



be very convenient, Effective, and Cheap as compared to others. Hence the study was selected under the label of “RUTU-HARITAKI-RASAYANA IN EYE-CARE.”

Blindness is also one of the major disease which is covered under National Health Program’s conducted by Government of India, clearly stating its importance and severity [9]. Diseases of eyes, especially when it comes to Refractive errors have very less oral interventions as a part of treatment [10]. Hence the study drug was chosen.

## Materials & Methods:-

### STUDY DESIGN:-

#### A Clinical, Comparative, Randomized, Single Blind Study.

Ethical clearance from Ethical committee was taken from IEC & approval was received.

The project was conducted in 3 LEVELS:-

### LEVEL 1:- REVIEW OF LITERATURE:-

Conceptual review of *Samhitas* from *Ayurveda* was done thoroughly. References regarding *Rutu-Haritaki*, *Drushti-mandya*, & *Rasayana* were studied & compiled. Study of Myopia from modern literature & internet was done with latest updates.

### LEVEL 2:- DRUG STANDARDIZATION:-

Collection of raw material was done from reliable market sources.

Authentication & Analysis of *Haritaki* & *Pippali* was done at Dept. of Botany, Pune University.

Drug standardization was done in College Research Lab.

### LEVEL 3: CLINICAL TRIALS:-

- Pilot Study was conducted in the *Shishir Rutu* as it is one of the healthiest *Rutu* of all & was best suited to see the *Rasayana* effect of the drug. Also there is no *Prakupit avastha* of any *Dosha* in this *Rutu*. Hence this *Rutu* was selected for study.
- Medical camp was conducted before the start of the *Shishir Rutu*, for which advertisements were given in various newspapers, & pamphlets were designed for display in schools & colleges of nearby areas. Very huge response was received as more than 500 patients were screened out of which 100 were selected for the study.
- Further with the help of Experts, the selected subjects were treated with study drug *Rutu-Haritaki*.
- *Rutu-Haritaki Rasayana* was prepared using *Haritaki* & its various *anupana* according to various *Rutu*’s for the main study.
- Patients of Myopia (*Drishhti-Mandya*) with refractive error between  $0.00 \pm 2.00$  were selected between age group of 10 to 25 irrespective of sex, religion & occupation.
- Subjects with only complaints of *Drishhti-Mandya* were selected; any other disorders along with *Drishhti-Mandya* were excluded from study as to see the *Rasayana* effect was the main objective.
- Written consent of all patients included in the study was taken in the language best understood by them. It was taken after explaining the concept & line of treatment.
- Patients were studied & follow ups were taken under the guidance of expert Ophthalmologist.
- Out of 100 Only 6 pts left the study in between against the medical advice (Drop-out), whereas none of the patient was deteriorated of the symptoms or needed extra medical care.
- Standard yet minimum *pathyapathya* were advised.
- Drug Used :- *Rutu Haritaki in Shishir Rutu*

[Tablets of 500mg each of *Rutu-Haritaki Rasayana (Haritaki + Pippali)* was prepared for convenience.

Other than vision, there were some factors selected for study which gives idea about generalized feeling of wellbeing. These factors were selected from Health definitions from various ref. Like PSM<sup>[9]</sup>, WHO Health definition & health parameters, & from various concepts from *Ayurvedic* texts.

### xuÉxjÉsÉªÉhÉ:-

xÉqÉSÉªWÉ: xÉqÉÉÍalÉ¶É xÉqÉkÉÉÍÉÑqÉsÉÍøürÉÉ: | mÉöxÉ³ÉÉiqÉâÍSirÉqÉÉÍÉÉ: xuÉxjÉ CirÉÍpÉkÉËrÉÍÉâ || - xÉÑ. xÉÖ. 15/41

### AÉUÉªarÉ sÉªÉhÉ:-

A³ÉÉÍpÉsÉwÉÉª pÉÑÉüxrÉ mÉËUmÉÉMü: xÉÑZÉâÍÉ cÉ | xÉx¹ÍuÉhqÉÑ§ÉUÉÉÍÉiuÉÇ zÉËUxÉrÉ cÉ sÉÉbÉuÉqÉÇ ||

