

AUTISM SPECTRUM DISORDER(ASD) MANAGEMENT THROUGH MULTIDISCIPLINARY APPROACH - A CASE REPORT

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ABSTRACT

Autism spectrum disorder (ASD) is a neurodevelopmental disorder characterized by social communication deficits and other behavioural issues. Autism, escalating as a global health concern, has yielded substantial discoveries in the past years. This case presents a comprehensive review that summarizes the progress in the etiology, diagnosis, and therapy of autism in children. In Ayurveda, ASD is not defined as a single disease. *Manovaha srotodushti* together with *Tridosha dusti* is the basic cause of ASD. A 5 years old male child was presented with the complaints of struggling with making and maintaining eye contact, unable to express his own emotions, have limited speech, was flapping his hands, have specific interest in toys and shows over sensitivity to sounds and light. Child have poor memory and high anxiety. He is habitual of toe walking, self-harming behavior.

Ayurvedic treatment and *Pathya krama* (congenial diet and habits) with collaboration with Speech and Language therapy and Occupational Therapy resulted in considerable relief and management of severity of symptoms with satisfactory outcomes in present ASD case.

KEYWORDS: Autism Spectrum Disorder, Neurodevelopmental disorder, *Manovaha Srotodushti*, Speech and Language therapy, Occupational Therapy

INTRODUCTION

Autism is a disorder of neural development that is characterized by impaired social interaction and communication, and by restricted and repetitive behaviour. About 1 in 31 (3.2%) children aged 8 years has been identified with ASD according to estimates from CDC's ADDM Network¹. ASD was 3.4 times as prevalent among boys (49.2) than girls (14.3)².

The number of people known to have autism has increased dramatically since the 1980s, partly due to changes in diagnostic practice; the question of whether actual prevalence has increased is unresolved.

Branding the children as autistics is not going to help them in a chaotic world like ours and would instead lead to further deterioration of their simple life. On the other hand, autism, especially those affecting the toddler or younger child, can be managed effectively through the rational utility of certain Ayurvedic drugs and treatment procedures coupled with speech and Language therapy, Occupational Therapy. This management is truly based on a sound understanding of the condition with ayurvedic principles.

Clinical features of ASD found resemblance with the disease entity *Unmada* mentioned in

all the major *Ayurveda* classics. According to *ayurveda* the states of health and disease are determined by the relative presence of the bodily humors (vata, pitta and kapha) since the formation of the embryo in the womb³. A range of dietary and environmental factors later can influence these states to develop and maintain the state of health or disease.

Ayurveda systems of medicine possess wealth of herbal formulations and *Panchakarma* procedures that can efficiently address the escalating prevalence of ASD. Adopting *Unmada chikitsa* is very pacifying in the management, which can target the higher centre of brain in order to manage the core features of ASD.

Support of *ayurveda* within a multidisciplinary framework not only enriches the therapeutic process but also significantly contributes to the holistic development of children with ASD.

This case report is only an example of ASD case where remarkable improvement was found in the condition by adopting *Ayurvedic* management with collaboration with Speech and language Therapy and Occupational Therapy.

CASE REPORT

HISTORY:

A 5 years old male child was presented with the complaints of struggling with making and maintaining eye contact, struggling with to express his own emotions, limited speech, hand flapping, Specific interest in toys, over sensitivity to sounds and light, poor memory, toe walking, high anxiety, self-harm, hyperactivity and constipation. He was Hindu by religion and was the first child born to an Upper class, literate, non-consanguineous parents.

HISTORY OF PRESENT ILLNESS

The parents were struggling to conceive and

after six years they conceived this child. The age of mother and father at the time of gestation was 32 and 35 years respectively. Mother was diagnosed with Gestational Diabetes. She has gain near about 18 kgs of weight during pregnancy. Blood group of mother, father and child was B+ve, O+ve and B+ve respectively. Because of fetal distress, LSCS was done at Full-term. The baby cried soon after birth, and birth weight was 3.3 Kg. The mother and baby were discharged from hospital on the fifth day after delivery. No other relevant post-natal events were reported. As months passed away, parents observed child's poor developmental milestones. At the time of Vaccination visit, Parents discussed the case with their pediatrician and were referred to a Child Psychologist. He was diagnosed as having moderate ASD. The child was identified to have poor IQ level and so was admitted to a special education unit.

