EVALUATION AND EFFICACY OF SHARAPUNKHA MULA IN KAPHAJA KASA

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ABSTRACT
It has been said “Jagateva Vanoushadham” i.e. each dravya in the universe acts as a medicine. Ayurveda believes in the management of disease with Trisutra i.e. Hetu, Linga, Oushadha and the major account of the treatment is done by the Oushadha only. This clinical study attempts to evaluate the efficacy of Sharapunkha mula in kaphaja Kasa. Based on the theoretical and clinical symptomatology, Kaphaja kasa was correlated to chronic bronchitis and Sharapunkha (Theprosia purpurea. linn) was taken as trial drug. For the purpose of clinical study, a total of 30 patients were registered into two trial groups. In the first group, Sharapunkha mula churna 3-6 g B.D. with luke warm water was given whereas the second group was administered Sharapunkha mula kwatha 20 ml. B.D. Kapha Nishtivana, Kasa Vega, Rug Vedana and Shira Shoola were taken as subjective parameters and Hb%, RBC, WBC, ESR were taken as objective parameters. All the patients were assessed before and after treatment. The trial drug Sharapunkha mula showed highly significant results in both subjective and objective parameters. On comparing the studies between the two groups, group B showed significant results than group A i.e. Sharapunkha mula kwatha is more effective than the Sharapunkha mula churna in treating kaphaja kasa. The study concluded that the trial drug Sharapunkha mula kwatha is more efficacious as compared to churna.

Keywords: Chronic bronchitis, Kaphaja kasa, Sharapunkha, Theprosia purpurea

INTRODUCTION
According to our ancient Ayurvedic texts, prana is related with life; therefore any abnormality in its function leads to disturbance of all the body functions as prana is sarvagata. Prana flows along with rakta throughout the body providing nutrition to all body tissues, so its significance in this disease is of utmost importance, though kasa has remained only as a minor and neglected problem in this era, it is one of the most common disease and one of the pranavaha srotodusti vikara. Kasa may develop as an independent disease, may be a lakshana associative to other disease and sometimes may develop as upadrava of a disease. Breathing is the most important action of prana vaha srotas, without which
one cannot survive; we exchange the respiratory gases with the exothermal atmosphere almost 16 times per minute, that makes prana vaha srotas to be one of the exposed srotas of our body and hence vulnerable to dushti. According to Sushruta, Bhavaprakasha, Yogaratnakar and Madhav Nidana a description of kasa is that, due to the nidana sevana vitiation of prana vayu takes place and this get mixed with udana vayu which causes abnormal, forceful expulsion of vayu from the mouth creating peculiar sound which is similar to that of sound produced by broken bronze vessel\textsuperscript{1,2,3,4}. Kasa has been described under various categories in the classics of Ayurveda– as an independent disease. Depending upon nature of Kasa it can be classified into two important varieties, Shushka Kasa and Ardra Kasa. The Kasa, which is not associated with kapha nishtivana, comes under shushka Kasa whereas Ardra Kasa is associated with kapha nishtivana or expectoration. The kaphaja Kasa comes under Ardra variety of Kasa. Vata and Kapha are the two key pathological factors involved in the samprapti of Kaphaja Kasa\textsuperscript{5}. The clinical features of kaphaja kasa mimic very well with chronic bronchitis which is characterized by productive cough due to excessive mucus secretion in the bronchial tree not caused by local broncho pulmonary disease on most of the days for at least three months of the year, for at least two consecutive years\textsuperscript{6}.

In Ayurvedic texts a wide range of medicines and different lines of treatment for the management of kaphaja Kasa are suggested. Several herbs have been described in Ayurvedic literature one among them is Sharapunkha \textsuperscript{7,8}. Smoke of dried sharapunkha mula is an excellent remedy for cough\textsuperscript{9}. In this present study an attempt has been made to evaluate efficacy of Sharapunkha mula in kaphaja kasa by means of a comparative study between sharapunkha mula churna and sharapunkha mula kwath with a view to find out a therapeutically efficacious, safer, cost effective and an easily available drug.