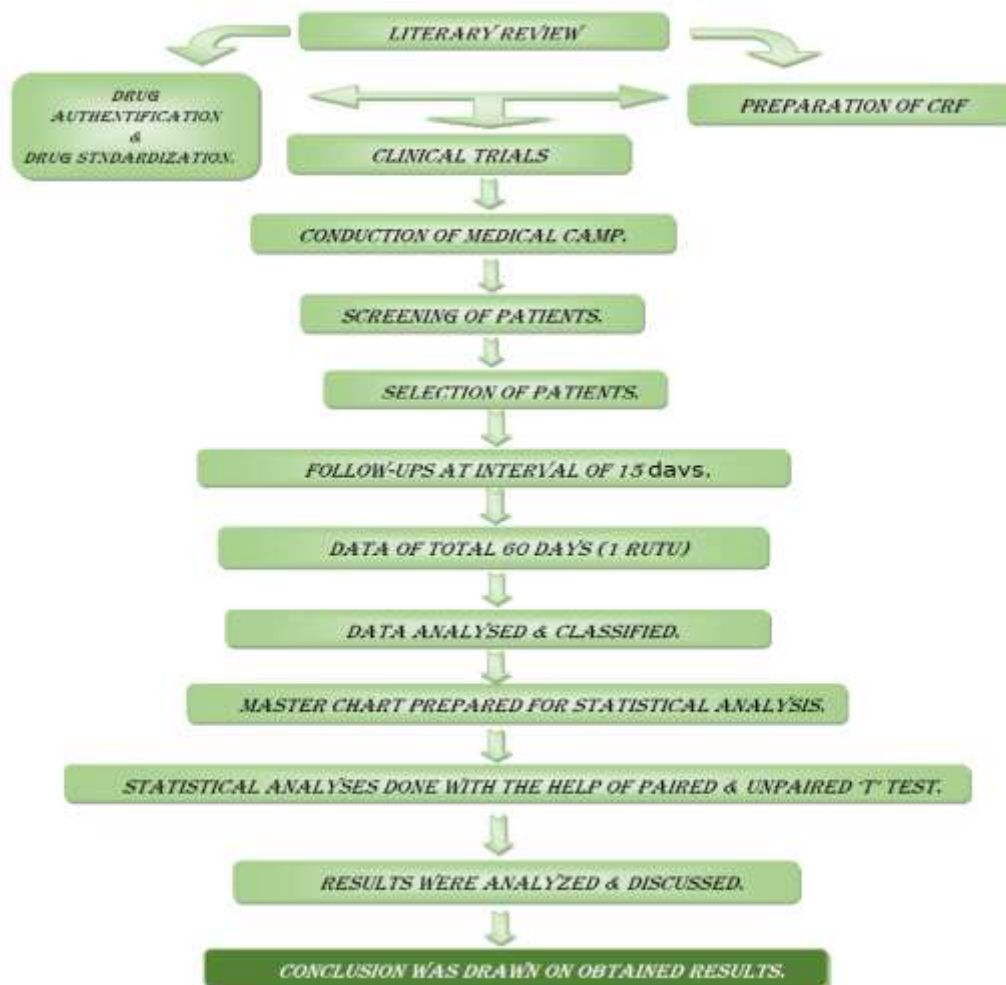
oÉsÉuÉhÉÉÍrÉÑwÉÉÇsÉÉpÉ: xÉÉæqÉÍÉxÉrÉ xÉqÉÉÍalÉÍÉÉ | ÌuÉ±ÉÍÉÇ AÉUÉªarÉ ÍsÉXèùaÉÉÍÉ ÌuÉmÉËUÍÉâ ÌuÉmÉrÉÍrÉqÉÇ ||- MüÉ. xÉÇ. ÍZÉ.

These factors were:-

- Skin complexion,
- Appetite,
- Bowel Habits (defecation),
- Gases,
- Laziness,
- Sleep,
- Exercise Tolerance,

- Stress & Anxiety,

These were few selected from the vast pool available.



*Figure 1 Flow Chart of Study*

## Results:-

Various factors were analyzed in systematic format as follows:-

- Observations were recorded on scientifically prepared CRF.
- Once the complete & clean data was available it was classified under various heads.
- Master chart was prepared with follow up of all the patients.
- Follow up of subjects were taken at the interval of 15 days for the changes in observations if any.
- 

### 1) Effect on VISION RIGHT EYE:-

There was no change seen in the results after 30 days whereas after 60 days (end of the trial) positive change of 9.78% was which is statistically almost highly Significant ( $P < 0.001$ ).

### 2) Effect on VISION LEFT EYE:-

There was no change seen in the results after 30 days whereas after 60 days (end of the trial) positive change of 13.25% was seen which is statistically Highly Significant ( $P < 0.001$ ).