HISTORY OF PAST ILLNESS

The child had complaint of constipation more frequently.

DEVELOPMENTAL HISTORY

Delay in Gross motor, Fine motor, and Social and Language skills were noted.

IMMUNIZATION HISTORY

The child was immunized in Private Hospital as per schedule

DIETETIC HISTORY

The child was exclusively formula fed up to six Months. Weaning started at sixth months. Presently the child takes lots of junk and fast food. Also having regular foods including grains, rice, pulses, fruits, etc.

FAMILY HISTORY

There was no relevant history of family.

PERSONAL HISTORY

Diet was non-vegetarian and child has moderate appetite. Child frequently passage

hard stool. Micturition was normal. But toilet training was not attained and so has complaints of soiling of pants at day and night. Sleep was disturbed. Allergies of any kind was not reported.

EXAMINATION

The child was struggling with making and maintaining eye contact, unable to express his own emotions, have limited speech, was flapping his hands, have specific interest in toys and shows over sensitivity to sounds and light. Child have poor memory and high anxiety. He is habitual of toe walking, self-harming behavior.

Head to foot Examination

The head-shape and size appeared normal. The Fontanels were closed by 18th months, and were non-pulsatile and normal. Facial morphism was normal; Dentition was normal but delayed. Neck, Skin, Limbs, Chest, Spine, Abdomen and Genitalia were normal.

Systemic Examination

No abnormalities were detected in examinations of Respiratory, Cardio Vascular, Gastro Intestinal and Urinary System. CNS was affected in the domain of Higher Mental Functions of the child. Appearance and behavior were noted as Aggressive, Hyperactive and Inattentive. The child was conscious with unoriented to time and place. A deficiency was noted in memory and Intelligence. Impairment in

both verbal and non- verbal communication was noted.

INVESTIGATIONS

Vision and Hearing tests were Normal.

ASSESSMENTS:

Specific assessment tools used for assessment of Autism:

Childhood Autism Rating Scale (CARS)-The CARS is used by clinicians to help determine the children who meet criteria for ASD from those who meet criteria for other developmental delays. The scale is a fifteen-item questionnaire that asks about relationships, imitative behaviour, emotional responses, ability to adapt to change, use of the senses and sensitivity to foods, sounds, objects, intellectual response, verbal communication, and activity level⁴

Autism Treatment Evaluation Checklist score (ATEC)- ATEC is a one-page form designed to be completed by parents, teachers, or caretakers. It consists of 4 subscales. Questions in the first three subscales are scored using a 0–2 scale while fourth is scored using a 0–3 point scale. Total Score, which ranges 0–179 points⁵.

DIAGNOSIS

The clinical condition was diagnosed as moderate ASD.

TREATMENT DONE

Five years old male child was undergone with the following treatment for 3 months.

Table No. 1: Treatment Protocol of Patient

1.	Ayurveda treatment	1gram of <i>Bilva Panchanga</i> + <i>Musta</i> + <i>Jatamansi choorna</i> with <i>Anupanam of Brahmi Ghrita</i> twice a day half hours before meal
	<i>Pathya</i>	<i>Medhya</i> (that which promotes memory and intellect), <i>Hridya</i> (that which is good for mind), <i>Brumhana</i> (that which is nourishing), <i>Ghrita</i> (ghee), <i>Madhu</i> (honey), <i>Yava</i> (<i>Hordeum vulgare</i>), <i>Dadima phala</i> (pomegranate fruit), <i>Amra phala</i> (mango fruit), etc.

	Apathya	Mamsa (meat), Rooksha (dry), Katu (pungent taste), Ushna (hot in potency), Vidahi (that which creates burning sensation), etc.
2.	Speech and language Therapy	Sessions have been arranged in evening hours for 3 days per week (Monday, Wednesday and Friday)
3.	Occupational Therapy	Sessions have been arranged in evening hours for 3 days per week (Tuesday, Thursday and Saturday)

RESULT

After three months of treatment, outcomes are as follows

Table No:2: Evaluation of treatment outcome using Childhood Autism Rating Scale (CARS)

