A COMPARATIVE CLINICAL STUDY OF AGNIKARMA AND MARMA CHIKITSA ALONG WITH DASHMOOLOYADI GHAN VATI IN VISHWACHI (CERVICAL SPONDYLOSIS)

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3Assistant Prof., P.G. Department of Shalya Tantra, Rishikul Campus, U.A.U., Haridwar, India.

ABSTRACT

Vishwachi is one of the Vata Nanatmaja Vyadhi mentioned in Ayurvedic texts. In Vishwachi, neck and upper extremities are affected with sign and symptoms like Ruk, Stambha, Toda, Karma Kshaya and Chestha - Aparana of Bahu as different Acharyas described. On the basis of similarity in sign and symptoms, it can be correlated with the disease Cervical spondylosis described in modern medicine. While considering various factors and complications (eg.- opioids, NSAIDs and steroids having various adverse effects) in the management of Vishwachi (Cervical spondylosis), it is essential to assess the different mode of actions of number of Ayurvedic formulations and therapies (which are safe, beneficial and cost effective) insisted by various Ayurvedic literatures (ex.- Agnikarma, Marma Chikitsa etc.) in the management of Vishwachi. In this present study, total 40 patients were randomly selected and divided into two equal groups. 20 patients of Group A treated with Agnikarma and Dashmoolyadi Ghan Vati [2 tablets- (500 mg each), B.D with lukewarm water] and 20 patients of Group B treated with Marma Chikitsa and Dashmoolyadi Ghan Vati [2 tablets- (500 mg each), B.D with lukewarm water]. The data generated in the clinical study was analyzed by applying Wilcoxon signed rank test & paired t test and the comparison of two groups was done by Mann Whitney test & t test. After 4 weeks of treatment it was observed that in group A, marked improvement was noticed in (05) 31.25% patients and moderate improvement was noticed in (11) 68.75 % patients. While in Group B, marked improvement was noticed in (12) 63.16% patients and moderate
improvement was noticed in (07) 36.84% patients. It was found that Marma Chikitsa along with Dashmoolyadi Ghan Vati has better results in the terms of percentage but no significant difference was found statistically between both the therapies. Moreover, both treatment modalities were well accepted by all patients and did not produce any side effect during study period as well as follow up.

**KEYWORDS:** Ayurvedic literatures (ex.-Agnikarma, Marma Chikitsa etc.) in the management of Vishwachi.

1. **INTRODUCTION**

Ayurveda is having a lot of importance in managing several diseases successfully using potential medication and therapies. It is holistic approach to health and medicine that is personalized and based on scientific parameters available in those times. Research is the only way to re-establish old facts with the help of modern methodology. It helps to expand and advance the area of knowledge. In Ayurveda, Surgical science is known as SHALYA TANTRA. Shalya Tantra embraces all processes, aiming at the removal of factors responsible for producing Pain or misery to the body or mind.[1] Vishwachi is one of the Vata Nanatmaja Vyadhi mentioned in Ayurvedic texts. In Vishwachi, neck and upper extremities are affected with sign and symptoms like Ruk, Stambha, Toda, Karma Kshaya and Chestha - Aparana of Bahu as different Acharyas described. The clinical presentation of Vishwachi is similar to Cervical Spondylosis. Cervical Spondylosis is a degenerative condition of the cervical spine found almost universally in persons over 50 years of age.[2] PAIN is the most important feature which should be managed first. In modern medical science, treatment is usually conservative with simple analgesics or non-steroidal anti-inflammatory drugs and steroids but along with various unwanted side-effects. Surgery is considered when the disease is progressive or complications occur. To find out a treatment modality which is efficacious without side effects and also cost effective, a clinical study based on Ayurveda protocols is the need of time. Marma Chikitsa is an important aspect of Ayurvedic treatment where the application of pressure on these Marma points induces the flow of vital energy (Prana) along with a complex system of subtle channels called Nadis.[3] Acharya Sushruta has mentioned Agnikarma as a Para- surgical procedure for acute pain management and Dashmoolyadi Ghan Vati was selected from the Ayurvedic texts given in the treatment of Vishwachi.
2. Conceptual Study

a) Ayurvedic Review

Acharya Sushruta mentioned Vishwachi in Sushruta Samhita Vata Vyadhi Nidana Adhyaya. Vishwachi is explained as Prakupita Vata Dosha affects the Kandara (Tendons) of Tala (palm), Pratyanguli (fingers), and Bahuprusthatah (Dorsal aspect of the upper extremity) in Vata Vyadhi Nidana Adhyaya.\textsuperscript{[4]} It results in loss of arm and forearm functions (limitation of movement). The manifestation of the disease occurs either by Dhatukshaya or Margavrodha or due to agantuja causes (Abhighbata). Improper nourishment is responsible for Dhatukshaya which can be correlated to Cervical spondylosis caused by degenerative changes.

b) Modern Review

Cervical spondylosis is a degenerative condition of cervical spine. It is a disease of old age but it may occur early in persons those susceptible to neck strain because of keeping the neck constantly in one position while reading, writing, working etc. It causes neck pain, stiffness, paresthesia and other related symptoms. Pain is the most important feature to be managed first.