Aim & Objectives:
1. To evaluate the clinical efficacy of Sharapunkha mula churna with luke warm water in kaphaja Kasa.
2. To evaluate the clinical efficacy of Sharapunkha Mula kwatha in kaphaja Kasa.
3. To compare the efficacy of sharapunkha mula churna and sharapunkha mula kwatha.

Material and Methods
Study Protocol:
1. Conceptual
The available literature was scrutinized for the study of kasa w.s.r to Chronic Bronchitis in various Ayurvedic and Modern texts.
2. Clinical Study
• Trial type
Randomized trial
• Sample size:
Total 30 patients (15 in each Group) were registered fulfilling all the inclusion criteria.
• Selection Criteria
Patients suffering from kaphaja kasa were selected from OPD and IPD of DGM Ayurvedic Medical College, Hospital and Research center, Gadag.
• Posology
A. Group A - Sharapunkha mula churna 3-6 g B.D. with luke warm water.
B. Group B - Sharapunkha mula kwatha 20- ml. B.D.
• Criteria for selection of patients
A. Inclusion criteria:
a) Patients in the age group between 20 to 60 years were selected.
b) Patients having sign and symptoms of kasa as per classical texts.
c) Selection of patients was irrespective of sex, work and socio-economic class.
B. Exclusion criteria:
a) Pregnant women were excluded from the trial.
b) Patients having kasa as a symptom of other disease were excluded.
c) Patients having complications such as heart disease, pulmonary T.B. Malignancy of the lungs, pneumonia, pleural effusion, HTN, D.M, S.T.D. were excluded.

d) Patients taking allopathic or other medications were also excluded.

- **Criteria of assessment**

Improvement in associated symptoms was assessed by scoring and gradation method based on subjective and objective parameters of kaphaja kasa.

**A. Subjective parameters:**
- Kapha Nishtivana
- Kasa Vega.
- Rug Vedana.
- Shira Shoola.

**B. Objective parameters:**
For the assessment of objective improvement,
- Hb %
- WBC Count.
- RBC Count.
- E.S.R.

- **Study duration**
7 days and follow up of 15 days.
- 1st assessment – Before the treatment
- 2nd assessment – 3rd day after initiation of medicine
- 3rd assessment - 7th day after treatment
- 4th assessment – 15th day (end of follow up)
- To assess the overall 1st and 4th assessment were considered.

**VIII. Statistical Analysis:**
Statistical analysis was done for subjective and objective parameters before treatment, after treatment, and Follow up. Analysis was done by calculating Mean, Standard Deviation (S.D), Standard Error (S.E), t-Value and P- Value at 0.001 levels.

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**RESULT AND DISCUSSION**

The clinical study entitled “Evaluation of efficacy of Sharapunkha mula in Kaphaja Kasa” was conducted in post graduation and research center of Sri. DGM Ayurvedic Medical College and Hospital, Gadag. The study has also made an attempt to co-relate kaphaja Kasa with chronic bronchitis. Kaphaja kasa is a kapha Pradhana vyadhi with the main culprit dosha Vata. Kasa is caused by pratiloma gati of vayu because of srotas obstruction by kapha prakopa. Acharya Charaka has explained the etiology of particular doshaj kasa. Modern science has mentioned pollution, smoking of cigarettes, allergens, pollen grains, dust, cold weather as its etiological factors etc. which can be co-related with the normal etiology of kasa. As far as the pathogenesis is concerned, first of all hyperplasia (sanchaya) of the mucus glands occur, followed by thickness and distension (prakopa) of the large airways. The mucus secreted by the mucus glands and the goblet cells in the large airways are coughed out (prasara) whereas in the small airways it causes obstruction of the lumen, forming a mucus plug (sthanasamsharya). Later on, Increase in the obstruction of the small airways is perpetuated causing thickening of bronchioles by fibrosis and muscular hypertrophy resulting in cough and expectoration (vyakta). If this condition is not treated, then the lesion may spread and produce complications (bheda). In this clinical study after observing the result of subjective and objective parameters statistically, Sharapunkha mula has yielded excellent results in both groups, On the other hand the trial drug of group B is more effective as compared to group A. The Sharapunkha kwath kalpana is therapeutically more efficacious over churna as kwath is a decoction in which the water soluble extracts are obtained through boiling water. The extraction of active constituents from an herb to water medium is easy at a high temperature. Moreover, when kwath is administered empty stomach the maximum absorption of water soluble active principles occurs through stomach and intestines when compared to churna.

