EVALUATION OF EFFECT OF KRISHNADI CHOORNA IN MANAGEMENT OF TAMAK SHWASA

Bhairav B. Tawshikar¹*, Anil K. Burley²

1. Assistant Professor, Kayachikitsa Dept., C.S.M.S.S. Ayurved College, Aurangabad, M. S.
2. Professor, Kayachikitsa Dept., C.S.M.S.S. Ayurved College, Aurangabad, M. S.

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Article Received on</td>
<td>1st November 2013</td>
</tr>
<tr>
<td>Article Revised on</td>
<td>6th December 2013</td>
</tr>
<tr>
<td>Article Revised on</td>
<td>22nd January 2014</td>
</tr>
<tr>
<td>Article Revised on</td>
<td>13th February 2014</td>
</tr>
<tr>
<td>Article Revised on</td>
<td>12th March 2014</td>
</tr>
<tr>
<td>Article Accepted on</td>
<td>14th March 2014</td>
</tr>
</tbody>
</table>

All articles published in IJAAM are peer-reviewed and can be downloaded, printed and distributed freely for non-commercial purpose (see copyright notice below).

© 2013 IJAAM

This is an Open Access article distributed under the terms of the Creative Commons Attribution License (http://creativecommons.org/licenses/by-nc-nd/3.0/deed.en_US), which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

EVALUATION OF EFFECT OF KRISHNADI CHOORNA IN MANAGEMENT OF TAMAK SHWASA

ABSTRACT
In the current study 60 patients of Tamak Shwasa have been selected randomly divided in two groups. The patients showing classical symptoms of Tamak Shwasa such as Shwasakruchhrata (Dyspnoea), Kasa (Cough), Ghur-Ghurak Shabda (Wheezeing or Rhonchi) during night, Kasten Shleshma Moksha (Difficult in Expectoration), Kasten Bhashya (Difficult in speech), Anidra (Insomnia) etc. were included in this study. For the present study we were given Krishnadi Choorna orally. It reduces Respiratory Rate effectively & 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 were markedly improved (50 to 75%), 21 patients were improved (25 to 50%), 2 patients were unchanged (less than 25%). Out of 30 patients included in Group B none patient showed total relief in symptoms, 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 Krishnadi Choorna in Group A is more effective than in Group B.

KEY-WORDS- Tamak Shwasa, Krishnadi Choorna, 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 Charak Samhita[1] It is a disease of Pranvaha Srotas. 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 Tamak Shwasa can be accounted to factors such as Atmospheric pollution, rapid environmental changes, adaptation of newer dietetic preparations and tremendous psychological stress.

Address for Correspondence
Bhairav B. Tawshikar
Assistant Professor, Kayachikitsa Dept., C.S.M.S.S. Ayurved College, Aurangabad, M. S. Mob no. +91 9967282076
Email – dr.bhairav@rediffmail.com

Aim and Objectives:
To evaluate the efficacy of Krishnadi Choorna in Tamak Shwasa,

Methods and Materials:
Group A: - 30 Patients were treated with “Krishnadi Choorna”
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
The patients having signs & symptoms of Tamak Shwasa as mentioned by Charak[4] are as follows:
- Shwasakruchhrata (Dyspnoea)
- Kasa (Cough)
- Ghur-Ghurak Shabda (Wheezeing or Rhonchi) During night.
- Kasten Shleshma Moksha (Difficult in Expectoration)
- Kasten Bhashya (Difficult in Speech)
- Anidra (Insomnia)

Exclusion Criteria:
- Age – below 16 & above 65 yrs.
- Patients having with signs & symptoms of Cardiac & Renal Asthma.
Patients suffering from Neurological disorders like epilepsy, hemorrhagic stroke, Meningitis.
Patients having Psychological disorders.
Patients having Malignancies.
Patients having Hypertension.
Pregnancy & Lactating mother.
Patient suffering structural lung disease like Tuberculosis, Carcinoma of respiratory tract.

