CLINICAL EVALUATION OF EFFECT OF BHARANGYADI AVALEHA IN MANAGEMENT OF TAMAK SHWASA

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Abstract: In the Current Study 30 Patients of Tamaka Shwasa have been selected randomly divided in two groups. The patients showing classical symptoms of Tamaka Shwasa such as Shwasakruchhrata (Dyspnoea), Kasa (Cough), Ghur-Ghurak Shabda (Wheezing or Rhonchi) During night, Kasten Shleshma Moksha (Difficult in Expectoration), Kasten Bhashya (Difficult in speech) etc. were included in this study. For the present study we were given Bharangyadi Avaleha orally. It reduces Respiratory Rate effectively and increases Expansion of Chest, Breath Holding Time, and Peak Expiratory Flow Rate & Sustained Maximal Inspiration which was highly significant statistically as compared with Tab. Deriphyllin. Out of 30 patients included in Group A none patients showed total relief in symptoms, 7 patients was markedly improved (50 to 75%), 21 patients were improved (25 to 50%), 2 patients were unchanged (less than 25%). Out of 30 patient included in Group B none patient showed total relief in symptom, 3 patients were markedly improved (50 to 75%), 26 patients were Improved (25 to 50%), 1 patients were Unchanged (less than 25%). At the end of the study it was found that Bharangyadi Avaleha in Group A is more effective than in Group B.

Key Words: Tamaka Shwasa, Bharangyadi Avaleha, Bronchial Asthma

Introduction: “Science of Life” known as “Ayurveda”. In the literature of Ayurveda there are various chapters, which deal with behavioral & dietary changes according to diurnal changes. It suggests if one follows these rules we can lead to healthy life for longer period. Shwasa Propounded by Lord Atreya in Charka Samhita.[1] It is a disease of Pranvaha Srotasas. Shwasa arises due to dust, smoke, wind residing in cold place using cold water physical exertion, intake of rough food, irregular meals, vitiation of Ama. Bronchial Asthma has 4 to 5 % of the population in United States is affected. Data from the Centers of Disease control and prevention suggest that 10 to 11 million persons had acute attack in 1998, which resulted in 13.9 million outpatient visits, 2 million request for urgent care, and 423,000 hospitalization which are total >$6 billion.[2] Nearly 5 to 10% population suffer from it. In India prevalence of asthma has been found to be around 6%. [3] This disease can start at any age, but in a majority it starts before 10 years of age. It is twice more common amongst boys than girls, whereas in adults the male–female ratio is usually equal. This alarming raise in the prevalence of Tamaka Shwasa can be accounted to factors such as Atmospheric pollution, rapid environmental changes, adaptation of newer dietetic preparations and tremendous psychological stress.

Aim and Objectives: To evaluate the efficacy of Bharangyadi Avaleha in Tamaka Shwasa.

Materials and Methods

Group A: 30 Patients were treated with Bharangyadi Avaleha

Dose: 5 gm Twice a Day, after meal for 15 days

Group B: 30 Patients were treated with “Tab. Deriphyllin”

Dose: 100 mg Thrice a day.

Design: A randomized, open label, controlled clinical trial will be conducted on diagnosed patients.

Inclusion Criteria
Age - 16 to 60 years
Sex - Both male & female
Newly onset uncomplicated Bronchial Asthma
• Mild & Moderate Bronchial Asthma
• Samtamaka Shwasa

Exclusion Criteria: Patients having following criteria-
• Bronchial Carcinoma
• Emphysema
• Chronic Pulmonary Obstructive Disease
• Pleural Effusion
• Tuberculosis
• Status Asthmatics
• Cardiac Asthma

Objective Criteria
• X-Ray chest PA view to rule out other respiratory disease
• Peak Flow Meter for lung capacity
• Spirometry for vital capacity of lung

Preparation of Drug: Avaleha Kalpana was selected for present study on the basis of references of Acharya Charaka:

कृष्णां पत्तिकेः शूलेन्द्रियाः सरस्वतीं तत्तः / (Cha.Chi.17/89)
तस्मात नामार्थनृवृद्धिप्रदे देशा तोहा न निष्कर्ष/ /Cha.Chi.17/120