**Probable Mode of action of drug:**
Since Samhita period, Sharapunkha has been used as medicine. Nighantu’s have described wide range of therapeutic properties of the plant and have indicated it in Kasa, Shwas, Jeerna jwara, Pleeha vriddhi, Yakruta vriddhi and Rasayana. Kasa is a
kapha vataja disease and sharapunkha has been mentioned as Kapha vata shamaka\textsuperscript{16}. Sharapunkha has tikta, kashsaya rasa\textsuperscript{17, 18} which is also kaphahara. The ushna veerya and katu vipaka\textsuperscript{19} of the drug is also responsible for its kapha hara as well as vata hara action, which reduces the avarodha and aids in vatamulomana and owing to this vata anulomaka action it rectifies the pratiloma gati of vayu. Sharapunkha has also been mentioned as Anti inflammatory, Analgesic, Antibacterial and an Antioxidant\textsuperscript{20}.

**Comparative Statistical results of Subjective parameters:**

By comparing the studies between the two groups, group B showed significant results than group A i.e. Sharapunkha mula kwatha is more effective than Sharapunkha mula churna in treating kaphajā kasa. Group B was statistically significant at (p<0.001) in all the subjective parameters except Rug Vedana.

### Table 1: Kapha Nishtivana

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Group</th>
<th>Mean</th>
<th>SD</th>
<th>SE</th>
<th>PSE</th>
<th>T value</th>
<th>P value</th>
<th>Remarks</th>
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<tbody>
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<td>2.333</td>
<td>1.112</td>
<td>1.299</td>
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<td>0.485</td>
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<td>B</td>
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<td>1.06</td>
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<td></td>
</tr>
<tr>
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<td>A</td>
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<td>0.99</td>
<td>0.266</td>
<td>0.352</td>
<td>0.948</td>
<td>&gt;0.05</td>
<td>NS</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>1.8</td>
<td>0.861</td>
<td>0.231</td>
<td>0.294</td>
<td>0.224</td>
<td>&gt;0.05</td>
<td>NS</td>
</tr>
<tr>
<td>AF</td>
<td>A</td>
<td>0.6</td>
<td>0.632</td>
<td>0.17</td>
<td>0.294</td>
<td>0.224</td>
<td>&gt;0.05</td>
<td>NS</td>
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<tr>
<td></td>
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</table>

The mean effect of ‘Kapha nishtivana’, in group-A, before treatment was 2.333 with S.D. 1.112 is reduced to 1.466 with S.D. 0.99 and after the follow-up is reduced to 0.6 with S.D. 632. In group-B, before treatment was 2.533 with S.D. 1.06 is reduced to 1.8 with S.D. 0.861 and after the follow-up is reduced to 0.666 with S.D. 899.

### Table 2: Kasa Vega

<table>
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<th>T value</th>
<th>P value</th>
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<td>2.266</td>
<td>0.798</td>
<td>0.214</td>
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<td>0.198</td>
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<td>A</td>
<td>1.666</td>
<td>0.617</td>
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<td>0.473</td>
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<td>NS</td>
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<tr>
<td></td>
<td>B</td>
<td>1.8</td>
<td>0.861</td>
<td>0.231</td>
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</tr>
<tr>
<td>AF</td>
<td>A</td>
<td>1.00</td>
<td>0.534</td>
<td>0.143</td>
<td>0.223</td>
<td>0.6</td>
<td>&gt;0.05</td>
<td>NS</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>0.866</td>
<td>0.639</td>
<td>0.172</td>
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</tbody>
</table>