c) Review on Agnikarma

Agnikarma is mentioned for management of severe pain in the skin, muscles, ligaments, bones and joints caused by aggravation of Vata dosha in Sushruta Samhita-Sutra Sthana -12\textsuperscript{th} chapter\textsuperscript{[5]} As Vishwachi is also included under Vata Vyadhi and pain is the most common presenting complaint, so Agnikarma was selected as therapy in Group-A.

d) Review on Marma Chikitsa

Marma Chikitsa is a proven treatment modality to provide instant pain relief. It can be used anywhere, at any time, and without the need for medication. It is a non-invasive procedure, can be practiced any time without any need of special infrastructure and without any cost. Hence, Marma Chikitsa was selected as therapy in Group-B.

e) Review on Dashmoolyadi Ghan Vati

Dashmoolyadi Ghan Vati is mentioned in Bhaishajya Ratnavali Vata Vyadhi Rogadhikar (23rd chapter) in the context of Vishwachi.\textsuperscript{[6]} It was selected as trial drug from for the present study because the drug is purely herbal. Its ingredients are easily available and inexpensive. Most of the ingredients are Vednasthapaka, Shothahara, Vata-Kapha Shamaka and have Deepana Pachana properties.
3. MATERIAL AND METHODS

Clinical Study
The present study contains Aim & Objectives of the study, plan of the study, research design, inclusion and exclusion criteria, data collection and criteria for assessment.

Aim and Objectives of the study
1. The primary goal of the study is to investigate the long term efficacy of Agnikarma and Marma Chikitsa along with Dashmoolyadi Ghan Vati for the patients of Vishwachi (Cervical Spondylosis).
2. To compare safety and efficacy of Agnikarma procedure by Tamra Shalaka and Marma Chikitsa in Vishwachi.
3. To decrease the intensity of pain, stiffness and weakness so that the patient can do his routine works comfortably.
4. To establish and encourage application of Ayurveda treatment modalities and use of herbal medicines.

INCLUSION CRITERIA
1. Patients presenting classical signs and symptoms of Vishwachi (Cervical Spondylosis)
2. X-Ray showing radiological signs for Cervical Spondylosis, confirmed by qualified radiologist.
3. Patients of either sex between 16 years and 70 years.
4. Willingness of patient

EXCLUSION CRITERIA
1. Infectious diseases of the cervical spine
2. Metabolic disorders
3. Fracture or dislocation in cervical region
4. Patients with neoplastic growth
5. Patients with history of trauma
6. Pregnant patients because they are contraindicated for Agnikarma.
7. Suspected cases of CoViD-19

SAMPLE SIZE
Total 40 patients of Vishwachi (Cervical Spondylosis) were selected from O.P.D / I.P.D of
Rishikul Campus Haridwar, Uttarakhand Ayurved University. The study was conducted on randomly divided groups that mean 20 patients in each group on the basis of criteria of Inclusion and Exclusion with detailed clinical history and physical examination and other necessary investigations.

**PLAN OF STUDY**

- **Type of trial**: Interventional
- **Study design**: Randomized parallel group trial

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Plan of Study</th>
<th>Group- A</th>
<th>Group- B</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>No. of patients</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>2.</td>
<td>Therapy</td>
<td>Agnikarma</td>
<td>Marma Chikitsa</td>
</tr>
<tr>
<td>3.</td>
<td>Drug</td>
<td>Dashmoolyadi Ghan Vati</td>
<td>Dashmoolyadi Ghan Vati</td>
</tr>
<tr>
<td>4.</td>
<td>Total sittings of therapy (Agnikarma / Marma Chikitsa)</td>
<td>4 (an interval of 7 days)</td>
<td>3 times in a day</td>
</tr>
<tr>
<td>5.</td>
<td>Drug dose</td>
<td>2 tablets bd after meals Anupana- Lukewarm water</td>
<td>2 tablets bd after meals Anupana- Lukewarm water</td>
</tr>
<tr>
<td>6.</td>
<td>Total duration of treatment</td>
<td>1 month</td>
<td>1 month</td>
</tr>
</tbody>
</table>

- *Dashmoolyadi Ghan Vati* was prepared as per the classical reference mentioned in *Sharangdhar Samhita*.
- For the present study, following *Marmas* were selected to be stimulated.\(^7\)
  
  *Kshipra, Talahridaya, Kurca, Kurcasira, Manibandha, Indravasti, Kurpara, Urvi, Ani, Krikatika and Amsa, Amsaphalaka*

- For *Marma Chikitsa*, Pressure was then applied to each *Marma* for 0.8 seconds and 18-20 times in one sitting.\(^8\)

- **Agnikarma**-

<table>
<thead>
<tr>
<th>Site of Agnikarma</th>
<th>Type of Agnikarma</th>
<th>Selected Dravya</th>
</tr>
</thead>
<tbody>
<tr>
<td>Painful and tender points on nape of neck</td>
<td>Bindu (dot)</td>
<td>Ankush Mukhi Tamra Shalaka (Hook shape Agnikarma probe)</td>
</tr>
</tbody>
</table>

