Pharmaceutical preparation and stability study of Netramritam a herbal eye drop for Cataract

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ABSTRACT

Ayurveda is science in which we study about not only Atura Chikitsa but also Swasthasya Swasthya Rakshana. In this study an eye drop which comes under Arka Kalpana of Bhaishajya Kalpana. This eye drop not only treat cataract but also prevent healthy eye from cataract. Cataract is a disease in which cloudy eye vision is the main symptom of acute patients. In Ayurveda we correlate cataract with Linganasha. This eye drop is made up of Gulbakawali flower Arka and this medicinal herb has a great potential to prevent and treat cataract. Also in this study light towards the pharmaceutical preparation of Gulbakawali Arka and it’s analytical parameters like Ph value antimicrobial study to find out stability and shelf life of this eye drop has been studied.

Key words: Cataract, Linganash, Gulbakawali Flower, Gulbakawali Arka, Arka Kalpana

INTRODUCTION

A cataract is a cloudy lens condition in which clouded, blurred or dim vision are the main symptoms. In Ayurveda cataract is correlated with Linganasha. Linganasha is a technical descriptive term in Ayurvedic literature, which means loss of vision. Two varieties of Linganasha - loss of vision have been described i.e., reversible and irreversible or curable and in-curable. On the other hand Linganasha as a whole can be classified as follows:

Endogenous Linganasha is described vividly on anatomical and etiological grounds and is said to be the end stage of Timira, a serious disease of the visual apparatus. On anatomical descriptive grounds, when the vitiated body humors reach/invade 4th/ last Patal /layer of the eye ball (nucleus of the lens), then patient's vision is obstructed, pupil is covered by vitiated body humors then patient perceives only
bright illuminating objects that too when the eye (Posterior segment) is normal. This stage of Timira; invading 4th Patal (Lens) is labelled as Linganasha (Cataract). According to the etiological classification, Linganasha is again the 3rd stage of disease Timira, 2nd being Kach - (ISC).

The clinical picture is as per the vitiating / causative body humors. Among these pathologically classified Linganasha only Kaphaja Linganasha (KL) is surgically curable rest all being incurable[3,4] but a misconception about the surgical procedure is still prevailing. The western medical literature considers that surgical procedure depicted in ancient surgical treatise Sushruta Samhita is couching. Gulbakawali flower Arka is most commonly used medicine for treatment of cataract. This Arka not only treat cataract but also prevent our eyes so that we will not face cataract issue with our lens by regular using this Arka in eyes.

In this study stability study which is also going to be helpful to find to out shelf life or Saviryata Avadhi of this Kalpana has been done.

AIM AND OBJECTIVES

1. To study about the pharmaceutical preparation method of Netramritam eye drop.
2. To ensure the safety and shelf life of Netramritam eye drop.

MATERIALS AND METHODS

- Raw ingredients viz. Gulbakawali is procured from authentic market sources.
- Eye drop is going to be prepare at SBLD Ayurved Viswabharati Pharmacy, Sardarsahar, Churu.
- Stability test with special emphasis on antimicrobial study is performed by sending sample to Ayushraj Enterprises a NABL Certified lab at Jaipur.

Drug Review

- Kingdom: Planta
- Species: H. coronarium
- Botanical name: Hedychium coronarium

Gulbakwali is of Himalaya habitat. this plant is available in tropical and subtropical region. It grows in moist tropical forest usually near stream, canals, water channels. The white garland-lily[5] or white ginger lily[6] is a perennial flowering plant in the ginger family Zingiberaceae, native to the forest under storey of Asia. Other common names include butterfly lily, fragrant garland flower, Indian garland flower, white butterfly ginger lily or white ginger.[6]

Method of preparation

Kalpana - Arka Kalpana

Method - firstly raw Gulabakwali flower 1 kg was taken and soaked overnight in 10 liter water, next day its Arka is distilled with the help of distillation apparatus.
Initial weight - 1kg Gulbakawali flower
Final weight - 3 liter of Arka

Analytical Study

Stability test was performed by Ayurshraj enterprises
- Test start date - 03/08/2022
- Test end date - 08/11/2022
- Date of Exp. - 05/2023
- Parameters tested are mention in index below

<table>
<thead>
<tr>
<th>S N</th>
<th>Particular</th>
<th>Test Method</th>
<th>Specifications</th>
<th>UOM</th>
<th>0 Days</th>
<th>3 Month</th>
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<td>Description</td>
<td>In House AD/STP/68/00</td>
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<td>-</td>
<td>Colou rless Liquid</td>
<td>Colou rless Liquid</td>
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<td>2.</td>
<td>pH</td>
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<td>-</td>
<td>4.60</td>
<td>4.62</td>
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<tr>
<td>3.</td>
<td>Specific Gravity</td>
<td>API Part II Vol. IV</td>
<td>NLT 0.9</td>
<td>-</td>
<td>1.0225</td>
<td>1.0240</td>
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</table>

Microbiological Analysis

<table>
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<th>S N</th>
<th>Particular</th>
<th>Test Method</th>
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<th>UOM</th>
<th>0 Days</th>
<th>3 Month</th>
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<tr>
<td>4.</td>
<td>Total Aerobic microbial Count</td>
<td>API Part II Vol. IV</td>
<td>&gt;10000 Cfu /ml</td>
<td>7000</td>
<td>8000</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Total Aerobic microbial Count</td>
<td>API Part II Vol. IV</td>
<td>&gt;1000</td>
<td>Cfu /ml</td>
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<td>450</td>
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<td>6.</td>
<td>Escherichia Coli</td>
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<td>Perl ml</td>
<td>Absent</td>
<td>Absent</td>
</tr>
<tr>
<td>7.</td>
<td>Salmonella</td>
<td>API Part II Vol. IV</td>
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<td>Perl ml</td>
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<tr>
<td>8.</td>
<td>Staphylococcus aureus</td>
<td>API Part II Vol. IV</td>
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<td>Perl ml</td>
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<tr>
<td>9.</td>
<td>Pseudomonas aeruginosa</td>
<td>API Part II Vol. IV</td>
<td>Absent</td>
<td>Perl ml</td>
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</tr>
</tbody>
</table>

Discussion

Linganasha is one of the major causes of blindness, experts have studied that Gulbakawali Arka has a great role in treating cataract.[7] It work as not only in treatment but also help in preventing cataract. In this study the Arka was prepared and its stability test to find out shelf life and other parameter of this Arka was performed.

Conclusion

In spite of great technological advances in the field of ophthalmic medicine and surgery, conservative therapy still continues to be mainstay for reversible ailments. Researchers are relentlessly in quest to identify plants metals and minerals with medicinal properties. Often, they are successful, proverbsially, in turning over a new leaf. At the same time, there are numerous challenging problems, existing before modern ophthalmologists that require special attention to develop unexplored fields of medical knowledge hidden in ancient medical texts. In this study stability test was performed twice, first at zero month and 2nd at three months and then find out that this Arka is not stable more than 9 month of preparation.
REFERENCES


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