

**AYURVEDIC MANAGEMENT OF GLOBAL DEVELOPMENTAL DELAY
(SAMVARDHANA VIKARA) IN A PRETERM CHILD: A CASE REPORT**¹*Satyashree J., ²Dr. Varun T. V.¹Intern Rajeev Institute of Ayurvedic Medical Science and Research Centre, Hassan.²Associate Professor Dept of Shalakya Tantra Rajeev Institute of Ayurvedic Medical Science and Research Centre, Hassan.***Corresponding Author: Satyashree J.**

Intern Rajeev Institute of Ayurvedic Medical Science and Research Centre, Hassan.

DOI: <https://doi.org/10.5281/zenodo.23804783>**How to cite this Article:** ¹*Satyashree J., ²Dr. Varun T. V. (2026). Ayurvedic Management of Global Developmental Delay (Samvardhana Vikara) In A Preterm Child: A Case Report. World Journal of Pharmaceutical and Medical Research, 12(11), 214-218.

This work is licensed under Creative Commons Attribution 4.0 International license.



Article Received on 15/09/2026

Article Revised on 05/10/2026

Article Published on 01/11/2026

ABSTRACT

Global Developmental Delay (GDD) is a condition in children below five years characterized by significant delay in the attainment of developmental milestones in two or more domains, such as gross motor, fine motor, speech and language, cognitive, social and adaptive skills. It may be associated with factors such as prematurity, low birth weight, perinatal complications, hypoxic events, infections, genetic abnormalities and nutritional deficiencies. From the Ayurvedic perspective, developmental disorders may be understood predominantly through the involvement of Vata Dosha, particularly its role in the development and functioning of the nervous system. The concept of Samvardhana Vikara can be used to understand disorders affecting normal growth and development. Ayurvedic management focuses on balancing Vata, promoting nourishment and supporting the development of Mamsa, Majja and Ojas, along with measures aimed at improving neurological and cognitive functions. The present case study describes a 1-year-1-month-old male child with delayed developmental milestones, particularly delayed sitting, standing and walking, associated with decreased strength of the right upper and lower limbs. The child was born prematurely at 33 weeks with a birth weight of 1.6 kg and had a history of NICU admission. The child was managed through a multidisciplinary Ayurvedic approach consisting of Sarvanga Abhyanga, Shashtika Shali Pinda Sweda, Pratimarsha Nasya, Shirotalam, Matra Basti, internal medications and physiotherapy for 13 days. Improvement was observed in the child's ability to sit, stand with support, walk with one-hand support and engage in play. This case highlights the potential role of an integrated Ayurvedic and physiotherapeutic approach in supporting developmental progress in children with GDD.

KEYWORDS: Global Developmental Delay, Samvardhana Vikara, Vata Dosha, Abhyanga, Shashtika Shali Pinda Sweda, Matra Basti, Nasya, Physiotherapy, Ayurveda.**INTRODUCTION**

Child development is a continuous process involving acquisition of gross motor, fine motor, language, cognitive, personal-social and adaptive skills. Developmental milestones are expected to be attained within a particular age range. Failure to attain age-appropriate milestones may indicate developmental delay.

Global developmental delay is generally used in young children when significant developmental delay is present in two or more developmental domains. Manifestations

may include delayed sitting, crawling, standing, walking and speech, along with impaired fine motor skills, muscle weakness and difficulties in personal-social development. The uploaded case material describes GDD in relation to delays in motor development and associated neurological findings.

In Ayurveda, Samvardhanadenotes growth or development, whereas Vikara denotes a pathological condition. Hence, Samvardhana Vikara can be understood as a disorder affecting normal growth and developmental progression. Vata Dosha has an important

role in movement, neurological functions and motor activities. Therefore, conditions presenting predominantly with impaired motor development may be considered from the perspective of Vata-pradhana pathology.

The present case describes a preterm, small-for-gestational-age male child with delayed developmental milestones, reduced right-sided limb strength and mild neck tilt, who was managed with a combination of Ayurvedic procedures, internal medication and physiotherapy.