**ASSESSMENT CRITERIA**

<table>
<thead>
<tr>
<th>Subjective Parameters</th>
<th>Objective Parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Neck pain</td>
<td>1. Tenderness over cervical region</td>
</tr>
<tr>
<td>2. Radiation of pain</td>
<td>2. Movements of the neck</td>
</tr>
<tr>
<td>4. Weakness</td>
<td></td>
</tr>
<tr>
<td>5. Paresthesia</td>
<td></td>
</tr>
</tbody>
</table>
INVESTIGATION

1. Routine Investigations
   - Routine blood examination – Hb%, T.L.C., D.L.C., E.S.R.
   - Biochemical blood investigation for – Blood sugar-Fasting and P.P., Serum uric acid
   - Serum calcium
   - HIV, HBsAg and RA factor

2. Radiological Examination
   - X-Ray Cervical spine (Antero - Posterior and lateral / oblique view)
   - MRI (If required)

4. OBSERVATIONS AND RESULTS

GENERAL OBSERVATIONS

<table>
<thead>
<tr>
<th></th>
<th>No. of patients</th>
<th>Total</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Group A</td>
<td>Group B</td>
<td></td>
</tr>
<tr>
<td>Registered</td>
<td>20</td>
<td>20</td>
<td>40</td>
</tr>
<tr>
<td>Completed</td>
<td>16</td>
<td>19</td>
<td>35</td>
</tr>
<tr>
<td>Drop out / LAMA</td>
<td>04</td>
<td>01</td>
<td>05</td>
</tr>
</tbody>
</table>

Maximum number of patients in the present study belonged to 45-65 years (50 %), Hindu (95 %), Females (62.5 %), Middle class family (62.5 %), having an active lifestyle (57.5 %), Married (72.5 %), having vegetarian diet (60 %), having Madhyama Samhanana (92.5 %), having Vata & Vata- Pittaja Prakriti (22.5 %), having Pravara Satva (42.5 %), Ruksha Satmya (52.5 %), having Mandagni (35 %), Kroora Koshtha (40 %), having Alpa Nidra (45 %), addicted to alcohol (22.5 %), belongs to Madhyama Vaya (72.5 %), indulged in Vishama Sthana Shayana, Divaswapna & Langhana (25 %).

EFFECT OF THERAPY
   - Effect of therapy was assessed using Wilcoxon Signed Rank test, paired t test, Mann Whitney U test and t test.
   - If p value > 0.05------ Not significant
   - p value < 0.05 -------- Significant
   - p value <0.01 -------- Highly significant
# Group- A – Agnikarma along with Dashmoolyadi Ghan Vati

<table>
<thead>
<tr>
<th>S. no.</th>
<th>Subjective parameter</th>
<th>Median B.T.</th>
<th>Mean B.T.</th>
<th>S.D. B.T.</th>
<th>W / t</th>
<th>% Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Neck pain</td>
<td>2.00</td>
<td>1.80</td>
<td>0.56</td>
<td>-120.00</td>
<td>70.37</td>
</tr>
<tr>
<td>2.</td>
<td>Radiation of pain</td>
<td>1.00</td>
<td>1.44</td>
<td>0.51</td>
<td>-136.00</td>
<td>86.96</td>
</tr>
<tr>
<td>3.</td>
<td>Stiffness</td>
<td>2.00</td>
<td>1.81</td>
<td>0.40</td>
<td>-136.00</td>
<td>93.10</td>
</tr>
<tr>
<td>4.</td>
<td>Weakness</td>
<td>1.00</td>
<td>1.36</td>
<td>0.50</td>
<td>-105.00</td>
<td>73.68</td>
</tr>
<tr>
<td>5.</td>
<td>Paresthesia</td>
<td>2.00</td>
<td>1.64</td>
<td>0.50</td>
<td>-105.00</td>
<td>69.56</td>
</tr>
<tr>
<td>6.</td>
<td>Clumsy finger movements</td>
<td>1.00</td>
<td>1.37</td>
<td>0.52</td>
<td>-36.00</td>
<td>81.82</td>
</tr>
<tr>
<td>7.</td>
<td>Vertigo</td>
<td>1.00</td>
<td>1.28</td>
<td>0.47</td>
<td>-91.00</td>
<td>72.22</td>
</tr>
<tr>
<td>8.</td>
<td>Tenderness over cervical region</td>
<td>2.00</td>
<td>2.31</td>
<td>0.70</td>
<td>-136.00</td>
<td>62.16</td>
</tr>
<tr>
<td>9.</td>
<td>Movements of the neck</td>
<td>2.50</td>
<td>2.50</td>
<td>0.73</td>
<td>-136.00</td>
<td>57.50</td>
</tr>
<tr>
<td>10.</td>
<td>Neck disability index</td>
<td>16.00</td>
<td>15.62</td>
<td>6.43</td>
<td>10.31</td>
<td>68.4</td>
</tr>
</tbody>
</table>

