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A CASE STUDY ON AN AYURVEDIC INTERVENTION IN THE MANAGEMENT OF CEREBRAL PALSY

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INTRODUCTION

Cerebral palsy (CP) is defined as a non-progressive neuromotor disorder of cerebral origin. It includes a group of heterogeneous clinical states of variable etiology and severity ranging from minor incapacitation to total handicap. Most of the cases have multiple neurological deficits and variable mental handicap. Cerebral Palsy excludes motor disorders of spinal, peripheral nerve, muscular or mechanical origin.[1] The prevalence of cerebral palsy among children is almost 2/1000 live births.[2] There are approximate 25 lakhs cerebral palsy affected children in India. The World Health Organization estimates that about 10% of the population have some form of disability. Statistics from a different source indicates that 3.8% of the population has some form of disability in India. Nearly 15-20% of total physical handicapped children suffer from cerebral palsy.[3]

Cerebral palsy in Ayurveda can be considered as ShiroMarmabhigathaja Bala Vata Vyadhi, which may manifest itself in any of the following main clinical presentations such as spastic monoplegia (Ekanga Roga), hemiplegia (Pakshavadha), spastic diplegia (Pangu), spastic quadriplegia (Sarvanga Roga), choreoathetosis (Vepathu) and ataxia, which are described under Vata Vyadhi in the texts. Skanda vyadhi (A.S.U 3/10), which is described in Balgrah, also having similar symptoms as found in cerebral palsy. In Ayurvedic classics while describing Shiromarmabhighata, there is description of certain Vata vikar such as Chesta-nasha, Gadgada etc. which indicates towards mental impairment.

In this study we have formulated an *Ayurvedic* therapy protocol to improve the condition of CP patients.

CASE INTRODUCTION – 2.5 year old female child with mother at State ayurvedic College and hospital, Lucknow.

Informant- mother
Reliability of informant-good

Chief complaint- unable to hold neck and sitting with or without support. Child had almost normal physical development. Physical appearance and physical growth of child is appropriate to age.

Birth history – she is the first born child and mother was 24 year old when she was pregnant.

First trimester – mother took folic acid supplementation. No history of fever or any other ailment has been reported and there is no history of medication during first trimester.

Second trimester- Quickning was felt at around 5 month of pregnancy by mother. Mother visited doctor for Regular ante-natal check ups. Mother took calcium and iron supplements. No history of pre-eclampsia, GDM, anemia or bleeding per vagina.

Third trimester – regular ante-natal check ups, fetal movements were well appreciated by mother during third trimester. No history of HTN, GDM, burning micturition, suprapubic pain, fever, bleeding PV has been reported.

Natal history - labour was started at the end of 33rd week of gestation. It was a cesarion delivery because of breech presentation. History of prolonged labour is also reported. Baby didn't cry immediately after birth and admitted in NICU where airway was stabilized. Birth weight was reported to be 2.2kg. baby remained admitted in NICU for 15 days in KGMC Lucknow.

Postnatal history- expressed breast milk was given at the end of first week. Patient had an epileptic episode after 25th day of birth and remained hospitalised for 2 days. She is on antiepileptic drug (sodium valproate) since then. Periventricular leukomalacia was observed in patient's MRI.

Developmental history

Domains of development	Milestones	Age of attainment	Expected age of attainment	Developmental quotient (DQ)
Gross motor	Head control Rolling over	No	3 months 5 months	0/30months*100=**0%**
Fine motor	Immature pincer grasp	2 years	9 months	9/30 months*100=**30%**
Personal and social	Ask for food when hungry	2 years	2 years	24 months\30months*100=**80%**
Speech	Monosyllables	1 year	6 months	6 months\30 months* 100=**20%**

Mother complained that child never attained head control, is unable to get up or even turn about in bed, child could move her limbs and neck from the beginning however. Child could reach out for objects with fingers by the end of 2 years. Child could recognise mother, maintains eye contact with her, laugh when happy. Child could say 'ma ma' 'ba ba' and monosyllable words by the end of 1 year. Child is dry by day. Mother noticed that child could convey that she is hungry sometimes but not always. Mother also complained about patient`s less appetite. No history of nasal regurgitation or coughing during feeding however. Mother was informed about the developmental delay and was to start physiotherapy. Child has been taking syrup for seizures once a day. No history of regression of milestones, projectile vomiting, altered sensorium, cranial nerve involvement, bowel and bladder incontinence, constipation, lethargy, fever or generalised seizure.