The mean effect of ‘Kasa Vega” in group-A, before treatment was 2.266 with S.D. 0.798 is reduced to 1.666 with S.D. 0.617 and after the follow-up is reduced to 1.0 with S.D. 534. In group-B, before treatment was 2.333 with S.D. 0.975 is reduced to 1.8 with S.D. 0.861 and after the follow-up is reduced to 0.866 with S.D. 639.

### Table 3: Rug Vedana

<table>
<thead>
<tr>
<th>Criteria</th>
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<th>SD</th>
<th>SE</th>
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<th>T value</th>
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<td>1.046</td>
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<td>0.425</td>
<td>0.47</td>
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<td>NS</td>
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<tr>
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<td>B</td>
<td>2.133</td>
<td>1.187</td>
<td>0.319</td>
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</table>

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The mean effect of ‘Rug Vedana’, in group-A, before treatment was 2.333 with S.D. 1.046 is reduced to 1.333 with S.D. 0.723 and after the follow-up is reduced to 0.8 with S.D. 0.56. In group-B, before treatment was 2.133 with S.D. 1.187 is reduced to 1.4 with S.D. 0.828 and after the follow-up is reduced to 0.733 with S.D. 0.593.

### Table 4: Shira Shoola

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Group</th>
<th>Mean</th>
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<th>T value</th>
<th>P value</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>BT</td>
<td>A</td>
<td>2.2</td>
<td>1.082</td>
<td>0.290</td>
<td>0.442</td>
<td>0.775</td>
<td>&gt;0.05</td>
<td>NS</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>1.866</td>
<td>1.245</td>
<td>0.334</td>
<td></td>
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<tr>
<td>AT</td>
<td>A</td>
<td>1.4</td>
<td>0.828</td>
<td>0.222</td>
<td>0.324</td>
<td>0.413</td>
<td>&gt;0.05</td>
<td>NS</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>1.266</td>
<td>0.883</td>
<td>0.237</td>
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</tr>
<tr>
<td>AF</td>
<td>A</td>
<td>0.466</td>
<td>0.639</td>
<td>0.172</td>
<td>0.243</td>
<td>1.646</td>
<td>&gt;0.05</td>
<td>NS</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>0.866</td>
<td>0.639</td>
<td>0.172</td>
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</table>

The mean effect of ‘Shira Shoola’, in group-A, before treatment was 2.2 with S.D. 1.082 is reduced to 1.4 with S.D. 0.828 and after the follow-up is reduced to 0.466 with S.D. 0.639. In group-B, before treatment was 1.866 with S.D. 1.245 is reduced to 1.266 with S.D. 0.883 and after the follow-up is reduced to 0.866 with S.D. 0.639.

**Overall results on Objective Parameters:**

On comparing the effect on objective parameters of group A and B, group A trial drug was found more effective in increasing Hb% with more highly significant result at p<0.001, compared to group B at p<0.02. On the contrary, WBC and ESR counts were found more effectively decreased in group B i.e. group B had highly significant result at p<0.0001 in WBC count as compared to group A, where group A was significant at p<0.01. Again, group B showed highly significant at p <0.001 in ESR compared to group A at p<0.05. So group B trial drug is more effective in treating kaphaja kasa as compared to Group A.