Parameters for Evaluation	CARS Score	
	Before treatment	After treatment
Relation to people	3.0	2.5
Imitation	2.5	2.5
Emotional Response	3.5	3.0
Body use	2.5	2.5
Object use	3	2.5
Adaptation to change	3	2.5
Visual response	3	2.5
Listening response	3.5	2.5
Taste, smell & touch response and use	2.5	2
Fear/ Nervousness	1.5	1.0
Verbal communication	2.5	2.5
Non-verbal communication	2.5	2
Activity level	3	2
Level and consistency of intellectual response	2	2
General impression	2.5	2.5

Graph No.1-Evaluation of treatment outcome using Childhood Autism Rating Scale (CARS)

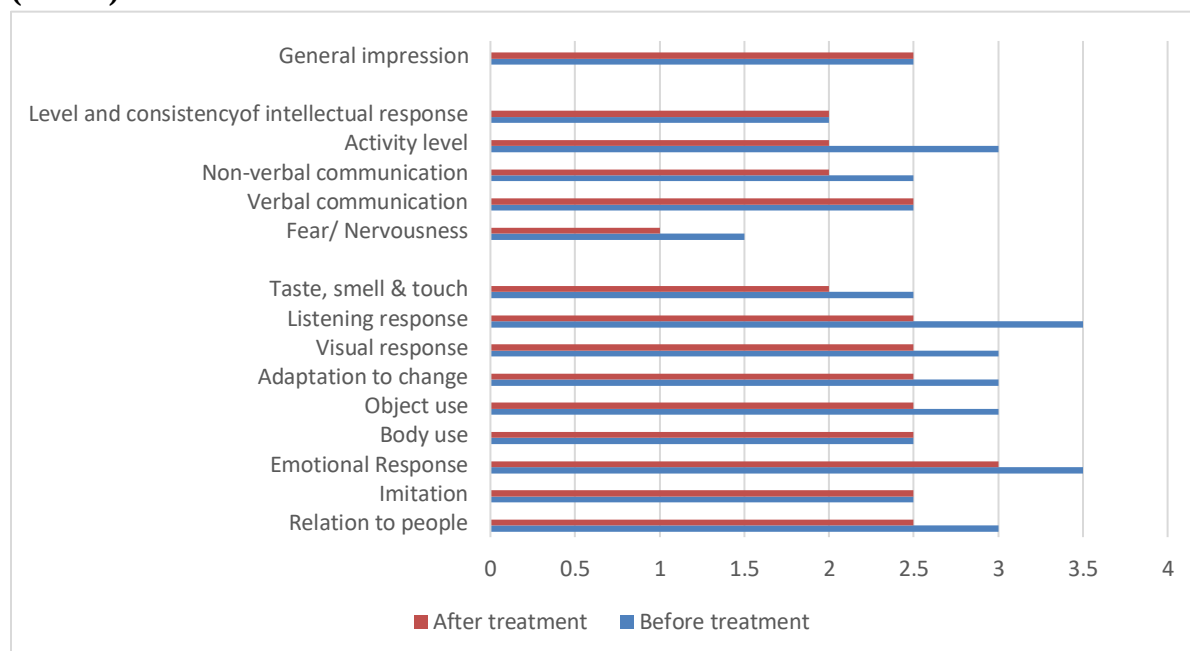


Table No:3 -Evaluation of treatment outcome using Autism Treatment Evaluation Checklist (ATEC)

Parameters for evaluation	ATEC Score	
	Before Treatment	After Treatment
Speech/Language/Communication	30	22
Sociability	26	20
Sensory/ Cognitive Awareness	24	20
Health/Physical/ Behavior	46	34

Graph No:2 - Evaluation of treatment outcome using Autism Treatment Evaluation Checklist (ATEC)

