WORLD JOURNAL OF PHARMACEUTICAL RESEARCH
SJIF Impact Factor 8.084
Volume 12, Issue 17, 423-429. Review Article ISSN 2277–7105

AYURVEDIC MANAGEMENT OF SARWANGA VATA VYADHI (QRUADRIPLEGIC CEREBRAL PALSY)

Dr. Alka Chouhan[1*], Dr. Minal Khode[2] and Dr. Priyanka Teva[3]

Dept. of Kaumarabhritya[1], Dept. of Kaychikitsa[2], Dept. of Prasuti Tantra & Stri Roga[3]
R.N. Kapoor Memorial Ayurvedic College & Hospital, Indore (Madhya Pradesh).

Article Received on
14 August 2023,
Revised on 03 Sept. 2023,
Accepted on 24 Sept. 2023
DOI: 10.20959/wjpr202317-29739

***Corresponding Author**
Dr. Alka Chouhan
Dept. of Kaumarabhritya,
R.N. Kapoor Memorial Ayurvedic College & Hospital, Indore (Madhya Pradesh).

ABSTRACT

Cerebral palsy (CP) is a disorder characterized by abnormal tone, posture and movement and clinically classified based on the predominant motor syndrome. Prematurity and low birthweight are important risk factors for CP; however, multiple other factors have been associated with an increased risk for CP, including maternal infections, and multiple gestation. According to Vāgbhaṭṭa, it is classified in the disease categories of *Sahaja* (hereditary) and *Garbhaja* (congenital) and *Jātaja* (psychosomatic) type of diseases. Here, an effort was made to treat a 4-year-old male child with spastic quadriplegic type of CP using multiple Ayurveda treatment modalities to improve general health condition. At the end of 60 days of treatment, by internal medication along with *Pañchakarma* procedures and physiotherapy, resulted in 10–15% improvement after using treatment modilities.

KEYWORDS: Cerebral Palsy, Ayurveda, *Pancakarma*.

INTRODUCTION

Cerebral palsy (CP) is primarily a neuromotor disorder that affects the development of movement, muscle tone and posture.[1-3] The underlying pathophysiology is an injury to the developing brain in the prenatal through neonatal period.[1-3] Although the initial neuropathologic lesion is non-progressive, children with CP may develop a range of secondary conditions over time that will variably affect their functional abilities.[4-5]

The prevalence of CP for all live birth ranges from 1.5 to 3 per 1,000 live births, with variation between high income and low to middle income countries and geographic

region.[2,5,6,7,8] Because, in many infants and children, abnormal neuromotor findings tend to resolve within the first few years, especially during the first 2–5 years, of life, the reported prevalence of CP tends to be higher during infancy.[2-5, 7, 9,11,13]

In clinical diagnosis MRI brain found Diffuse cortical thickening bilaterally with reduced sulcation- suggestive of pachygyria. Pachy is derived from a Greek word meaning "thick" or "fat" gyri. Pachygyria is a congenital malformation of the cerebral hemisphere. Pachygyria is a neuronal migration disorder characterized by thick convulsions on cerebral cortex and brain has few gyria. The condition is also known as “incomplete lissencephaly. Pachygyria may occur alone (isolated) or as part of various underlying syndromes.

Ayurveda has a separate branch of clinical specialization concerning child healthcare known as *Kaumārabhṛtya*. There is no exact correlation available in *Ayurvedic* classics with CP, but Cerebral palsy can be compared with *Vatavyadhi or Vatavikara* (diseases of the nervous system) which specifically afflict the Shiro-marma which may noticeable in various clinical forms as *Phakka roga* (Nutritional disorder described in Kashyapa samhita), *Pangulya* (Locomotor disorder), *Mukatva* (dumbness) *Jaḍatva* (mental disorders), *Ekangaroga* (monoplegia), *Sarvangaroga* (quadriplegia), *Pakṣaghata* (hemiparesis), *Pakṣavadha* (hemiplegia), *Akshepaka* (convulsion disease) etc.