# Group-B- Marma Chikitsa along with Dashmoolyadi Ghan Vati

<table>
<thead>
<tr>
<th>S. no.</th>
<th>Subjective parameter</th>
<th>Median B.T.</th>
<th>Mean B.T.</th>
<th>S.D. B.T.</th>
<th>W / t</th>
<th>% Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Neck pain</td>
<td>2.00</td>
<td>1.75</td>
<td>0.52</td>
<td>-136.00</td>
<td>75</td>
</tr>
<tr>
<td>2.</td>
<td>Radiation of pain</td>
<td>1.00</td>
<td>1.21</td>
<td>0.42</td>
<td>-190.00</td>
<td>82.61</td>
</tr>
<tr>
<td>3.</td>
<td>Stiffness</td>
<td>2.00</td>
<td>1.53</td>
<td>0.51</td>
<td>-153.00</td>
<td>73.08</td>
</tr>
<tr>
<td>4.</td>
<td>Weakness</td>
<td>1.00</td>
<td>1.50</td>
<td>0.52</td>
<td>-105.00</td>
<td>76.19</td>
</tr>
<tr>
<td>5.</td>
<td>Paresthesia</td>
<td>2.00</td>
<td>1.77</td>
<td>0.44</td>
<td>-91.00</td>
<td>70.65</td>
</tr>
<tr>
<td>6.</td>
<td>Clumsy finger movements</td>
<td>2.00</td>
<td>1.58</td>
<td>0.51</td>
<td>-66.00</td>
<td>68.42</td>
</tr>
<tr>
<td>7.</td>
<td>Vertigo</td>
<td>1.00</td>
<td>1.33</td>
<td>0.50</td>
<td>-45.00</td>
<td>91.67</td>
</tr>
<tr>
<td>8.</td>
<td>Tenderness over cervical region</td>
<td>1.25</td>
<td>2.00</td>
<td>0.74</td>
<td>-190.00</td>
<td>84.21</td>
</tr>
<tr>
<td>9.</td>
<td>Movements of the neck</td>
<td>2.00</td>
<td>2.00</td>
<td>0.77</td>
<td>-136.00</td>
<td>77.78</td>
</tr>
<tr>
<td>10.</td>
<td>Neck disability index</td>
<td>10.00</td>
<td>13.58</td>
<td>8.58</td>
<td>4.09</td>
<td>77.13</td>
</tr>
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</table>

# COMPARISON BETWEEN BOTH GROUPS

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Group</th>
<th>N</th>
<th>Mean Rank</th>
<th>Sum of ranks</th>
<th>Mann-Whitney (U)</th>
<th>p-value</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neck pain</td>
<td>Group A</td>
<td>16</td>
<td>15.43</td>
<td>231.5</td>
<td>111.5</td>
<td>0.74896</td>
<td>N.S</td>
</tr>
<tr>
<td></td>
<td>Group B</td>
<td>19</td>
<td>16.53</td>
<td>264.5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Radiation of pain</td>
<td>Group A</td>
<td>16</td>
<td>20.38</td>
<td>326</td>
<td>114</td>
<td>0.21498</td>
<td>N.S</td>
</tr>
<tr>
<td></td>
<td>Group B</td>
<td>19</td>
<td>16</td>
<td>342</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Stiffness</td>
<td>Group A</td>
<td>16</td>
<td>21.84</td>
<td>349.5</td>
<td>58.5</td>
<td>0.0056</td>
<td>S</td>
</tr>
<tr>
<td></td>
<td>Group B</td>
<td>19</td>
<td>12.44</td>
<td>211.5</td>
<td></td>
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<tr>
<td>Weakness</td>
<td>Group A</td>
<td>16</td>
<td>13.57</td>
<td>190</td>
<td>85</td>
<td>0.56868</td>
<td>N.S</td>
</tr>
<tr>
<td></td>
<td>Group B</td>
<td>19</td>
<td>15.43</td>
<td>203</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Paresthesia</td>
<td>Group A</td>
<td>16</td>
<td>12.86</td>
<td>180</td>
<td>75</td>
<td>0.65994</td>
<td>N.S.</td>
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<tr>
<td></td>
<td>Group B</td>
<td>19</td>
<td>14.25</td>
<td>171</td>
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<td></td>
<td></td>
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<tr>
<td>Clumsy finger</td>
<td>Group A</td>
<td>16</td>
<td>10.69</td>
<td>85.5</td>
<td>46.5</td>
<td>0.93624</td>
<td>N.S</td>
</tr>
<tr>
<td>movements</td>
<td>Group B</td>
<td>19</td>
<td>10.38</td>
<td>124.5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---------------------------------</td>
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<td>-------</td>
</tr>
<tr>
<td>Vertigo</td>
<td>Group A</td>
<td>16</td>
<td>10.75</td>
<td>150.5</td>
<td>45.5</td>
<td>0.28462</td>
<td>N.S</td>
</tr>
<tr>
<td></td>
<td>Group B</td>
<td>19</td>
<td>13.94</td>
<td>125.5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tenderness over cervical region</td>
<td>Group A</td>
<td>16</td>
<td>15.66</td>
<td>250.5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Group B</td>
<td>19</td>
<td>19.97</td>
<td>379.5</td>
<td>114.5</td>
<td>0.2187</td>
<td>N.S</td>
</tr>
<tr>
<td>Movements of the neck</td>
<td>Group A</td>
<td>16</td>
<td>16.16</td>
<td>258.5</td>
<td>122.5</td>
<td>0.47152</td>
<td>N.S</td>
</tr>
<tr>
<td></td>
<td>Group B</td>
<td>19</td>
<td>18.69</td>
<td>336.5</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**OVERALL EFFECT OF BOTH THERAPIES**

