EFFICACY OF PANCHKARMA THERAPY AND AYURVEDIC MEDICINE IN THE MANAGEMENT OF QUADRAPLEGIC CEREBRAL PALSY IN CHILDREN – A CASE STUDY

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ABSTRACT
Quadriplegic cerebral palsy in children is common, when mother have any antenatal complication like torch infection, pregnancy induced hypertension etc. This condition may affect directly the brain and his neurons. It is achieved by multifactorial approach of Ayurveda that includes shaman, sanshodhan, rasayan chikitsa, sattvavajaya chikitsa. Aim & Objective: To access the efficacy of Panchakarma therapy and Ayurvedic medicine in the management of quadriplegic cerebral palsy Setting: IPD of Balroga, Rajiv-lochan Ayurvedic medical college & Hospital Chandkhuri, Durg (Chhattisgarh) Method: Panchakarma was done with oral ayurvedic medicines. Assessment was done before and after shodhana and shamana treatment with 30 days follow-up Result: Panchakarma treatment and Ayurvedic medicine is effective in the management of Quadraplegic cerebral palsy and to improve the quality of life of the affected child.

KEYWORDS: Quadriplegic cerebral palsy, Ayurvedic medicine, Udavartana, Abhayang, Chaturbhadra kalpa basti, Shastik-shali panda sweda.

INTRODUCTION
Cerebral palsy is defined as a non progressive neuromotor disorder of cerebral origin.[1] (cerebral palsy (cp) is a diagnostic term used to describe a group of motor syndrome resulting from disorders of early brain development.[2] Although it has historically been considered a static encephalopathy,[3] Cerebral palsy may result from mal-development and disorderly anatomic organization of the brain, perinatal hypoxia, birth trauma, acid base imbalance, indirect hyper-bilirubinemia, metabolic disturbances and intrauterine or acquired infection.[4] Cerebral palsy is the most common and costly form of chronic motor disability that begins childhood with a prevalence of 2/1000. It is also commonly associated with a spectrum of developmental disabilities, including mental retardation, epilepsy, visual abilities, speech, cognitive and behavioral abnormalities. The motor handicap may be least of the child. Quadripareis is more common in term babies, and exhibits severe damage including opisthotonic posture, pseudobulber palsy, feeding difficulties. In Ayurveda, quadriplegic cerebral palsy is compare with bala pakshaghat. According to Acharya kasyapa, phakka roga can compare with cerebral palsy, specially with vyadhij phakka.[5] We can also compare cerebral palsy with skanda graha, which is describe in Sushruta samhita,[6] and Astanga samgahra.[7]

CASE REPORT
A 10 year aged male patient was brought to Rajiv-lochan Ayurvedic college & Hospital Chandkhuri, durg (Chhattisgarh) with complaints of unable to stand and walk without support, associated with lack of strength in upper limbs.

BRIEF HISTORY
Patient was not able to stand and walk without support and also not able to do his daily routine works, passed stool and urine on bed. Patient had 1st episode of convulsion developed at the age of 2nd days, for the same complaint patient admitted to N.I.C.U for 15 days. At the age of 8th month mother was observed that child was not able to hold his neck, so they consulted to nearby hospital, Doctor advised physiotherapy for 1 month, but patient had no relief then mother observed at the age of 3 year that patient was not able to seat without support,
they again consulted to other hospital. Doctor advised him some calcium and vitamin supplement with physiotherapy for 6 month, in this time they consulted to many doctors but they didn’t found any improvement.

**Past history:** History of convulsion at the age of 2\(^{nd}\) day and 8\(^{th}\) year of life.

All the developmental mile stones delayed appropriate for the age, administered with immunization scheduled as per the age. For the same complain, they brought the child to hospital.

**Antenatal History**
Age of mother at the time of conception was 29 years and the father was 34 years. The mother took regular antenatal checkups and took medicine on time. Mother had complain of pregnancy induced hypertension. No history of any kind of infections, diabetes, or seizures was reported.

**Natal History**
Mother had complained of pregnancy induced hypertension, so emergency LSCS was indicated because of fetal distress at 32\(^{th}\) week and 10 days of gestation age. He cried after stimulation, and had a birth weight of 2.1kg.