PARIENT INFORMATION

A 3-years old male child presenting in outpatient department with the complaints of global developmental delay (neck holding not attained completely, unable to sit without support), spasticity of both upper and lower limbs, impaired speech, drooling of saliva. First child of Non consanguineous parents, born through full term normal vaginal delivery. Cried soon after the birth, birth weight was 3.100 kg, sucking was good. No h/o neonatal jaundice, neonatal sepsis and seizures. Discharged on post-natal day 3. Turning over and social smile attained at 3 months of age. Parents noticed delay in attaining neck holding and child was taken hospital at 7th month of age. The child was under medication for three months. At 10 months of age, child was referred to SAT Hospital and consulted pediatric neurologist. They suggested for MRI-brain and it showed pachygyria. And they started allopathic medications. But there was no improvements in child. At 1 year of age, the child was able to sit with support and was able to hold things using both the hands. At 1 ½ years of age, pediatric neurologist suggested for an EEG and it showed epileptiform changes and AEDs were started, and they also advised for physiotherapy. Physiotherapy was started along with medication and there was mild

changes in child. At 2 years of age, partial neck holding was attained and child was able to hold things in one hand, makes sounds by cooing, responds to mother through smile and cry. At 2 ¾ years of age, the child was taken to OPD with the same complaints along with drooling of saliva and medicines were started, there was improvements in child (improvements in range of movements and drooling of saliva was reduced).

CLINICAL FINDING

On examination, vital signs normal. Abnormal higher mental functions like orientation in time and place absent, impaired memory, impaired attention, affected intelligence, speech impairment along with baby not able to walk, upper limb spasticity present and lower limb crossing of the limb present association with hyoertonic of the limbs. Abnormal face micrognathia, convergent squit, serrated at tips of teeth, wide spaced nipples. After the systemic examination the treatment protocol was planned on Dosha (regulatory functional factors of the body) and Dushya (which gets vitiated).

DIAGNOSTIC ASSESSMENT

MRI Brain – 10th months of age (20.05.2019)

Diffuse cortical thickening bilaterally with reduced sulcation- suggestive of pachygyria. Diffuse periventricular T2W/FLAIR hyperintensity with loss of white matter volume-associated finding in pachygyria/associated dysmyelination. Bilateral lateral ventricles appear dilated- due to surrounding white matter volume loss.

EEG Report

12 months of age (26/02/2020)

This EEG record showed right central and bilateral central epileptiform abnormalities.

2 years 6 months of age (14/04/2021)

This record shows focal epileptiform discharges in B/L Frontal regions suggestive of a focal epilepsy syndrome.

TIMELINE

The detailed timeline of the patient's treatment and outcome are enlisted in table 1.

Table 1: timeline of In-patient department.

Date of admission	Complaints/ condition of the patient	Intervention
18/05/2022	Global developmental delay (neck holding not attained completely, unable to sit without support, unable to walk with support) Spasticity of both upper and lower limbs Impaired speech Drooling of saliva	Udawartana with kolakulathadi choorna for 30 mints for 5days 2 pinch of Avipathy choorna twice daily after food 20ml of Maharasnadi Kashaya 3times a day before food 2 pinch of Ashta choorna twice daily before food
23/05/2022	Complaints persist	Same internal medicine repeated 2.5gm of Kalyanaka ghrita twice daily before food Jambhirrasnadi lepa over both cheek and neck Abhayangam with mahamasha taila for 30 mints for 7 days
29/05/2022	Spasticity reduced Drooling of saliva reduced	Choorna pinda sweda with kolakulthadi choorna for 7 days
6/06/2022	Spasticity reduced	Kayasekam with mahamasha taila for 45 mint for 5 day
11/06/2022	Spasticity reduced More active	Basti- Dwipanchmuladi yoga basti (8days) Sneha vasti- Pipplyadi anuvasana taila
20/06/2022	Spasticity reduced More active Drooling of saliva reduced	Patient was discharge

THERAPEUTIC INTERVENTIONS

Table 1. After thorough examination in the outpatient department patient admitted for further management. The child was managed with both internal medication and external therapies including physiotherapy. Treatment such as Udawartana, Abhayanga, Choorna pinda sweda, Dwipanchamuladi yoga basti, Sneha vasti and topical applications over both cheek and neck were adopted in the current case. Assessment of the patient was done both before and after the treatment.

FOLLOW-UP AND OUTCOME

The patient was assessed through various clinical examinations. At the end of the treatment of Two months, significant improvement was noted in his clinical features. The modified Ashworth scale assessment was done. After treatment, the score improved from 4 grade to grade 3. Observations infer the scope of Ayurvedic intervention in managing cp and thereby improving the functional status and quality of life of the patient. No adverse reactions were noticed during the treatment.