BACKGROUND

Global developmental delay (GDD) is characterized by significant delay in the attainment of developmental milestones in two or more developmental domains, including gross motor, fine motor, cognitive, language, personal-social and activities of daily living. In Ayurveda, developmental disorders in children may be understood under the broader concept of **Samvardhana Vikara**, with predominant involvement of Vata Dosha and impairment of normal growth and development.

CASE PRESENTATION

A 1-year-1-month-old male child was brought by his mother with complaints of delayed developmental milestones, particularly delayed sitting without support, standing with support and walking. The child also had decreased strength in the right upper and lower limbs and a mild right-sided neck tilt. The child was born prematurely at 33 weeks of gestation with a birth weight of 1.6 kg and was considered small for gestational age. He required neonatal intensive care for 6 days and nasogastric tube feeding. The mother had a history of gestational hypertension during pregnancy. The child did not cry immediately after birth. Developmental delay became more apparent around 9–10 months of age.

Patient Information

Chief Complaints

1. Delay in sitting without support.
2. Delay in standing with support.
3. Delay in walking.
4. Decreased strength of the right upper limb.
5. Decreased strength of the right lower limb.
6. Mild tilting of the neck towards the right side.

The developmental delay was noticed more clearly from approximately **9–10 months of age**.

Antenatal History

The mother had a history of **gestational hypertension** during pregnancy. No other antenatal abnormality is documented in the available case information. The history of gestational hypertension is relevant in the context of the child's subsequent premature birth and low birth weight.

Natal and Birth History

The child was delivered at **33 weeks of gestation**, indicating prematurity. His birth weight was **1.6 kg**, and he was identified as **small for gestational age (SGA)**. The child reportedly **did not cry immediately after birth**. Following birth, he required neonatal intensive care for **6 days** and was given **nasogastric tube feeding**.

Postnatal History

Following the neonatal period, the child continued to receive routine care. Immunization was reported to be **attained according to schedule**.

There was no documented history of seizures or congenital anomalies. No other significant abnormality was identified during general examination.

The child's food intake, sleep and bowel habits were reported to be normal.

Developmental History

Developmental milestones attained

- Responded to family members' voices around **3–4 months**.
- Started smiling and engaging in reciprocal interaction around **5–6 months**.
- Clapping, waving and some social play were present around **7–9 months**.
- Pencil/fine grasp was attained around **6–7 months**.
- Tripod position and crawling were attained around **9 months**.
- Sitting with support was attained around **7 months**.
- Monosyllable and bisyllable vocalization was attained around **9–12 months**.

Developmental milestones delayed

The major developmental concern involved gross motor development.

Sitting without support

The child did not attain independent sitting at the expected age. Independent sitting was achieved only after one year of age and was still associated with dependence on the presence/support of family members.

Standing

Standing with support and pulling up to stand were delayed and difficult.

Standing with support

The milestone was still not attained appropriately at the documented stage.

The case record compares the expected developmental period with the child's attainment: sitting without support, standing with support and independent standing were delayed, with standing still not fully attained at the time of assessment.

Neurological and Functional Complaints

Along with delayed gross motor milestones, the child had **decreased strength involving the right upper and lower limbs**. A mild tilt of the neck towards the right side was also noted.

Despite the motor delay, **eye-to-eye contact was present**, grasping was matured and monosyllabic/bisyllabic vocal development had occurred. These findings suggest that the developmental impairment was particularly prominent in the gross motor domain, although the overall case was considered under developmental delay.

Family History

No significant family history is documented in the available case information.

History of Seizures and Congenital Anomalies

There was **no history of seizures or congenital anomalies** documented in the case record. No other significant abnormality was identified during general examination.