<table>
<thead>
<tr>
<th>Range of Effect</th>
<th>Group- A</th>
<th>Group- B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cured (100 %)</td>
<td>00</td>
<td>00</td>
</tr>
<tr>
<td>Marked improvement (75-100 %)</td>
<td>05 (31.25%)</td>
<td>12 (63.16%)</td>
</tr>
<tr>
<td>Moderate improvement (50-75 %)</td>
<td>11 (68.75%)</td>
<td>07 (36.84%)</td>
</tr>
<tr>
<td>Mild improvement (25-50 %)</td>
<td>00</td>
<td>00</td>
</tr>
<tr>
<td>Unchanged (&lt; 25 %)</td>
<td>00</td>
<td>00</td>
</tr>
</tbody>
</table>

- None of the patients were unchanged in both Groups.
- It is found that *Marma Chikitsa* along with *Dashmoolyadi Ghan Vati* is more effective than *Agnikarma* along with *Dashmoolyadi Ghan Vati* in Vishwachi.
- In neck stiffness, *Agnikarma* along with *Dashmoolyadi Ghan Vati* was found more effective.

5. DISCUSSION

Discussion on Observations

The observation have been made on different parameters of study like age group, gender, incidence, different Prakriti of patients, which is discussed as follows –

1. Age

It was found that maximum patients (50%) belonged to age group 46-65 years; (this is the phase when loss of *Dhatus and Shareer bala* occurs, which vitiates *Vata dosha* which is the main responsible factor causing *Vishwachi* (Cervical spondylosis) followed by 25-45 years age group (47.5%) (Because of daily wear and tear over time due to improper posture for long time linked to excessive use of cellphones or computers and neck strain associated with occupation), (2.5%) patients were found related to 66-85 years age group. The cervical spondylosis is a disease of old age but because older persons confront multiple barriers in
accessing health care as limited incomes or lack of family support along with lack of awareness towards health; less people are found in the that group.

2. Religion
Above table shows that maximum patients (95%) belonged to Hindu religion, while rest of the patients (5%) belonged to Muslim religion. There seems no specific relation between the religion and this disease. It may be due to the predominance of Hindu community in the particular population.

3. Gender
In this series, the maximum patients were Females (62.5 %), followed by (37.5 %) Male patients. Causes like osteoporosis & malnourishment play an important role as risk factor for females but cervical spondylosis is found more common in males due to neck strain related to occupation. But because sample size is small, so these findings are insignificant.

4. Occupation
It was found that maximum (57.5%) patients were having an active lifestyle or occupation and (42.5%) patients were having sedentary lifestyle. Most of the patients were having an occupation involving continuous neck strain and exertion due to work or faulty neck posture.

5. Socio-economic status
In this series maximum patients belongs to middle class family (62.5 %). (25%) patients were poor and (12.5%) patients were rich. There seems no association of the disease with socio-economic status; a person belongs to any of these classes exposed to continuous neck exertion may develop cervical spondylosis.

6. Addiction
It was found that (22.5%) patients were addicted to alcohol, (17.5%) patients were addicted to smoking and (5%) patients were addicted to tobacco and (55%) patients were having no addiction. No significant association of any addiction to the disease was found in this observation.

7. Marital Status
It was observed that maximum patients were Married (72.5 %) and un-married patients were less (27.5%). This observation shows Cervical Spondylosis is predominant in middle age and old age people.
8. **Ahara**

It was found that (52.5 %) patients in this study were having *Ati Ruksha Ahara*, (20 %) patients were having *Alpa Ahara*, (15 %) patients were having *Ati Sheeta Ahara* and (2.5 %) patients were having *Laghu Ahara*. These faulty dietary habits vitiate *Vata Dosha* and acts as a *Hetu* for *Vata-Vyadhi* (*Vishwachi*).

9. **Nidra** (Sleep pattern)

It was found that maximum (45%) patients were having *Alpa Nidra* (Disturbed sleep), (20%) patients indulged in *Diwaswapna* and (10%) patients were habitual of *Ati Nidra*. Disturbed pattern of sleep is associated with *Vatadi Dosha Prakopa* and the *Samprapti* of *Vishwachi*.