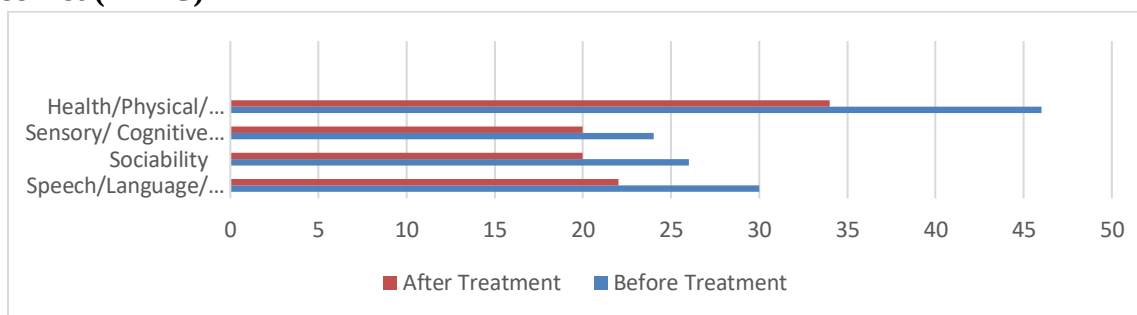
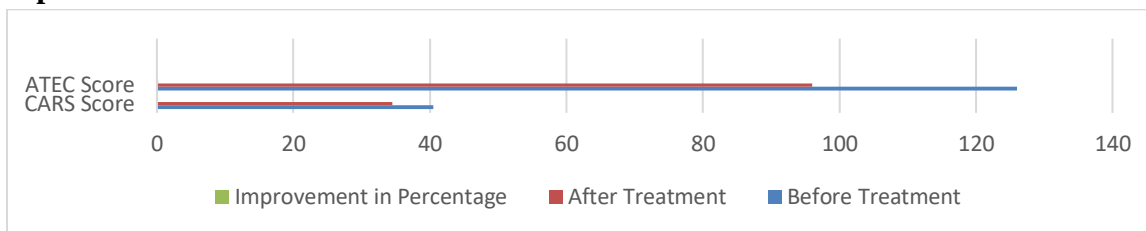


Table No:4 - Evaluation of overall outcome of treatment

Evaluation of overall outcome of treatment	Before Treatment	After Treatment	Percentage of improvement after treatment
Total score in CARS	40.5 (67.5%)	34.5 (57.5%)	10.0 %
Total score in ATEC	126 (70.3%)	96 (53.6%)	16.7 %

Graph 3: Gross evaluation of outcome of treatment

DISCUSSION

No effective medications are currently available to treat ASD. Supplemental Melatonin has shown promise in treating sleep onset insomnia in children with autism spectrum disorders (ASD)⁶. Risperidone and Aripiprazole are the only FDA approved medications for ASD, and they are approved only for the treatment of irritability in 5-16year old with ASD⁷.

Ayurveda has emerged with a cost-effective preventive and holistic approach to tackle it at very early age, providing a long-term intervention so as to eliminate the triggering elements of autism thereby improving the quality of life for such patients.

In present case *Ayurveda* treatment aims at removal of the vitiated *Doshas* and correction of *Agni* and metabolic derangement which are the prime causative factors of all diseases. It also facilitates the link between sense organs and brain efficiently⁸.

Vilva Panchang refers to the combination of five parts of the Vilva (Bael tree – *Aegle marmelos*): root, bark, leaf, flower, and fruit. Collectively they are known for their *deepana-pachana* (digestive), *medhya* (nootropic), *grahi* (absorbent), and *vata-kapha shamak* (vata and kapha balancing) properties. Moreover, when *Ghrita* based formulation when used as an *Anupanam* it provides added therapeutic properties of *Ghrita* like *Medhya*, *Ayu Vardhaka*, *Balavardhaka*, *Ojovardhaka*, *Vayasthapaka*,

Dhatuposhaka, and *Unmada*, *Apasmara*, *Mada*, *Murcha*, and *Shoshanashaka* properties⁹.

Diet therapy comprises *Pathya* (indications) and *Apathya* (contra indications) with respect to diet and eating habits. This is done to enhance the effects of therapeutic measures and to obstruct the pathogenic processes.

Speech and Language Therapy focused on communication skills and helps to articulate needs and develops social interactions.

Occupational Therapy focused on daily living skills and aids independence, self-regulation, and sensory processing areas.

After the completion of treatment duration, the patient showed significant improvement in core features of ASD and reduction of disease severity.

The present case report shows the efficacy of *Ayurvedic* treatment with collaboration with Speech and Language therapy and Occupational Therapy in the management of ASD with satisfactory outcomes.

CONCLUSION

This case demonstrates the clinical improvement in the patient of ASD with multidisciplinary approach which is safe in comparison with sedatives and steroids. *Ayurvedic chikitsa* with collaboration with other therapies as a long-term intervention can provide much better improvement in cases of ASD. There is need for further study on more populations with ASD to validate the efficacy of this collaborative

intervention. As the field continues to evolve, the role of collaboration becomes ever more crucial in creating supportive environments that nurture growth, independence, and a higher quality of life for autistic individuals and their families.

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