### Comparative Statistical results of Objective parameters

#### Hb%

<table>
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<tr>
<th>Criteria</th>
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<th>SD</th>
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<th>Remarks</th>
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</thead>
<tbody>
<tr>
<td>BT</td>
<td>A</td>
<td>11.973</td>
<td>0.788</td>
<td>0.212</td>
<td>0.276</td>
<td>1.231</td>
<td>&gt;0.05</td>
<td>NS</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>11.633</td>
<td>0.66</td>
<td>0.177</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AT</td>
<td>A</td>
<td>12.166</td>
<td>0.675</td>
<td>0.181</td>
<td>0.255</td>
<td>1.647</td>
<td>&gt;0.05</td>
<td>NS</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>11.746</td>
<td>0.671</td>
<td>0.180</td>
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</table>

The mean effect of ‘Hb%’, in group-A, before treatment was 11.973 with S.D. 0.788 is increased to 12.166 with S.D. 0.675 after the treatment. In group-B, before treatment was 11.633 with S.D. 0.66 is increased to 11.746 with S.D. 0.671 after the treatment.
Table 6: RBC Count

<table>
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<tr>
<th>Criteria</th>
<th>Group</th>
<th>Mean</th>
<th>SD</th>
<th>SE</th>
<th>PSE</th>
<th>T value</th>
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</thead>
<tbody>
<tr>
<td>BT</td>
<td>A</td>
<td>4.646</td>
<td>0.232</td>
<td>0.062</td>
<td>0.094</td>
<td>1.914</td>
<td>&gt;0.05</td>
<td>NS</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>4.466</td>
<td>0.266</td>
<td>0.071</td>
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<td></td>
</tr>
<tr>
<td>AT</td>
<td>A</td>
<td>4.673</td>
<td>0.252</td>
<td>0.067</td>
<td>0.095</td>
<td>1.684</td>
<td>&gt;0.05</td>
<td>NS</td>
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<tr>
<td></td>
<td>B</td>
<td>4.513</td>
<td>0.255</td>
<td>0.068</td>
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</table>

The mean effect of ‘RBC count’, in group-A, before treatment was 4.646 with S.D. 0.232 is increased to 4.673 with S.D. 0.252 after the treatment. In group-

Table 7: WBC Count

<table>
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<tr>
<th>Criteria</th>
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<th>SD</th>
<th>SE</th>
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<th>T value</th>
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</tr>
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<tbody>
<tr>
<td>BT</td>
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<td>8046.667</td>
<td>942.593</td>
<td>253.37</td>
<td>293.654</td>
<td>0.839</td>
<td>&gt;0.05</td>
<td>NS</td>
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<tr>
<td></td>
<td>B</td>
<td>8293.333</td>
<td>552.224</td>
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<td></td>
</tr>
<tr>
<td>AT</td>
<td>A</td>
<td>7800.00</td>
<td>877.496</td>
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<td>272.718</td>
<td>0.268</td>
<td>&gt;0.05</td>
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<tr>
<td></td>
<td>B</td>
<td>7873.333</td>
<td>509.154</td>
<td>136.869</td>
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</table>

The mean effect of ‘WBC count’, in group-A, before treatment was 8046.667 with S.D. 942.539 is reduced to 7800.00 with S.D. 877.496 after the treatment. In group-B, before treatment was 8293.333 with S.D. 552.224 is reduced to 7873.333 with S.D. 509.154 after the treatment.

CONCLUSION

Kasa has been mentioned as a disease as well as symptom of other diseases. Kaphaja kasa is a common disease in our community. Based on etiology and symptomatology, it was correlated to Chronic Bronchitis. The disease doesn’t belong to a specific age group or any socio-economical class of society. Rather it’s a disease which is present in all age groups. Environmental factors such as pollutants, allergens, smoke, dust etc have a great influence on this disease as these are unavoidable factors. Hence it is need of the time to ascertain an effective management of kaphaja kasa. The trial drug Sharapunkha showed highly significant results in both subjective and objective Parameters. The trial drug Sharapunkha kwath is more efficacious than Sharapunkha mula churna since Sharapunkha mula kwath is readily available for therapeutic action as it is easily digested and absorbed. Moreover the chances of contamination in a kwath are less as compared to churna. As Chronic bronchitis is a very common and a widespread disease, this sample size was small to generalize the result and the study was limited to the patients who attended the health check up camps, a similar study should be conducted on a large sample size and for a longer duration so as to know the lasting of the clinical effects.

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