10. **Satmya**

It was found that maximum patients were of *Ruksha Satmya* (52.5 %). Their diet was lacking of *Ghrita* and *Ksheeradi Snigdha bhava*. Regular intake of *Ruksha Ahara* does not cause optimum *Dhatu-poshana* thus it leads to gradual degeneration of all the *Dhatus* and acts as a *Nidana* for *Vishwachi*.

11. **Prakriti**

It was observed that maximum patients were having *Vataja & Vata-Pittaja Prakriti* (22.5 %), followed by *Kaphaja Prakriti* (20 %), *Vata- Kaphaja* (12.5 %), *Sannipataja* (10 %), *Pittaja* (10 %) and rest were *Pitta-Kaphaja Prakriti* (7.5%). As *Kapha* vitiates *Vata* by *Margavrodha* and *Vata dosha* has direct role in causing *Vishwachi* (Cervical spondylosis), so the maximum patients were having *Prakriti* involving *Vata & Kapha Dosha*.

12. **Vihara**

It was observed that maximum (27.5%) patients were habitual of, *Divaswapna*, followed by *Visham sthana Shayana* and *Langhana* (25% each) while (12.5%) patients were practicing excessive *Vyayama*, 7.5 % patients used to do *Adhwagamana* and (2.5%) patients were practicing *Plavana*. All the above activities aggravate *Vata Dosha* and contribute in the pathogenesis of *Vishwachi*.
Discussion on effects of therapies

A) Discussion on subjective parameters

- Effect on Neck pain

In Group- A: The median score of Neck pain was 2.00 before treatment which got reduced to 0.00 after the treatment and is statistically highly significant (p<0.001). The overall effect on the same is found to be (70.37%).

In Group- B: The median score of Neck pain was 2.00 before treatment which got reduced to 0.00 after the treatment and is statistically highly significant (p<0.001). The overall effect on the same is found to be (75 %).

✓ Basic element responsible for causation of Ruja (pain) is Vata dosha.
✓ Agnikarma gives relief in pain by its Ushna Guna & by increasing metabolic activity in the tissues and clearance of accumulated catabolic waste.
✓ (Kshipra Marma & Kurpara Marma) are very effective in neck pain.[10]
✓ (Indrabasti Marma) stimulation decreases neck & shoulder pain.[11]
✓ Marma Chikitsa also gives relief in pain by inhibition of P substance by Gate control theory and secreting a number of opioid like substances.
✓ Dashmoolyadi Ghan Vati due to Vata Shamaka Guna relieves pain.

- Effect on Radiation of pain -

In Group- A: The median score of Radiation of pain was 1.00 before treatment which got reduced to 0.00 after the treatment and is statistically highly significant (p<0.001). The overall effect on the same is found to be (69.56 %).

In Group- B: The median score of Radiation of pain was 1.00 before treatment which got reduced to 0.00 after the treatment and is statistically highly significant (p<0.001). The overall effect on the same is found to be (82.61 %).

✓ Cervical radiculopathy is caused by degeneration of the cervical spine and pinched nerve due to local inflammation.
✓ Agnikarma resolves inflammation by increasing circulation and metabolic activity in the affected area.
✓ (Kshipra Marma) stimulation reduces pain in upper limbs.[12]
✓ Marma Chikitsa removes blockage in Srotasa and enhances Dhatuposhana, thus prevents further degeneration.
The components of Dashmmolyadi Ghan Vati possess anti-inflammatory actions. It also has Brihana Guna- so it helps to prevent degeneration.

- **Effect on Stiffness**

  **In Group- A:** The median score of Stiffness was 2.00 before treatment which got reduced to 0.00 after the treatment and is statistically highly significant ($p<0.001$). The overall effect on the same is found to be (93.10 %).

  **In Group- B:** The median score of Stiffness was 2.00 before treatment which got reduced to 0.00 after the treatment and is statistically highly significant ($p<0.001$). The overall effect on the same is found to be (73.08 %).

- **Stambha** is due to Sheeta & Ruksha Guna of Vata.

- Significant difference was found in comparing both the groups. Agnikarma along with Dashmoolyadi ghan vati was found more effective than Marma Chikitsa along with Dashmoolyadi Ghan Vati.

- The Ushna Guna of Agnikarma would have pacified vitiated Vata dosha.

- **Marma Chikitsa.**
  - *(Krikatika Marma)* relieves stress in head & neck and helps in treating neck stiffness and fatigue. It improves neck posture.\(^2\)
  - *(Ansa Marma)* relaxes the tension in neck region.\(^3\)
  - *(Ansaphalaka Marma)* reduces stiffness in the neck.\(^4\)

- **Dashmoolyadi Ghan Vati** possesses Vata Shamaka guna, so it also helps in reducing the symptom.

- **Effect on Weakness**

  **In Group- A:** The median score of Weakness was 1.00 before treatment which got reduced to 0.00 after the treatment and is statistically highly significant ($p<0.001$). The overall effect on the same is found to be (73.68 %).