DISCUSSION

The patient had visited the hospital as a diagnosed case of Spastic CP. In ayurveda, this condition cannot be correlated directly to a particular disease but we can say it is a *Vata Vyadhi*. In *Samprapti* (pathogenesis) maily *Vata* and *Kapha dosha* are involved, due to CMV positivity in mother (*agantuja nidana*) can reduced food intake and *Amla and, Katu rasa pradhana ahara* taken by mother, leads to *Dhatwagni mandhya* and *rasa Kshaya* in mother, which results in *Vata prakopa*. Five subtypes of *Vata* seem deranged like *Prana vayu - Budhi, indriya, chitta, annapravesa* is affected, *Udana vayu- Vak pravarti, bala, smriti* is affected, *Vyana vayu-gati, avakshepa, utkshepa* is affected, *Saman vayu-Anna pravesa, ahara pachana* is affected, *Apana vayu-* urinary incontinence. Dhatu formation of foetus was affected and dhatu *poshana* was not proper. Due to *dhatu Kshaya* and *Agni mandhya* here decreased *Sahaja bala* and *Oja kshaya* in foetus *(bala kshaya).* The child was born with neuronal dymylenation- Pachygria. Dosha gets S*thanasamsraya* in *siras* and symptoms manifested in *sarvanga* like Global developmental delay, microcephaly, spasticity of upper and limbs, impaired speech, intellectual disability. Ayurveda approach can improve patients quality of life by analyzing the Doshas and Dhatus involved in the disease. First of all we need to correct dhatu *agnimadhya*, the treatment started with *agni Deepana* (appetizer) *pachana* (digestive) and *anulomana*[15] medicine such as *ashta choorna*[16] and *avipathykara choorna.*[17] *Maharasnadi Kashaya* for internal use, drugs in this Kashaya mainly vatahara in nature. The treatment *Udwartana* (~massage with medicated powder) was influential in the removal of *Srotorodha* and to bring *Sthirikarana* (~firmness) to the body parts.[18] *Udwartana* was done with *Kolakulathadi churna*. *Abhayanga* alleviates the *Vata dosha* and provides strength for the muscles and bones.[19] *Abhayanga* given with *mahamasha taila* it can reduce vata and can prevent further dhatu kshaya (diminution of body tissue elements). *Mahamasha taila* can improve muscles weakness, reduce nervous disorders, paralytic condition. The most important part of the treatment was basti, which help in the condition of vitiated *tridoshas* (three regulatory functional factor of the body). *Dwipanchamuladi basti* was given as it is effective in disorders of *apanavata*, which is very difficult to manage. *Pippalyadi anuvasana* also very useful, as it is effective in the *Dourbalya*(weakness) of the *uru* (thigh), *kati*(back) or dorsum) region.[20] *Kalyanaka ghrita* was included in the internal medication for *snehana*, it can improve bala (immunity) and *ojas* (essence of all seven dhatus).[21] *Jambherarasnadi Lepa*, this *lepa* was applied over both cheek and neck region for controlling of excessive salivation. Both external and internal medications brought significant improvement in the condition of the patient.

DECLARATION OF PATIENT CONSENT

Authors certify that they have obtained patient consent form, where the caregiver has given his consent for reporting the case along with the images and other clinical information in the journal. The caregiver understands that his name and initials will not be published and due efforts will be made to conceal his identity, but anonymity cannot be guaranteed.

Financial support and sponsorship Nil.

Conflicts of interest There are no conflicts of interest.

