A CLINICAL STUDY ON THE EFFICACY OF HAREETAKYADI ANJANA IN THE MANAGEMENT OF KAPHAJA TIMIRA (IMMATURE CATARACT)

Dr. Greeshma Menon  
Research Fellow, Department of Shalakya Tantra, SDM College of Ayurveda and Hospital, Hassan, Karnataka, India

Dr. Ashwini M.J  
Professor, Department of Shalakya Tantra, SDM College of Ayurveda and Hospital, Hassan, Karnataka, India

ABSTRACT

Thirty patients of Kaphaja Timira (Immature Cataract) were diagnosed and registered for the clinical study irrespective of sex, socio-economic status and religion with an aim to know the efficacy of Hareetakyadi Anjana. To present the study in a scientific manner WHO Cataract grading system and classical signs and symptoms of Kaphaja Timira were used for assessment and statistical evaluation. Favourable results were found at the end of the research study. The Lenticular opacity along with the signs and symptoms were reduced and the results were significantly effective.

Objectives: To evaluate the effectiveness of Hareetakyadi Anjana in the management of Kaphaja Timira (Immature Cataract).

Materials and Methods:
Study Design: An open label single arm clinical trial with pre hoc and post hoc test design.
Sample: A single arm clinical study over 30 patients of Kaphaja Timira (Immature Cataract) selected randomly. The patients were selected irrespective of religion, caste and gender from Shalakya OPD of Sri Dharmanathshwara Manjunatheshwara College of Ayurveda and Hospital, Hassan, Karnataka.
Drug: Hareetakyadi Rasakriya anjana 1 drop BD for 60 days was administered into affected eye.
Results: Hareetakyadi Anjana showed statistically significant improvement in subjective parameters of Kaphaja Timira.
Conclusions: Hareetakyadi Anjana was found to be significant for treating Kaphaja Timira (Immature Cataract).

KEYWORDS: Kaphaja Timira, Anjana, Immature Cataract, Hareetaki, Haridra, Pippali, Saindhava.
INTRODUCTION

Ayurveda means 'The Knowledge of life' or 'The Science of life'. Eyes are one of the precious and very sensitive organ exposed to external environment and highly susceptible to develop diseases. A person who desires for a long life must take care of his eyes throughout the life, as for a blind man; there is no difference between day and night even if he has so much of wealth.

Kaphaja Kacha (Immature Cataract) is highly prevalent among the age group more than 40 years. It is preventable blindness as explained by “Vision 2020: The Right to Sight” (WHO). It is affecting 12 to 15 million people globally. In India, approximately 3.8 million people become blind from cataract each year. An effective medical therapy for senile cataract has not been found till now. Surgery is the only choice of treatment.

There is no direct mentioning of senile cataract in Ayurveda. Considering the signs, symptoms and histological changes in the lens, different stages of senile cataract may be compared to Kaphaja Timira, Kaca and Linganasha. Various medical measures have been advised in different authoritative textbooks of Ayurveda to correct Kaphaja Timira in the initial stage. Surgery is mentioned only in the final stage of Kaphaja Linganasha where there is total loss of vision. Hence, any potential intervention that could delay the progression of cataract or cure cataract would have significant impact on the prevalence of blindness. Hence a clinical trial was made to evaluate the efficacy of Hareetakyadi Anjana in Kaphaja Timira with special reference to Senile Immature Cataract. Hareetakyadi Anjana is a unique formulation described in Chakradatta and Bhaishajyaratnavali. It consists of Hareetaki, Haridra, Pippali and Saindhava.

Diagnostic criteria

Assessment parameters were selected as per WHO guidelines for Cataract.

Subjective symptoms:
- Pashyetasookshmanyatyartam (Difficulty in vision)
- Bhootamtyatnapashyati (Difficulty in viewing small objects)
- Yatnavanapi Suchipasham napashyati (Difficulty in near vision)
- Snigdha Darshanam (Blurred vision)
- Dvidaika Darshanam (Diplopia)
- Tanuchailavrutopamam (Objects as if covered by cloth)
- Jalaka Darshanam (Floaters)
- Sweta Darshanam (Vision like whitening of objects)

Objective symptoms:
- Visual acuity test revealing reduced visual acuity.
- Direct Ophthalmoscopic evaluation to understand the Type and Grade of Cataract.
- Slit lamp Examination to understand the Type and Grade of Cataract.

Inclusion criteria
- Patients diagnosed as Kaphaja Timira (Immature Cataract)
- Patients of age group 30 to 70 years
- Patients of either gender
- Patients who are ready to sign informed consent form

Exclusion criteria
- Senile Mature Cataract and Hypermature Cataract
- Congenital, Traumatic, Complicated or Metabolic Cataract
- Other Ocular pathology that causes diminished vision
- Visual Acuity <6/60 (Snellens Chart)

Drug Preparation:
The trial drug was Hareetakyadi Anjana which is a classical formulation mentioned in Chakradatta and Bhaishajyaratnavali. It contains 4 ingredients-Hareetaki, Haridra, Pippali and Saindhava in the ratio 1:1:1:1. These drugs were powdered and concentrated Kashaya was made. This Kashaya was later mixed with sufficient quantity of honey. The drug was prepared and bottled under aseptic conditions at K.S.Varier’s Ashtanga Ayurvedics (P) Ltd, Trichy, Tamilnadu.

Observation and Results

A total of 32 patients of Kaphaja Timira (Immature Cataract) fulfilling the inclusion criteria were registered for this clinical study. The effect of treatment was assessed on the basis of both subjective criteria and objective parameters.