  **In Group- B:** The median score of Weakness was 1.00 before treatment which got reduced to 0.00 after the treatment and is statistically highly significant ($p<0.001$). The overall effect on the same is found to be (76.19 %).

- **Agnikarma** due to Teekshna, Sookshma Guna, removes blockage in Srotasa, which leads to optimum Dhatuposhana. Hence it reduces weakness.

- **(Kurchashira Marma)** helps in weakness of arms.\(^5\)
- Marma Chikitsa also removes blockage in Srotasa and also increases Pranic flow.
- Dashmoolyadi Ghan Vati possesses Deepana, Pachana Guna. So it leads to Agnideepti and it also has Balya, Brihana Guna. So it helps in reducing weakness.

- **Effect on Paresthesia**

  **In Group- A:** The median score of Paresthesia was 2.00 before treatment which got reduced to 0.50 after the treatment and is statistically significant (p<0.05). The overall effect on the same is found to be (69.56 %).

  **In Group- B:** The median score of Clumsy finger movements was 2.00 before treatment which got reduced to 0.00 after the treatment and is statistically highly significant (p<0.001). The overall effect on the same is found to be (70.65 %).

- Aggaravated Vata Dosha is the responsible factor to cause paresthesia- (pin and needle sensation)
- Agnikarma pacifies Vata dosha by Ushna Guna.
- (Kshipra Marma) is beneficial in numbness & tingling sensation.[17]
- (Kurchshira Marma) stimulation decreases numbness and paresthesia.[18]
- Marma Chikitsa helps in relaxation of the surrounding muscles and ligaments by direct pressure on specific points.
- Dashmoolyadi Ghan Vati possesses Vata Shamaka Guna thus it reduces the symptoms.

- **Effect on Clumsy finger movements**

  **In Group- A:** The median score of Clumsy finger movements was 1.00 before treatment which got reduced to 0.00 after the treatment and is statistically significant (p<0.05). The overall effect on the same is found to be (81.82 %).

  **In Group- B:** The median score of Clumsy finger movements was 2.00 before treatment which got reduced to 0.50 after the treatment and is statistically highly significant (p<0.001). The overall effect on the same is found to be (68.42 %).

- Chronic paresthesia leads to clumsy finger movements.
- Because both the therapies along with Dashmoolyadi Ghan Vati reduces paresthesia.
- Hence finger movements are more found more co-ordinated.
- (Kurcha Marma) is beneficial for tendons and aponeurosis of hand & firearm.[19]
(Kurpara Marma) improves functions of radial & ulnar nerves. [20]

- **Effect on Vertigo**

  **In Group- A:** The median score of Vertigo was 1.00 before treatment which got reduced to 0.00 after the treatment and is statistically highly significant (p<0.001). The overall effect on the same is found to be (72.22 %)

  **In Group- B:** The median score of Vertigo was 1.00 before treatment which got reduced to 0.00 after the treatment and is statistically significant (p<0.05). The overall effect on the same is found to be (91.67 %).

- The receptors in muscles and joints send signals to the brain about neck movements. When this is disrupted due to pain (associated with Cervical spondylosis), it causes dizziness or vertigo. (Cervical vertigo)

- The responsible factor causing Vertigo (Bhram) is *Vata Dosha*.

- *Agnikarma* pacifies *Vata Dosha* by *Ushna Guna*.

- *Marma Chikitsa* balances all the vitiated *Doshas*.

- The ingredients of *Dashmoolyadi Ghan Vati* possesses *Vata Shamaka Guna*.

**A) DISCUSSION ON OBJECTIVE PARAMETERS**

- **Effect on Tenderness over cervical region**-

  **In Group- A:** The median score of Tenderness over cervical region was 2.00 before treatment which got reduced to 1.00 after the treatment and is statistically highly significant (p<0.001). The overall effect on the same is found to be (62.16 %).

  **In Group- B:** The median score of Tenderness over cervical region was 2.00 before treatment which got reduced to 0.31 after the treatment and is statistically significant. The overall effect on the same is found to be (84.21 %).

- *Agnikarma* locally acts at tender points by increased clearance of accumulated pain producing substances and resolves inflammation.

- *Marma Chikitsa* relaxes surrounding tissues and secretes prostaglandin inhibitors, thus it reduces tenderness.

- *Dashmoolyadi Ghan Vati* possesses Analgesic and Anti-inflammatory actions. So it also helps in reducing tenderness.
• **Effects on Movements of the neck**

**In Group- A:** The median score of Movements of the neck was 2.50 before treatment which got reduced to 1.00 after the treatment and is statistically highly significant (p<0.001). The overall effect on the same is found to be (57.50 %).

**In Group- B:** The median score of Movements of the neck was 2.00 before treatment which got reduced to 0.44 after the treatment and is statistically highly significant (p<0.001). The overall effect on the same is found to be (77.78 %).