These are specific indications of Leha Kalpana given by Acharya. In present study Avaleha Kalpana has been prepared as Gudavaleha. For this purpose especially Purana Guda was used. According to opinion of Bhavaprakasha new Guda increases Kapha & Shvasa both, while Purana Guda is explained as Laghu Pathya, Balya, Vataghna, Agra, Agnivriddhikar & Rakta Prasadaka property

Contents of Bharangyadi Avaleha
Bharangi (Mula) : 1 part
Haritaki (Fruit) : 1 part
Dashmool (Mula) : 1 part
Trijat : 1/20 part (Prakshepa)
Guda : Half of total kwath dravya

S. N. Name Rasa virya Vipaka Guna Doshaghnata
1 Bharangi Katu Tikta Kashaya Ushna Katu Ruksa Ushna Laghu Kaphavatashamaka
2 Haritaki Kashaya, Katu, Tikta, Madhur, Amla Ushna Madhura Ruksa Laghu Anulomana Tridosha shamaka Specially Vatanulomana
3 Dashmool Madhura, katu ushna madhur Vata kaphashamaka Vata kaphashamaka
4 Trijat Katu, tikta ushna katu Vata shamaka, deepana Vata shamaka, deepana
5 Guda Madhura shita madhura Balya Balya

Table 1 Showing effect of therapy on physical parameter of 30 patients of Tamaka Shwasa in Group A

<table>
<thead>
<tr>
<th>Physical parameter</th>
<th>Mean BT</th>
<th>Mean AT</th>
<th>% of relief</th>
<th>SD</th>
<th>SE</th>
<th>t value</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respiratory rate</td>
<td>22.86</td>
<td>18.56</td>
<td>18.80</td>
<td>2.03</td>
<td>0.37</td>
<td>8.62</td>
<td>&lt; 0.05</td>
</tr>
<tr>
<td>Expansion of chest</td>
<td>83.86</td>
<td>85.06</td>
<td>1.43</td>
<td>0.49</td>
<td>0.12</td>
<td>13.83</td>
<td>&lt; 0.05</td>
</tr>
<tr>
<td>Breath Holding Time</td>
<td>10.53</td>
<td>12.2</td>
<td>15.82</td>
<td>0.76</td>
<td>0.14</td>
<td>11.14</td>
<td>&lt; 0.05</td>
</tr>
<tr>
<td>Peak Expiratory Flow rate</td>
<td>165.33</td>
<td>195.66</td>
<td>18.34</td>
<td>11.08</td>
<td>2.02</td>
<td>16.5</td>
<td>&lt; 0.05</td>
</tr>
<tr>
<td>Sustained Maximal Inspiration</td>
<td>3.7</td>
<td>5.8</td>
<td>53.98</td>
<td>0.45</td>
<td>0.08</td>
<td>25.37</td>
<td>&lt; 0.05</td>
</tr>
</tbody>
</table>

Table 2 Showing effect of therapy on physical parameter of 30 patient of Tamaka Shwasa in Group B

<table>
<thead>
<tr>
<th>Physical parameter</th>
<th>Mean BT</th>
<th>Mean AT</th>
<th>% of relief</th>
<th>SD</th>
<th>SE</th>
<th>t value</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respiratory rate</td>
<td>22.9</td>
<td>19.43</td>
<td>15.15</td>
<td>2.02</td>
<td>0.38</td>
<td>9.4</td>
<td>&lt; 0.05</td>
</tr>
<tr>
<td>Expansion of chest</td>
<td>83.86</td>
<td>84.86</td>
<td>1.9</td>
<td>0.52</td>
<td>0.09</td>
<td>11.77</td>
<td>&lt; 0.05</td>
</tr>
<tr>
<td>Breath Holding Time</td>
<td>10.43</td>
<td>11.83</td>
<td>13.09</td>
<td>0.62</td>
<td>0.11</td>
<td>9.6</td>
<td>&lt; 0.05</td>
</tr>
<tr>
<td>Peak Expiratory Flow rate</td>
<td>170.66</td>
<td>192.66</td>
<td>12.89</td>
<td>10.38</td>
<td>1.89</td>
<td>12.16</td>
<td>&lt; 0.05</td>
</tr>
<tr>
<td>Sustained Maximal Inspiration</td>
<td>14.3</td>
<td>5.66</td>
<td>40.44</td>
<td>0.49</td>
<td>0.09</td>
<td>17.77</td>
<td>&lt; 0.05</td>
</tr>
</tbody>
</table>

Effect of Bharangyadi Avaleha (Group-A) & Tab. Deriphylline (Group-B) on physical Parameters

Respiration Rate

Group A: The mean grade score of Respiratory rate was 22.86 at the start of the treatment which was reduced to 18.56 at the end of treatment its ‘t’ value is 12.14 (P<0.05%) which is statistically significant.