Immunisation history

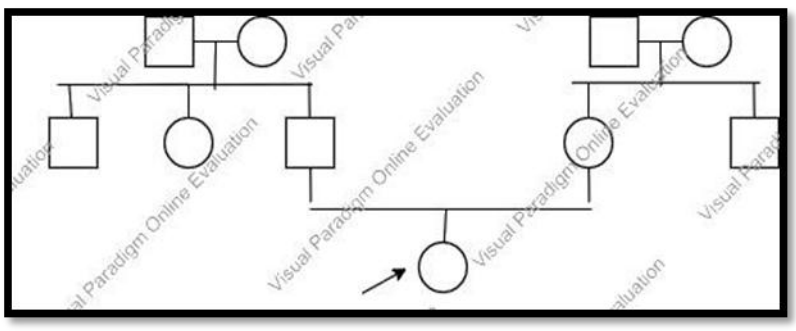
Child is immunised up to date

Last immunisation was done at the age of 1.5 years.

Family history

Child is born out of non-consanguinous marriage

No history of similar complaints in the family.



Examination

Vitals were normal. Cardiovascular system, respiratory system and per abdomen examinations had shown no deformity.

Prakṛti (constitution) was *Vātādhikakapha*.

Aṣṭavidhaparīkṣā

Nāḍi (pulse) was *vātādhikatridoṣaja*. There was no complaint with regard to *Mūtra* (urine). Frequency and color were normal. *Mala* (stool) was constipated and passes with a foul smell and dark color, once in 2–3 dayṣ Bowel control was achieved at the age of 1.5 years. *Jihvā* (Tongue) was *sāma* (coated suggestive of improper digestion). *Śabda* (speech) was monosyllables. *Sparśa* (touch) was hard and dry (due to hypertonia and spasticity). *Dṛk* (eyes) was normal. *Akṛti* (appearance) was normal.

Central nervous system examination

Patient was diagnosed to have the hypertonia (spasticity in legs)hypertonia was not noticed in upper limbs. And contractures at ankle and knee joint. Muscle power could not be elicited because patient was unable to follow the command. Sensory system was intact, and no abnormality found. Cranial nerve examination could not be done because patient was uncooperative. Hyperreflexia was present in both legs, suggestive of upper motor neuron disease (which is the hallmark of CP). Babinski sign was up going (positive). Meningeal signs were not present.

Samprapti ghatak

Dosha- vata

Dushya- asthi, snadhi, snayu, kandara

Agni- manda

Strota- majjavaha

Strotodushti- sanga

Udbhavasthana- pakvashaya

Vyaktsthana- sarvanga

Roga- baal pakshaghata

Upadrav- sankocha (contracture of joints), vibandha, jadata (mental retardation)

Sadhyasadhyata – yapya

Treatment protocol

Total duration

Ninety days as given below: 15 days *Matra basti with Mahamasha taila* followed by 15 days gap, 3 such 15 days sessions of matra basti were given during 90 days protocol. Before giving matra basti patient was massaged with mahamasha taia which was followed by shali shastika pinda sweda.

Internal medicine

Ksheerabala taila 101 avartan capsules (1 cap BD) with lukewarm water were given for 90 days.

DISCUSSION

Parameters of growth, goniometric evolution to assess the range of motion (ROM), ashwarth scale to assess spasticity, and CDC grading scale was taken for the assessment of motor milestone.

We can see in figure 1 that muscle spasticity of muscle was decreased, this might be attributed to vataghna effect of mahamasha taila[4] and shalishashastika pinda swedan.[5] Muscle power of affected limbs has also been improved, that could be because of balya effect of kheerabala taila.[6]

Patient was unable to hold his neck before the trial, but he could lift his head when pulled by arms after the completion of trial. Now patient can sit more than 30 seconds leaning forward. She can stand holding a furniture for few seconds, which she was unable to do in the beginning of trial. improvement in milestones might have been achieved by nourishment of *Rasādi dhātus, as well as balya prabhava of Ksheerabala taila*.