**Postnatal History**
He had complain of convulsion at the age of 2\(^{nd}\) day, Admitted in NICU for 15 days.

**Family History:** Grandfather has history of convulsion, other family member said to be normal.

**Developmental History**- All milestones are attained Delayed.

<table>
<thead>
<tr>
<th>S. N.</th>
<th>Gross motor</th>
<th>Fine motor</th>
<th>Language</th>
<th>Social</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Neck holding (2 year 4 month)</td>
<td>Bidextrous reach to object (18 month)</td>
<td>Cooing sound (6 month)</td>
<td>Social smile (5 month)</td>
</tr>
<tr>
<td>2.</td>
<td>Sitting with support (4 year)</td>
<td>Unidextrous (4 year)</td>
<td>Monosyllables (6 year)</td>
<td>Recognize to mother (10 month)</td>
</tr>
<tr>
<td>3.</td>
<td>Sitting without support (6year)</td>
<td>Immature pincer grasp (6 year)</td>
<td>Bisyllables (8 year)</td>
<td>Laugh a lot (16 month)</td>
</tr>
<tr>
<td>4.</td>
<td>Stand with support (8 year)</td>
<td>Mature pincer grasp (8 year but not completely developed)</td>
<td>Tell a sentence (Absent)+ slurred speech</td>
<td>Playing with friends (7 year)</td>
</tr>
</tbody>
</table>

**Medical History:** Antiepileptic drug, calcium supplement, Vitamin supplements, physiotherapy.

**Immunization History:** Given as per Schedule

**Dietic History:** Exclusive breast feeding was done upto to age of 4 month, weaning began with boiled potato, fruit juice, banana etc.

**Personal History**
Appetite – Good
Bowel – Twice/day
Micturition – Normal, 3-4 time/day
Sleep – Normal

**On Examination**
General examination

<table>
<thead>
<tr>
<th>Consciousness- conscious</th>
<th>Lymphadenopathy - absent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Icterus-absent</td>
<td>Cyanosis-absent</td>
</tr>
<tr>
<td>Clubbing-absent</td>
<td>Gait-scissoring gait</td>
</tr>
<tr>
<td>Pallor-absent</td>
<td>Eye-squint eye</td>
</tr>
</tbody>
</table>

**Vital sign**
Blood pressure- 100/60mmhg
Respiratory rate: 21/min
Heart rate - 92/min
Temperature -98.4°F

**Respiratory system:** Chest bi- symmetrical, no added sound RR- 21/min

Cardio-vascular system: S1S2 Heard, No murmurs, HR-92/min

**Per-abdomen:** Soft, no any prominent veins, no any oraganomegaly
Central nervous System  
Higher mental functions: patient conscious, slurred speech, memory- intact, hallucination and delusion-absent. 
Cranial nerves: on the basis of examination 
Optic nerve, trigeminal nerve, occulomotor, facial nerve are affected.

Muscle power  
Lower limb- 2/5 and Upper limb- 3/5 
Gait- scissoring attended Muscle tone is hypertonic, ankle clonus- present, babinski sign- present Sensation-normal, hearing-normal, language- slurred speech, co-ordination-normal, Signs of Meningeal Irritation –Nil, pain – absent, rigidity- led pipe rigidity present, knee jerk and ankle jerk both are exaggerated, Spasticity –present.

Investigations  
MRI  
Done on 5-10-16  
MRI shows occipital cortical atrophy and partial agenesis of corpus callosum  
Septate leukomalacia in the left middle cerebral region

EEG  
Done on- 30-7-2013  
Clinical correlation- epileptiform activity restricted OT the left parietal and mid parietal regions

Done on-27-09-2016  
EP evidence s/o generalized epileptiform discharge

Ayurvedic View  
Vata-pradhan tridosh dusti

Diagnosis  
The case was diagnosed as quadriplegic cerebral palsy. Ayurvedic diagnosis is Vyadhij phakka roga.

Assessment Criteria  
Subjective: For assessment the result four symptoms will be kept as parameter.