Group B: The mean grade score of Respiratory rate was 22.9 at the start of the treatment which was reduced to 19.43 at the end of treatment its ‘t’ value is 13.20 (P<0.05%) which is statistically significant.

Expansion of Chest

Group A: The mean grade score of Expansion of chest was 83.86 at the start of the treatment which
was increase to 85.06 at the end of treatment its ‘t’ value is 9.2 (P<0.05%) which is statistically significant.

**Group B:** The mean grade score of Expansion of chest was 83.86 at the start of the treatment which was increase to 84.86 at the end of treatment it’s value is 9.2 (P<0.05%) which is statistically significant.

**Breath Holding Time**

**Group A:** The mean grade score of Breath holding time was 10.53 at the start of the treatment which was increased to 12.20 at the end of treatment its ‘t’ value is 10.37 (P<0.05%) which is statistically significant.

**Group B:** The mean grade score of Breath holding time was 10.46 at the start of the treatment which was increased to 11.83 at the end of treatment its ‘t’ value is 1.80 (P<0.05%) which is statistically significant.

**Peak Expiratory Flow Rate**

**Group A:** The mean grade score of Peak Expiratory flow rate was 165.33 at the start of the treatment which was increased to 195.66 at the end of treatment its ‘t’ value is 14.16 (P<0.05%) which is statistically significant.

**Group B:** The mean grade score of Peak Expiratory flow rate was 170.66 at the start of the treatment which was increased to 192.66 at the end of treatment its ‘t’ value is 38.96 (P<0.05%) which is statistically significant.

**Sustained Maximal Inspiration**

**Group A:** The mean grade score of Sustained maximal inspiration was 3.7 at the start of the treatment which was increased to 5.8 at the end of treatment its ‘t’ value is 4.61 at (P<0.05%) which is statistically significant.

**Group B:** The mean grade score of Sustained maximal inspiration was 14.03 at the start of the treatment which was increased to 40.44 at the end of treatment its ‘t’ value is 4.6 (P<0.05%) which is statistically significant.

### Table 3 Statistical analysis of symptoms of patient of Tamaka Shwasa

<table>
<thead>
<tr>
<th>Symptoms</th>
<th>Sum of ranks of BT</th>
<th>Sum of ranks of AT</th>
<th>No of pairs</th>
<th>Z</th>
<th>Comment (Critical value of z at 5% level of significance=1.96)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shwasakricchata</td>
<td>52</td>
<td>20</td>
<td>30</td>
<td>12.76</td>
<td>Highly significant</td>
</tr>
<tr>
<td>Kasa</td>
<td>49</td>
<td>17</td>
<td>30</td>
<td>12.80</td>
<td>Highly significant</td>
</tr>
<tr>
<td>Ghur –Ghur Shabda</td>
<td>63</td>
<td>27</td>
<td>30</td>
<td>12.59</td>
<td>Highly significant</td>
</tr>
<tr>
<td>Kasten shleshma moksha</td>
<td>55</td>
<td>20</td>
<td>30</td>
<td>12.71</td>
<td>Highly significant</td>
</tr>
<tr>
<td>Krucchren Bhashyatsa</td>
<td>46</td>
<td>18</td>
<td>30</td>
<td>12.84</td>
<td>Highly significant</td>
</tr>
<tr>
<td>Anidra</td>
<td>41</td>
<td>16</td>
<td>30</td>
<td>12.92</td>
<td>Highly significant</td>
</tr>
</tbody>
</table>