General Examination

Parameter	Finding
Height	76 cm
Weight	7.8 kg
Mid-arm circumference (MAC)	13.5 cm
Chest circumference	43 cm
Head circumference	45 cm
Pallor	Absent
Icterus	Absent
Cyanosis	Absent
Lymphadenopathy	Absent
Edema	Absent
General appearance	Fair
Pulse	80/min
Respiratory rate	23/min
Temperature	97°F

Systemic Examination

Central Nervous System

The clinically significant findings included delayed gross motor development, decreased strength of the right upper and lower limbs and mild right-sided neck tilt.

Respiratory System

No abnormal respiratory sounds heard

Cardiovascular System

S1 and S2 heard normally, no added sound

Gastrointestinal System

Food and bowel habits were reported to be normal.

Musculoskeletal System

The important findings were delayed attainment of sitting and standing milestones, difficulty in standing and

walking, and decreased strength involving the right upper and lower limbs.

Investigations

MRI Brain – Plain

MRI brain findings documented:

- Asymmetric periventricular/deep white matter changes.
- T2/FLAIR hyperintensities involving bilateral parieto-frontal regions with volume loss.
- Mild T2/FLAIR bright signals involving the bilateral periventricular temporal regions.

EEG

EEG showed **generalized sharp waves**.

Diagnosis

Modern Perspective

Based on the history of delayed developmental milestones, particularly gross motor delay, associated limb weakness and neurological investigation findings, the case was considered as **Global Developmental Delay (GDD)**.

Ayurvedic Perspective

The clinical presentation was considered under **Samvardhana Vikara**, with predominant involvement of **Vata Dosha**.

Ayurvedic Assessment

From an Ayurvedic standpoint, the condition was considered predominantly associated with **Vata Dosha**, particularly because of impairment of movement and motor functions.

The therapeutic objective was therefore directed towards:

1. Vata Dosha management.
2. Brimhana and nourishment.
3. Improvement of muscle strength.
4. Supporting neurological functions.
5. Improving motor development.

Therapeutic Intervention

External Therapies

Treatment was administered from **06/09/2023 to 18/09/2023**.

Sarvanga Abhyanga

Promotes Vāta-śamana, Snehana and dhātu-puṣṭi, reducing stambha and gātra-graha.

Supports neuromuscular stimulation, peripheral circulation and overall bala.

Śaṣṭika Śālī Piṇḍa Sveda

A snigdha, br̥ṃhaṇa and Vāta-hara svedana that nourishes māṃsa-dhātu and promotes bala.

Helps reduce stambha, improve muscle flexibility and support functional mobility.

Śiro-Talam

Provides śiro-vāta śamana, snigdha and indriya-prasādana effects, promoting relaxation of the head and neck region.

Supports nidra, manas-prasāda and sensory functions as an adjunctive therapy.

Nasya

Acts on the ūrdhvajatru region and is traditionally used for Vāta-śamana and support of śiro and indriya functions.

Internal Medication

Medicine	Dose	Frequency
Syrup Shankhapushpi	5 ml	1-0-1
Brahmi Vati	1 tablet	1-0-1
Guduchi + Vacha Churna	½ tsp with honey	1-0-1

Brahmi Vati was powdered and mixed with grits/rice bolus

Guduchi and Vacha Churna were rubbed over tongue along with honey and asked to swallow

Follow-up Management

Following the initial treatment period, the documented management included:

- Continuation of Brahmi Vati.
- Continuation of Shankhapushpi syrup.
- Guduchi and Vacha Churna with honey.
- **Ashwagandha Bala Lakshadi Taila** for daily Abhyanga before bath.

Its snigdha action helps reduce rukṣatā and supports sensory and neuromuscular function.

Mātrā Basti

A mṛdu, nitya and Vāta-hara Basti, supporting Vāta-anulomana through the pakvāśaya, the principal seat of Vāta.

Promotes snigdha, dhātu-puṣṭi and bala, supporting neuromuscular development.

Before treatment

- Delayed sitting without support.
- Difficulty standing with support.
- Delayed walking.
- Decreased right-sided upper and lower limb strength.
- Mild right-sided neck tilt.

After treatment

- Able to sit without support.
- Able to stand without support.
- Able to walk with one-hand support.
- Able to sit and play.