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
- ESR
- Eosinophil Count

Preparation of Drug:
The drug was prepared in the dept. of Rasashastra and Bhaishyja Kalpana, CSMSS Ayurved Mahavidyalaya, Aurangabad. Contents of Krishnadi Choorna [4] are as follows
- Pippali – 1 part
- Saindhav – 1 part

Pippali: Piper longum: Piperine 4 to 5% pipisterol, pipartine. Two alkaloids piperalongumine and piperlonguminine and isobutylamide of piperic acid respectively an unidentified steroid, reducing sugar, glycosides, sesamin and methyl 3,4,5 trimethoxy cinnamate (roots).[6]

Saindhav Lavan [7]
Common salts, or simply, salt is the name given to the varied natural and industrial forms of sodium chloride. In the pure state, it is composed of sodium (NaCl) with 39.4 per cent sodium and 60.6 per cent chlorine. But it is often found mixed with small quantities of Mg, Ca, K compounds, etc. Salt is very widely distributed and abundant. Salt occurs as extensive deposits of rock salts, as salt solutions or brines, as efflorescent, earthy crusts, and as sublimation products near volcanoes. Of these types only the first two are of commercial importance. Rock salt occurs in sedimentary rocks, while natural brines of various concentrations occur in sea –water contains on the average about 3.33 per cent in the polar seas to 3.55 per cent and upwards near the equator.

Table 1 Showing effect of therapy on physical parameter of 30 patients of Tamak 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>0.69</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 Tamak Shwasa in Group B

<table>
<thead>
<tr>
<th>Physical Parameter</th>
<th>Mean BT</th>
<th>Mean AT</th>
<th>% of change</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>0.36</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>1.19</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>10.46</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>14.03</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 Krishnadi Choorna (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.

References:
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 its ‘t’ 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 (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 Showing effect of therapy on Hb, WBC, Neutrophil, Eosinophil & ESR Group A

<table>
<thead>
<tr>
<th>Investigation</th>
<th>Mean BT</th>
<th>Mean AT</th>
<th>SD</th>
<th>SE</th>
<th>t value</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Haemoglobin</td>
<td>10.67</td>
<td>10.8</td>
<td>0.2</td>
<td>0.03</td>
<td>5.66</td>
<td>&lt; 0.05</td>
</tr>
<tr>
<td>WBC</td>
<td>6930</td>
<td>7063.33</td>
<td>75.80</td>
<td>13.85</td>
<td>9.6</td>
<td>&lt; 0.05</td>
</tr>
<tr>
<td>Neutrophil</td>
<td>52.10</td>
<td>53.86</td>
<td>2.89</td>
<td>0.52</td>
<td>6.66</td>
<td>&lt; 0.05</td>
</tr>
<tr>
<td>Lymphocyte</td>
<td>34.73</td>
<td>36.30</td>
<td>1.53</td>
<td>0.27</td>
<td>10.98</td>
<td>&lt; 0.05</td>
</tr>
<tr>
<td>Eosinophil</td>
<td>7.06</td>
<td>4.50</td>
<td>1.28</td>
<td>0.23</td>
<td>11.56</td>
<td>&lt; 0.05</td>
</tr>
<tr>
<td>Erythrocyte Sedimentation rate (ESR)</td>
<td>16.9</td>
<td>12.83</td>
<td>2.37</td>
<td>0.43</td>
<td>9.44</td>
<td>&lt; 0.05</td>
</tr>
</tbody>
</table>

Table 4 Showing effect of therapy on Hb, WBC, Neutrophil, Eosinophil & ESR of Group B

<table>
<thead>
<tr>
<th>Investigation</th>
<th>Mean BT</th>
<th>Mean AT</th>
<th>SD</th>
<th>SE</th>
<th>t value</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Haemoglobin</td>
<td>12.48</td>
<td>12.61</td>
<td>0.75</td>
<td>0.13</td>
<td>1.07</td>
<td>&lt; 0.05</td>
</tr>
<tr>
<td>WBC</td>
<td>6863.33</td>
<td>6946.66</td>
<td>61.02</td>
<td>11.15</td>
<td>6.9</td>
<td>&lt; 0.05</td>
</tr>
<tr>
<td>Neutrophil</td>
<td>61.53</td>
<td>60.13</td>
<td>0.51</td>
<td>0.09</td>
<td>30.00</td>
<td>&lt; 0.05</td>
</tr>
<tr>
<td>Lymphocyte</td>
<td>34.13</td>
<td>36.50</td>
<td>2.12</td>
<td>0.38</td>
<td>8.15</td>
<td>&lt; 0.05</td>
</tr>
<tr>
<td>Eosinophil</td>
<td>3.66</td>
<td>3.06</td>
<td>0.95</td>
<td>0.17</td>
<td>7.82</td>
<td>&lt; 0.05</td>
</tr>
<tr>
<td>Erythrocyte Sedimentation rate (ESR)</td>
<td>19.7</td>
<td>16.2</td>
<td>0.74</td>
<td>0.13</td>
<td>29.46</td>
<td>&lt; 0.05</td>
</tr>
</tbody>
</table>