### Table 4 Statistical analysis of symptoms of patient of Tamaka Shwasa

<table>
<thead>
<tr>
<th>Symptoms</th>
<th>Sum of ranks of BT</th>
<th>Sum of ranks of AT</th>
<th>No of pairs</th>
<th>Z</th>
<th>Comment (Critical value of z at 5% level of significance=1.96)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shwasakricchata</td>
<td>53</td>
<td>22</td>
<td>30</td>
<td>12.74</td>
<td>&lt; 0.05 Highly significant</td>
</tr>
<tr>
<td>Kasa</td>
<td>52</td>
<td>23</td>
<td>30</td>
<td>12.76</td>
<td>&lt; 0.05 Highly significant</td>
</tr>
<tr>
<td>Ghur –Ghur Shabda</td>
<td>55</td>
<td>21</td>
<td>30</td>
<td>12.49</td>
<td>&lt; 0.05 Highly significant</td>
</tr>
<tr>
<td>Kasten shleshma moksha</td>
<td>60</td>
<td>21</td>
<td>30</td>
<td>12.64</td>
<td>&lt; 0.05 Highly significant</td>
</tr>
<tr>
<td>Krucchren Bhashyatsa</td>
<td>52</td>
<td>24</td>
<td>30</td>
<td>12.53</td>
<td>&lt; 0.05 Highly significant</td>
</tr>
<tr>
<td>Anidra</td>
<td>48</td>
<td>21</td>
<td>30</td>
<td>12.59</td>
<td>&lt; 0.05 Highly significant</td>
</tr>
</tbody>
</table>

**Shwasakricchata**

**Group A:** It was observed in 30 patients of Group A i.e. 100% there was 61.53% relief observed after treatment. At the end of treatment its ‘Z’ value is 12.76 (P<0.05%) which is statistically significant.

**Group B:** It was observed in 30 patients of Group A i.e. 100% there was 58.49% relief observed after treatment. At the end of treatment its ‘Z’ value is 12.76 (P<0.05%) which is statistically significant.

**Ghur-Ghurakshabda**

**Group A:** It was observed in 30 patients i.e. 100% there was 57.14% relief observed after treatment. At the end of treatment its ‘Z’ value is 12.59 (P<0.05%) which is statistically significant.

**Group B:** It was observed in 30 patients i.e. 100% there was 61.81% relief observed after treatment. At the end of treatment its ‘Z’ value is 12.49 (P<0.05%) which is statistically significant.

**Kasten shleshma moksha**

**Group A:** It was observed in 30 patients i.e. 100% there was 63.63% relief observed after treatment. At the end of treatment its ‘Z’ value is 12.71 (P<0.05%) which is statistically significant.
Group B: It was observed in 30 patients i.e. 100% there was 65.00% relief observed after treatment. At the end of treatment its ‘Z’ value is 12.64 (P<0.05%) which is statistically significant.

Krechren Bhashya

Group A: It was observed in 30 patients i.e. 100% there was 60.86% relief observed after treatment. At the end of treatment its ‘Z’ value is 12.84 (P<0.05%) which is statistically significant.

Group B: It was observed in 30 patients i.e. 100% there was 60.97% relief observed after treatment. At the end of treatment its ‘Z’ value is 12.92(P<0.05%) which is statistically significant.

Anidra

Group A: It was observed in 30 patients i.e. 100% there was 53.84% relief observed after treatment. At the end of treatment its ‘Z’ value is 12.53 (P<0.05%) which is statistically significant.

Group B: It was observed in 30 patients i.e. 100% there was 56.25% relief observed after treatment. At the end of treatment its ‘Z’ value is 12.59 (P<0.05%) which is statistically significant.

Discussion

Features like appetite, digestion, weight gain, improved due to improved nutrition at the cellular level by deepan-pachan (carminative and digestive) and Agnivardhan (increase digestive power of individual) properties of Pippali improved nutrition to each and every body tissue results in improvement in features like general and mental feeling of well being, ability to work and fatigue Bharangyadi Avaleha through Vata-kapha pacifying, Srotoshodhan and Kapha Nissarana properties makes the pathway clear for proper circulation of Vata thus relieving various respiratory signs and symptoms. It was observed that Respiratory Rate reduces significantly. Expansion of Chest, Breath Holding Time & Sustained maximum inspiration increases significantly in Group A as compared to Group B. No side effects were observed from the drug during the present study in both groups.

Conclusion: During the comparative study values of both the Groups has been compared and the conclusion were drawn. This it seems that the significant effect of Bharangyadi Avaleha (Group A) is more effective than Tab. Deriphyllin (Group B). On the basis of this study, it can be concluded that trial drug, “Bharangyadi Avaleha” is very much effective in the management of respiratory diseases as an adjuvant. No untoward effects of the drugs were noted during the trial and follow-up period.

References