- Movements of neck are limited due to pain & stiffness.
- Agnikarma due to *Ushna, Teekshna, Sookshma Guna* – reduces pain & stiffness, so neck movements are less painful.
- *(Ansaphalaka Marma)* improves neck movements.[21]
- *(Ani Marma)* helps in restricted movements of forearm also.[22]
- *Marma Chikitsa* reduces pain by inhibition of P substance and secreting endorphins, hence it is also beneficial in restricted neck movements.
- *Dashmoolyadi Ghan Vati* possesses *Vata & Kapha Shamaka* properties. So it aids in the effect of therapies.

• **Effect on N.D.I**

**In Group- A:** The mean score of Neck disability index was 16.00 before treatment which got reduced to 4.50 after the treatment and is statistically highly significant (p<0.001). The overall effect on the same is found to be (68.40 %).

**In Group- B:** The mean score of Neck disability index was 13.58 before treatment which got reduced to 3.10 after the treatment and is statistically highly significant (p<0.001). The overall effect on the same is found to be (77.13 %).

- Neck disability is caused by symptoms like - pain, stiffness, restricted painful movements, paresthesia etc.
- Because both the therapies along with *Dashmoolyadi Ghan Vati* reduce all these symptoms.
- So N.D.I is also reduced.
Probable mode of action of *Marma Chikitsa*

Instant pain relief is the motive of *Marma* therapy. Stimulation of *Marma* can produce analgesia by secreting a number of prostaglandin inhibitors, endorphins, enterferon and other opioid-like substances which are hundred times more potent than opium. Instant pain relief by *Marma* therapy is possible within no time. Pain management aims at minimizing the distress, feeling of unrest and improving the quality of life. A cardinal point in the management of pain is that it should be holistic and patient-centered in its application. This can be fulfilled in the *Ayurvedic* approach only in terms of *Marma Chikitsa*.

Probable mode of action of *Agnikarma*

\[Agni\]

(Therapeutic heat)

- Dilate the vessels
- Improve the elasticity of Connective tissues
- Viscosity of matrix decreases
- Metabolism of cell improves for every increase in One degree Celsius within the physiological limits, the metabolic activity Increases by 10%

Better blood Circulation

Anabolism increases

Increased clearance of accumulated catabolic waste (lactic acid)

Resolves inflammation

Relief in pain

Probable mode of action of *Dashmoolyadi Ghan Vati*

Dashmoola is *Tridoshahara*, *Agnideepaka*, *Aampachaka*, *Brahmhana* and *Balavardhana* so in the condition of *Vishwachi*, it gives relief in signs and symptoms and helps to reverse the pathogenesis.
Bala is best to be known for pacifying Vata dosha thus relieves pain as Ruk (pain) is the character of aggravated Vata dosha, and also kshayahara so it promotes strength of the patient.

Masha is also Vatahara and Brihmana thus useful in degenerative conditions.

While considering the chemical composition and pharmacological actions, a majority of drugs exhibit analgesic and anti-inflammatory actions that can give the patients symptomatic relief from pain, tenderness and restricted movements of neck and arm. Some drugs are having Antioxidant property, which are known as free-radical scavengers. Studies have proven that antioxidants have neuro-protective and neuro-generative actions.

6. CONCLUSION

After detailed discussion on the observed data through the study, following conclusions were drawn.

- Vishwachi (Cervical Spondylosis) is one of the most common ailments affecting people of middle and old age. Females are found more affected than males.
- In the present study, an attempt was made to tackle the condition by Marma Chikitsa and Agnikarma along with Dashmoolyadi Ghan Vati, which is mentioned in Ayurvedic treatise.
- Dashmoolyadi Ghan Vati used as a common drug in both groups, which has definitely great role in the management of Vishwachi.
- All the contents of Dashmoolyadi Ghan Vati are easily available and it was palatable to the patients because of its tablet form.
- Group A, which has Agnikarma and Dashmoolyadi Ghan Vati showed overall percentage of effect was 72.09%, whereas in Group B, which has Marma Chikitsa and Dashmoolyadi Ghan Vati showed overall percentage of effect was 77.67%.
- There was no record of aggravation of symptoms during and after the treatment.
- No patient in this study remained unchanged after treatment in both groups.
- In follow up period of one month, no recurrence of pain was reported by max. number of patients in both groups.
- Agnikarma and Marma Chikitsa can be done as an OPD procedure because both are cost effective, requires minimum equipment and safe.
- We can conclude that basis of percentage relief; Marma Chikitsa along with Dashmoolyadi Ghan Vati (Group B) was found more effective for Vishwachi (Cervical Spondylosis). But no statistically significant difference found between both the therapies.
Marma Chikitsa is easy, safe, non-invasive technique, and very convenient for the patient as after taking proper training he can do it by himself at home, thereby reducing the hospital visit.

RECOMMENDATIONS FOR FURTHER STUDY
1. Duration of the treatment and the follow up period of the clinical study should be more than 1 month for the better assessment of treatment modalities, because the reduction in the degenerative process cannot be assessed within this short period.
2. Sample size should be large, which can provide much more authentic and sharper data regarding the efficacy.
3. The further studies may include more sophisticated methods of investigations like M.R.I. & C.T. scan to observe the changes during and after treatment.

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