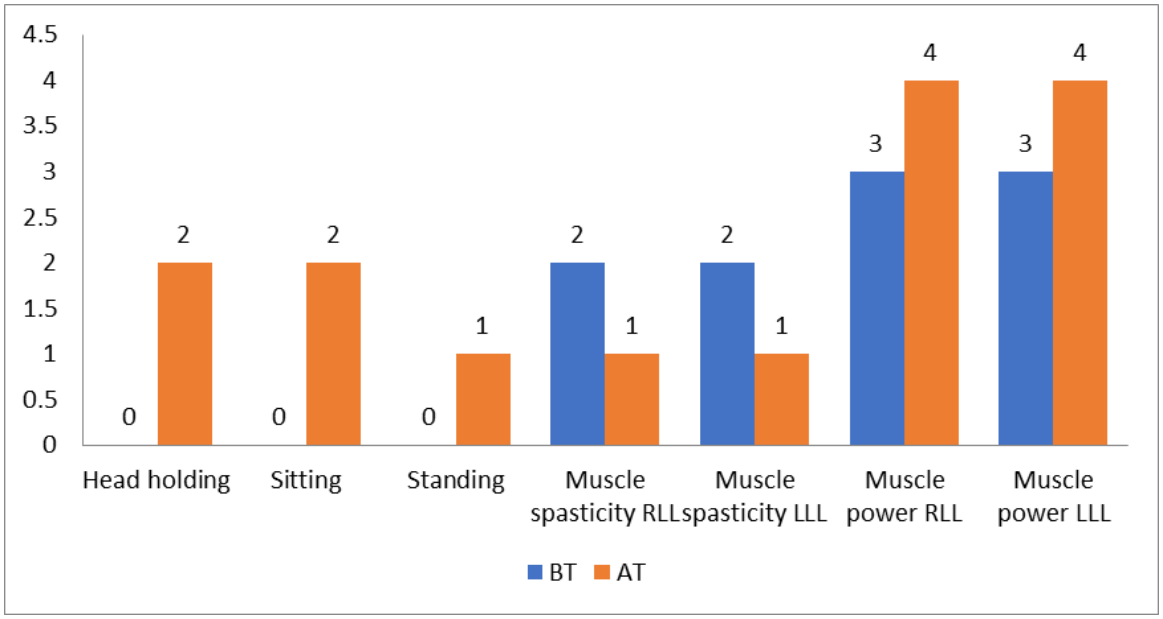


Figure 1.

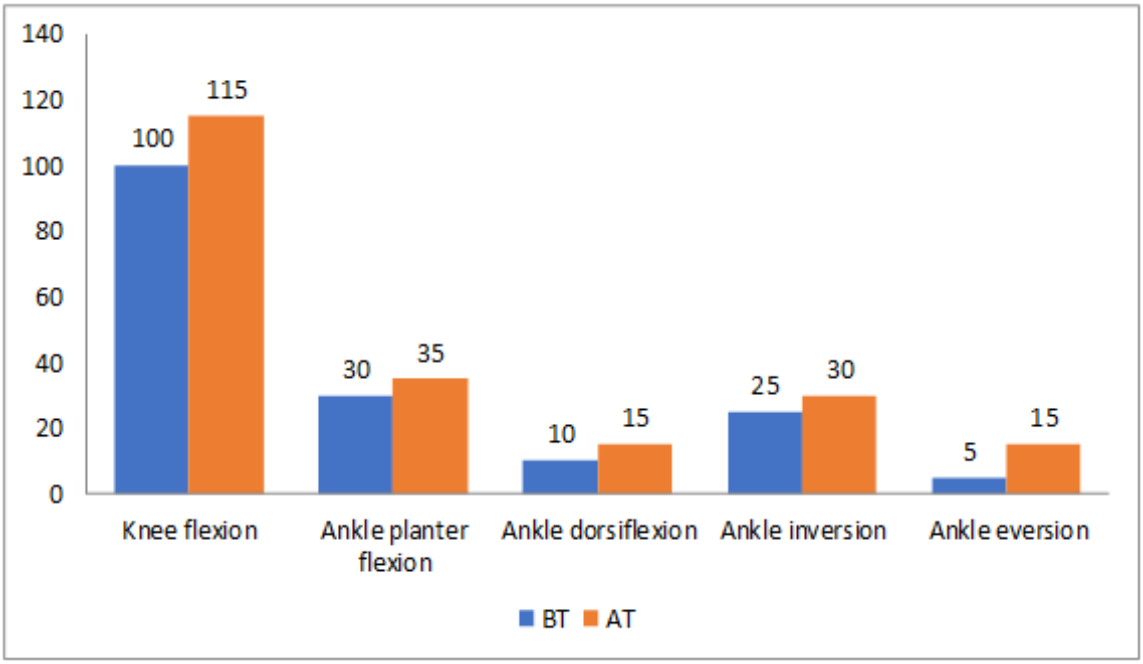


Figure 2.

Figure 2: Knee flexion was improved by 15°. Ankle planter flexion, dorsiflexion and inversion all were improved by 5°, an improvement of 10° was seen in ankle eversion.

This effect might have been achieved due to localized *vātaśamana* by and shashtikashali pinda sweda[7] and systemic *vātaśamana* by *Basti*.[8] Tightness of Achilles tendon and knee joint was reduced and due to that knee joint and ankle ankle joint showed improvement in goniometric evaluation.

CONCLUSION

In this patient, the overall effect was found near 5–10%. As this disorder is incurable, this percentage of improvement also helps the patient to improve the quality-of-life (QOL). Treatment of this kind of condition is important and in that, if we are able to make small improvements in an earlier age, then it will reflect as a major benefit in later age in the form of developing skills. Previously, it was believed that neurons do not repair or rejuvenate after any injury, but the new concept of neuroplasticity says that CNS have the ability to repair their neurons by axonal sprouting to take over the function of damaged neurons.[19] This improvement in patients also supports the concept of Neuroplasticity. Going by the results of this case study, we can conclude that *Ayurvedic Pañcakarma* therapy along with appropriate internal medication can do a lot for the improvement in QOL.

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