Assessment of Outcome

DISCUSSION

Global developmental delay involves impairment in the acquisition of age-appropriate developmental milestones. The present child showed predominant impairment in gross motor development, particularly delayed sitting without support, standing and walking.

The child's history revealed several significant perinatal factors, including prematurity at 33 weeks, low birth weight of 1.6 kg, small-for-gestational-age status, NICU admission and NG tube feeding. Maternal gestational hypertension was also documented.

From an Ayurvedic perspective, the clinical manifestations were considered predominantly related to Vata Dosha. Vata is responsible for movement and various neurological and motor functions. Hence, therapeutic measures directed towards Vata Shamana and Brimhana were incorporated.

Outcome

Following the documented treatment period, improvement was observed in the child's gross motor abilities.

The child progressed to

- Sitting without support.
- Standing without support.
- Walking with one-hand support.
- Sitting and playing.

CONCLUSION

The present case of a 1-year-1-month-old preterm male child with global developmental delay demonstrates improvement in gross motor functions following a multimodal intervention comprising Ayurvedic procedures and internal medications.

The child's history of prematurity, low birth weight, small-for-gestational-age status, NICU admission and delayed cry represents important background factors in understanding his developmental course. The Ayurvedic approach was based predominantly on Vata management along with Brimhana and supportive measures.

At discharge, the child showed functional improvement, including the ability to sit and stand with support, walk with one-hand support and sit and play.

Early identification, individualized management, parental involvement and regular developmental follow-up remain important components of care for children with development

Furthermore, it demonstrates that treatment based on Ayurvedic principles and Panchakarma treatment regimens which has a stable and advantageous position in dealing with developmental delay.

REFERENCES

1. Shevell M, Ashwal S, Donley D, et al. Practice parameter: Evaluation of the child with global developmental delay. *Neurology*, 2003; 60(3): 367-380.
2. Bélanger SA, Caron J. Evaluation of the child with global developmental delay and intellectual disability. *Paediatrics & Child Health*, 2018; 23(6): 403-419.
3. Coughlin L. AAP Releases Guidelines on the Clinical Evaluation of the Child with Mental Retardation or Developmental Delays. *American Family Physician*, 2007; 75(3): 419-422.
4. Vitikaitis K, Savard D, Bucay M. Developmental Delay: When and How to Screen. *American Family Physician*, 2017; 96(1): 36-43.
5. Koopman JJ, Fiore DC, Thiele K. Approach to Developmental Screening and Surveillance in Young Children. *American Family Physician*, 2025; 112(1): 55-61.
6. Noritz GH, Murphy NA. Neuromotor Screening Expert Panel. Motor delays: early identification and evaluation. *Pediatrics*, 2013; 131(6).
7. Ashwal S, Michelson D, Plawner L, Dobyns WB. Practice parameter: Evaluation of the child with microcephaly. *Neurology*, 2009; 73(11): 887-897.
8. American Academy of Pediatrics. Developmental surveillance and screening recommendations for young children.
9. Ministry of AYUSH. Ayurvedic Pharmacopoeia of India. Government of India.
10. Vāgbhaṭa. Aṣṭāṅga Hṛdaya, Sutrasthana – classical descriptions of Abhyanga, Swedana, Nasya and Basti.
11. Caraka. Caraka Saṃhitā, Sutrasthana and Chikitsasthana – descriptions of Rasayana and Medhya concepts.
12. Suśruta. Suśruta Saṃhitā, Chikitsasthana – classical description of Basti and related therapeutic principles.
13. Case presentation and clinical records of the present patient, "Global Developmental Delay: Build a Healthy Next Generation through Ayurveda," Rajeev Ayurvedic Medical College, Hospital and Research Centre, Hassan.
14. Tripathi. B. Astanga Hridaya of Acharya Vagbhata. Chapter 21, verse 38. Reprint 2017. Varanasi; D. Chaukhambha Sanskrit pratishthan, 456.