Effect of Krishnadi Choorna (Group-A) & Tab. Deriphylline (Group-B) on Haematological Parameters

Haemoglobin:
Group A: The mean grade score of Haemoglobin was 10.67 at the start of the treatment which was increase to 10.80 at the end of treatment its ‘t’ value is 5.66 (p<0.05%) which is statistically significant.
Group B: The mean grade score of Haemoglobin was 12.48 at the start of the treatment which was increase to 12.61 at the end of treatment its ‘t’ value is 1.07 (p<0.05%) which is statistically significant.

WBC:
Group A: The mean grade score of White Blood cell was 6930 at the start of the treatment which was reduce to 7063.33 at the end of treatment its ‘t’ value is 13.85 (P<0.05%) which is statistically not significant.
Group B: The mean grade score of White Blood cell was 6863.33 at the start of the treatment which was reduce to 6946.66 at the end of treatment its
‘t’ value is 6.9 (p<0.05%) which is statistically not significant.

Neutrophil:
Group A: The mean grade score of Neutrophil was 52.10 at the start of the treatment which was reduce to 53.86 at the end of treatment its ‘t’ value is 6.66 (p<0.05%) which is statistically significant.
Group B: The mean grade score of Neutrophil was 61.53 at the start of the treatment which was reduce to 60.13 at the end of treatment its ‘t’ value is 30 (p<0.05%) which is statistically significant.

Lymphocyte:
Group A: The mean grade score of Lymphocyte was 34.73 at the start of the treatment which was reduce to 36.30 at the end of treatment its ‘t’ value is 10.98 (p<0.05%) which is statistically significant.
Group B: The mean grade score of Lymphocyte was 61.53 at the start of the treatment which was reduce to 58.49% after treatment. At the end of treatment its ‘Z’ value is 12.76 (P<0.05%) which is statistically significant.

Table 5 Statistical analysis of symptoms of patient of Tamak Shwasa Wilcoxon - matched pairs signed ranks test:

<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</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 Shelsma Moksha</td>
<td>55</td>
<td>20</td>
<td>30</td>
<td>12.71</td>
<td>Highly Significant</td>
</tr>
<tr>
<td>Krucchren Bhashyata</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 6 Statistical analysis of symptoms of patient of Tamak Shwasa Wilcoxon - matched pairs signed ranks test:

<table>
<thead>
<tr>
<th>Symptoms</th>
<th>Sum of BT</th>
<th>Sum of AT</th>
<th>No. of Pairs</th>
<th>Z</th>
<th>Comment</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 Shelsma 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>Kastena Bhashyata</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>

Effect of Krishnadi Choorna (Group-A) & Tab.Deriphylline (Group-B) on Subjective Parameters

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 12.74 (P<0.05%) which is statistically significant.

Kasa:-
Group A: It was observed in 30 patients i.e. 100% there was 65.30% relief observed after treatment. At the end of treatment its ‘Z’ value is 12.80 (P<0.05%) which is statistically significant.
Group B: It was observed in 30 patients i.e. 100% there was 55.76% relief observed after treatment. At the end of treatment its ‘Z’ value is 12.80 (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.

Kastenshesma moksa:

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.

Krcchren 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 56.25% 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 61.81% relief observed after treatment. At the end of treatment its 'Z' value is 12.49 (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 Krishnadi Choorna through Vata-kapha pacifying, Srotoshodhan and Kapha Nisarana 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. Haemtocrit value of Hb increases significantly. Lymphocyte, Neutrophils & ESR reduces significantly in Group A as compared to Group B. Mild changes were shown in WBC & Eosinophil count. 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 Krishnadi Choorna (Group A) is more effective than Tab. Deriphyllin (Group B). On the basis of this study, it can be concluded that trial drug, "Krishnadi Choorna" 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:


CITE THIS ARTICLE AS –


Source of Support – Nil

Conflict of Interest – None Declared