. Warmth induces mild vasodilatation, improving cerebral blood flow, while constant pressure and vibration modulate autonomic nerve function, reduce CNS activity, lower cortisol and adrenaline levels, and promote relaxation.

Marma and Neuro-Endocrine Effects-

Several vital points (*Marma*) on the forehead—such as *Sthapni*, *Utshepa*, *Avarta*, *Shankha*, and *Apanga*—are associated with mental and endocrine regulation. Stimulation of *Sthapni Marma*, located near the pituitary and pineal glands, may indirectly regulate hormonal balance, relieve stress, and improve psycho-somatic health^[18].

Mansyadi Kashaya: The behavioral despair test evaluates antidepressant activity, with immobility reflecting passive coping under stress. In this study, a single dose of *Jatamansi* showed significant effects, while chronic administration of all three ingredients and the formulation reduced behavioral despair in mice, likely via serotonin reuptake inhibition or MAO blockade. Chronic fatigue syndrome involves HPA axis dysfunction, hypo-cortisolism, and altered catecholamine and serotonin metabolites. Reserpine-induced ptosis and sedation result from neurotransmitter depletion, which the test drugs mildly counteract. The polyherbal combination of *Jatamansi*, *Ashwagandha*, and *Parasika Yavani* likely acts through multiple active compounds contributing to CNS and antidepressant effects.^[19]

CONCLUSION: Ayurvedic interventions show promising potential in the supportive management of ASD through a holistic approach aimed at balancing doshas and improving overall well-being. In this case, a personalized regimen combining oral medications and therapeutic procedures effectively reduced hyperactivity, sleep disturbances, poor concentration, aggression, and repetitive speech, without any adverse effects. Early diagnosis and timely intervention, supported by a multidisciplinary approach, are crucial for better outcomes. Early implementation of therapies such as *Abhyanga*, *Nasya*, and *Shirodhara* may enhance social interaction, behavioral regulation, and language development during critical phases of brain maturation. Continued research is warranted to further validate and optimize integrative therapeutic strategies for ASD.

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