<table>
<thead>
<tr>
<th>S. N.</th>
<th>Assessment Criteria</th>
<th>BT</th>
<th>1&lt;sup&gt;st&lt;/sup&gt; F/U</th>
<th>2&lt;sup&gt;nd&lt;/sup&gt; F/U</th>
<th>3&lt;sup&gt;rd&lt;/sup&gt; F/U</th>
<th>4&lt;sup&gt;th&lt;/sup&gt; F/U</th>
</tr>
</thead>
<tbody>
<tr>
<td>A.</td>
<td>Spasticity</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>B.</td>
<td>Muscle power</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>C.</td>
<td>Muscle tone</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>D.</td>
<td>Ankle clonus</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>E.</td>
<td>Attack of convulsion</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>F.</td>
<td>Clinical features</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

Treatment Plan/Discussion  

<table>
<thead>
<tr>
<th>S. N.</th>
<th>Shaman chikitsa</th>
<th>Shodhan chikitsa</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Tab. Bramhi vati</td>
<td>1 Tab. TID</td>
</tr>
<tr>
<td></td>
<td>Abhyanga by prasrini oil</td>
<td>Udavartana by Sarasapatripah choorna</td>
</tr>
<tr>
<td>2.</td>
<td>Tab. Swarna vasant malini rasa</td>
<td>½ Tab. TID</td>
</tr>
<tr>
<td></td>
<td>Shastika shali panda sweda</td>
<td>Abhyanga by prasrini oil</td>
</tr>
<tr>
<td>3.</td>
<td>Syp. Bala-aswagandha rista</td>
<td>7.5 ml TID</td>
</tr>
<tr>
<td></td>
<td>Chaturbhadra kalpa basti</td>
<td>Shastika shali panda sweda</td>
</tr>
<tr>
<td>4.</td>
<td>Bramhi grita</td>
<td>3ml TID</td>
</tr>
<tr>
<td></td>
<td>Matra basti with prasrini oil 30 ml Nirud basti (Dashmooda + nirudini+ bala) 300ml</td>
<td>Chaturbhadra kalpa basti</td>
</tr>
<tr>
<td>5.</td>
<td>Follow up- 30 days</td>
<td>Total duration of treatment- 5 month</td>
</tr>
</tbody>
</table>

RESULT AND DISCUSSION  
Effect of Pachakarma therapy and Ayurvedic medicine on symptoms of Quadriplegic cerebral palsy.
In above case study patient got 85% relief from symptoms of quadriples cerebral palsy. Panchakarma therapy and Ayurvedic medicines works astonishingly in this area and can do a spectacular job. Acharya kashyap mentioned basti, snehapan, swedan, and udavartana as a line of treatment in vata prakopa condition of phakka roga.[8] In this case study Mattrabasti 8 days and niruh basti 4 days given according to chatubhaddra kalp basti, which is mentioned by Acharya kashyap in the context of basti karma.[9] Chikitsa has been chosen and they showed good results along mattrabasti with kalyanka ghrita(30 ml), Niruh basti (300ml) prepared with Bala, Aswagndha, Nirgundi, Dashmoola, Abhyanga with prasarini oil, udavartana with sarsap choorna mix with triphala choorna and shiroabhayanga with bramhi ghrita, According to the modern science theory some drugs of active principles are not able to cross the blood brain barrier, because might be they are having lipophobic properties/ action so, we are making the drugs blood brain barrier friendly or they can cross the barrier so we are preparing with saturated fatty acid products (ghee) so, they can cross the blood brain barrier because the ghee having lipophilic action and show their maximum result of the drug. Maximum part of brain is formed by fat so ghrita is also important as nutrition for brain and improve the quality of patient life. Ghrita has a main role in the management of diseases with prominent psychological component. Brahmi being a Medhya drug is recommended for various psychosomatic and psychiatric disorders. Oral medications are tablet bramhi vati 1 tab TID, Bala-aswagandhharisata 7.5 ml TID and bramhi ghrita 3ml TID and bramhi grito 3ml TID, which are stimulate the brain for normal function,. Maximum part of brain is formed by fat so ghrita is also important as nutrition of brain.

CONCLUSION
In this patient, the overall effect was found near 80-85%. As this disorder is increaseable, this percentage of improvement helps in the improvement of the quality of life. 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 sporting to take over the function of damaged neurons. Therefore this improvement in patient also supports the concept of neuroplasticity.

Therefore it can be concluded that Ayurvedic therapy along with oral medications help to improve the strength of the muscle, help to boost the brain activity and improving the quality of life.

REFERENCES