REFERANCES

1. Rosenbaum P, Paneth N, Leviton A, et al. A report: the definition and classification of cerebral palsy April 2006. *Dev Med Child Neurol Suppl*, 2007; 109: 8-14. [PubMed] [Google Scholar]
2. Colver A, Fairhurst C, Pharoah PO. Cerebral palsy. *Lancet*, 2014; 383: 1240-9. 10.1016/S0140-6736(13)61835-8 [PubMed] [CrossRef] [Google Scholar]
3. Graham HK, Rosenbaum P, Paneth N, et al. Cerebral palsy. *Nat Rev Dis Primers*, 2016; 2: 15082. 10.1038/nrdp.2015.82 [PMC free article] [PubMed] [CrossRef] [Google Scholar]
4. National Center on Birth Defects and Developmental Disabilities, Centers for Disease Control and Prevention. Data and statistics for cerebral palsy. Available online: https://www.cdc.gov/ncbddd/cp/data.html.
5. National Institute for Health and Care Excellence (UK). Cerebral palsy in under 25nd management. Available online: https://www.ncbi.nlm.nih.gov/books/NBK419326/pdf/Bookshelf_NBK419326.pdf [PubMed]
6. Stavsky M, Mor O, Mastrolia SA, et al. Cerebral palsy-trends in epidemiology and recent development in prenatal mechanisms of disease, treatment, and prevention. *Front Pediatr*, 2017; 5: 21. 10.3389/fped.2017.00021 [PMC free article] [PubMed] [CrossRef] [Google Scholar]
7. Himmelmann K. Children and youth with complex cerebral palsy: care and management. Edited by Laurie J. Glader, Richard D. Stevenson. London: Mac Keith Press, 2019; pp 384. ISBN: 978-1-909962-98-9. Acta Paediatr 2019. [Epub ahead of print]. [Google Scholar]

8. Michael-Asalu A, Taylor G, Campbell H, et al. Cerebral palsy: diagnosis, epidemiology, genetics, and clinical update. *Adv Pediatr,* 2019; 66: 189-208. 10.1016/j.yapd.2019.04.002 [PubMed] [CrossRef] [Google Scholar]
9. johnston MV. Cerebral palsy. In: Kliegman RM, St Geme III JW, Blum NJ, et al. editors. Nelson textbook of pediatrics. 21st ed. Philadelphia: Elsevier, 2020; 3168-72. [Google Scholar]
10. Johnson TL, Chin EM, Hoon AH. Cerebral palsy. In: Batshaw ML, Roizen NJ, Pellegrino L. editors. Children with disabilities. 8th ed. Baltimore: Paul Brookes, 2019; 423-56. [Google Scholar]
11. Liptak GS, Murphy NA, Council on Children With Disabilities. Providing a primary care medical home for children and youth with cerebral palsy. *Pediatrics,* 2011; 128: e1321-9. 10.1542/peds.2011-1468 [PubMed] [CrossRef] [Google Scholar]
12. Korzeniewski SJ, Slaughter J, Lenski M, et al. The complex aetiology of cerebral palsy. *Nat Rev Neurol,* 2018; 14: 528-43. 10.1038/s41582-018-0043-6 [PubMed] [CrossRef] [Google Scholar]
13. Singh K and Verma B. An Ayurvedic Perspective towards Cerebral Palsy. J. Res. Educ. Indian Med, 2012; 18(3-4): 163-174.
14. Krishnan Vaidyan AK, Gopalapillai S, editors. Kasaya Prakarana. Sahasrayogam. 35th ed. Alappuzha: Vidyarambham Publishers, 2017; 78.
15. Murthy SK, editor. Ashtanga Hridaya of Vagbhata, Chikitsa Sthana. Ch. 14, Ver. 35. Varanasi: Chowkamba Krishnadas Academy, 2014; p. 406.
16. Dr. K. Nishteswar, Dr. R. Vidyanath. Choorna prakarana. Sahasrayogam. Vijayawada. Reprint, 2017. Chowkhamba Sanskrit series office Varanasi, 2005; p 200.
17. Srinivasa Rao P, editor. Ashtanga Samgraha of Vagbhata, Sutra Sthana. 1st ed., Ch. 3, Ver. 67. Varanasi: Chowkamba Sanskrit Series, 2005; p. 32.
18. Srinivasa Rao P, editor. Ashtanga Samgraha of Vagbhata, Sutra Sthana. 1st ed., Ch. 3, Ver. 56. Varanasi: Chowkamba Sanskrit Series, 2005; p. 31.
19. Murthy SK, editor. Ashtanga Hridaya of Vagbhata, Chikitsa Sthana. Ch. 8, Ver. 89. Varanasi: Chowkamba Krishnadas Academy, 2014; p. 320.
20. Krishnan Vaidyan AK, Gopalapillai S, editors. Arishta Prakarana. Sahasrayogam. 35th ed. Alappuzha: Vidyarambham Publishers, 2017; p. 251.