There were no significant observations seen related to gender, cast, ethnicity, religion, education, occupation, diet and habits while was significantly more in elderly.
**Assessment schedule:**

<table>
<thead>
<tr>
<th>Assessment No.</th>
<th>Baseline Assessment</th>
<th>Follow up During the Treatment (Observation between treatment)</th>
<th>Follow up After the Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day</td>
<td>BT</td>
<td>15th day</td>
<td>AT</td>
</tr>
</tbody>
</table>

**Results:**

The Objective parameters were studied using:

- ‘Repeated Measure Anova’ is used to analyze the significance of change in Distant and Near Visual Acuity followed by ‘Paired t test’ as post hoc.
- ‘Wilcoxon signed rank test’ is done on Cataract Grading to interpret the significant change before and after treatment.
- ‘Mc Nemar test’ is used to analyse the significance of change in the subjective symptoms before and after the treatment.

**RESULT**

**Mcnermar test**

<table>
<thead>
<tr>
<th>Symptoms</th>
<th>BT</th>
<th>AT</th>
<th>N</th>
<th>P-value</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Present</td>
<td>58</td>
<td>33</td>
<td>60</td>
<td>0.0001</td>
<td>S</td>
</tr>
<tr>
<td>Absent</td>
<td>2</td>
<td>27</td>
<td>60</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Repeated Measure Anova**

<table>
<thead>
<tr>
<th>Assessment criteria</th>
<th>N</th>
<th>BT mean</th>
<th>AT mean</th>
<th>Greenhouse - geisser df</th>
<th>F-value</th>
<th>p-value</th>
<th>Greenhouse – geisser error Df</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distant Visual Acuity</td>
<td>60</td>
<td>60.517</td>
<td>72.517</td>
<td>2.806</td>
<td>38.448</td>
<td>0.0001</td>
<td>165.536</td>
<td>S</td>
</tr>
<tr>
<td>Near Visual Acuity</td>
<td>30</td>
<td>61.900</td>
<td>84.000</td>
<td>2.575</td>
<td>14.936</td>
<td>0.0001</td>
<td>74.678</td>
<td>S</td>
</tr>
</tbody>
</table>

**Wilcoxon signed rank test for effect on types of cataract**

<table>
<thead>
<tr>
<th>Cataract Grade</th>
<th>Negative ranks</th>
<th>Positive ranks</th>
<th>Ties</th>
<th>Total</th>
<th>Z Value</th>
<th>P Value</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>MR</td>
<td>SR</td>
<td>N</td>
<td>MR</td>
<td>SR</td>
<td></td>
</tr>
<tr>
<td>Cortical</td>
<td>12</td>
<td>6.50</td>
<td>78.00</td>
<td>0</td>
<td>0.00</td>
<td>0.00</td>
<td>5</td>
</tr>
<tr>
<td>BT AT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nuclear</td>
<td>8</td>
<td>4.50</td>
<td>36.00</td>
<td>0</td>
<td>0.00</td>
<td>0.00</td>
<td>11</td>
</tr>
<tr>
<td>BT AT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PSC</td>
<td>8</td>
<td>4.50</td>
<td>36.00</td>
<td>0</td>
<td>0.00</td>
<td>0.00</td>
<td>9</td>
</tr>
<tr>
<td>BT AT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

MR-Mean rank, SR-Sum of ranks

- Out of 17 eyes having Cortical Cataract, there were 12 Negative ranks and 0 Positive ranks after the treatment with 5 ties which is statistically significant (p value 0.001)
- Out of 17 eyes having PSC Cataract, there were 8 Negative ranks and 0 Positive ranks after the treatment with 9 ties which is statistically significant (p value 0.005)
- HareetakyadiAnjana was found to be effective in subjective improvement in the symptoms of
Kaphaja Timira which is statistically significant at the level of (p<0.001). The drug was found to be effective in the improving distant (p<0.001) and near visual acuity (p<0.001). There was significant reduction in the cortical, Nuclear and Posterior Subcapsular opacities. Hence the medicine was found effective in Kaphaja Timira with special reference to Immature Cataract.

**DISCUSSION**

Overall analysis of the drug shows that it is having properties like Chakshusya, Rasayana, Lekhana, Chedhana, Kaphavata pradhana Tridoshahara, Rooksha, Laghu, Sookshma, VyavayiGuna. It is having Tikta Katu rasa pradhana, Ushna Veerya and KatuVipaka.

Chakshushya guna yuka tikta rasa does the kledashoshana in lens thereby decreasing opacity. Chakshushyagunayukta Katu rasa facilitates the exchange of ions through channels by its margavivavarana and also does shleshmashamana. Laghu and Ruksha guna of the drug decreases kledatwa which is the prime cause for denaturation of the proteins in lens. Sookshma and Vyavayi guna of the drug increases corneal penetration and provides larger dissolution area and thus enhances the bioavailability of the phytochemicals present in the trial drug.

The trial drug with its predominant property of Chakshushya improves the visual parameters like blurred distant and near vision. The Rasayana property of the drug contributes to the antioxidant action thereby scavenging the free radicals and thus prevent cataractous development. The Chedana and Lekhana property of the drug removes the sthira vikruta kapha which is effecting the transparency of the lens and thus decreases the opacity.

**CONCLUSION**

Hareetakyadi Anjana showed significant improvement in subjective parameters of Kaphaja Timira. The Anjana showed significant improvement in Distant and Near Visual Acuity. This Anjana yoga significantly reduces Kaphaja Timira (Cortical Cataract, Posterior Sub capsular and Nuclear Cataract). No adverse drug reactions were reported during the study. The Research hypothesis is thus accepted.

**REFERENCES**

4. www.ncbi.nlm.gov/m/pubmed/11821974