### 3) Effect on VISUAL ACUITY RIGHT EYE:-

At the end of the 30th day there was 33.62% of improvement seen which is statistically highly significant ( $P < 0.001$ ). Whereas at the end of the trial result was further improved to 75.85% this was again proved to be statistically highly significant ( $P < 0.001$ ).

### 4) Effect on VISUAL ACUITY LEFT EYE:-

At the end of the 30th day there was 36.44% of improvement seen which is statistically highly significant ( $P < 0.001$ ). Whereas at the end of the trial result was further improved to 76.26% this was again proved to be statistically highly significant ( $P < 0.001$ ).

### 5) Effect on DRYNESS OF EYES:-

At the end of the 30th day there was 23.03% of improvement seen which is statistically significant ( $P < 0.05$ ). Whereas at the end of the trial (D 60) result was further improved to 46.34% this again proved to be statistically significant ( $P < 0.05$ ).

**6) Effect on SKIN COMPLECTION:-**

At the end of the 30th day there was 20.10% of improvement seen which is statistically highly significant ( $P < 0.001$ ). Whereas at the end of the trial result was further improved to 36.30% this was again proved to be statistically highly significant ( $P < 0.001$ ).

**7) Effect on APPETITE:-**

End of the trial result was 46.34% this was proved to be statistically highly significant ( $P < 0.001$ ).

**8) Effect on BOWEL HABITS:-**

End of the trial result was 24.98% this was proved to be statistically highly significant ( $P$  very close to 0.001).

**9) Effect on GASES:-**

End of the trial result was 57.18% this was proved to be statistically highly significant ( $P$  very close to 0.001).

**10) Effect on LAZINESS:-**

At the end of the trial result was 73.52% it proved to be statistically highly significant ( $P < 0.001$ ).

**11) Effect on SLEEP:-**

At the end result was as high as 82.58% it proved to be statistically highly significant ( $P < 0.001$ ).

**12) Effect on EXERCISE TOLERANCE:-**

At the end of the trial result was 76.90% this was again proved to be statistically highly significant ( $P < 0.001$ ).

**13) Effect on STRESS/ANXIETY:-**

At the end of the trial result was 65.63% this was again proved to be statistically highly significant ( $P < 0.001$ ).

## Discussion:-

Acharya Charka has described *Haritaki* as *Chakshusya* while describing its properties in the *Rasayana Adhyaya*. Also the topic of the study was involving both *Haritaki* & its *Rasayana* effect.

Study of Literature regarding various topics related to subject was done thoroughly. It included some diseases like Asthenopia, Convergence & Divergence principal related to eye along with accommodation of eye which gave some important links to conclude the findings derived. Also thorough study of other factors like *Rutu*, *Rutucharya*, *Rutu-Haritaki*, *Drishti-Mandya*, etc. was done.

Here not only study of *Haritaki* & *Pippali* was done individually but also combined effect of *Haritaki* & its various *Anupana* was studied for better understanding of cause & effect of the drug.

Here the study was done as per specified protocol under the guidance of experts from various departments like Ophthalmology, *Dravyagun*, *Rasashastra*, and *Samhita-Sidhanta* etc.

- **EFFECT ON FACTORS RELATED TO EYE & VISION:-**  
(REFRACTIVE ERROR, VISUAL ACUITY, DRYNESS OF EYES.)

One of the major objective parameter studied was **Refractive errors**. This showed 32% changes in *Rutu-Haritaki* in terms of no. of Subjects, it might not seem to be Remarkable, but when Refractive errors are concerned even slight change can make a difference, as there are not much substitutes in terms of treatment for this kind of conditions.

After discussing the results with the experts from the field of *Shalaky-Tantra* (especially Ophthalmology), it was said that accessory factors affecting Refractive errors might have been involved in reaching the results. This factors might be 'Accommodation principal', 'Convergence & Divergence mechanism' etc. Which help in formation of Vision. While considering the above said factors especially **Visual Acuity**, role of Muscles related to eye can be analyzed. As the drug consists of *Haritaki* & *Pippali* which are said to be having *Rasayana* action individually to some extent also produces the same effect when used in combination, resulting in increasing the potency & vital power of the *Indriyas*.

Also *Prakupita Meda* & *Kapha* if at all related with muscles of eye would have been corrected with the properties of drugs as follows:-

- Reducing the Spasm of Muscles & increasing the Muscle tones with the help of *Kashaya Rasa*.
- *Villayana* of *Prakupita Kapha* & *Atirikta Meda* with its *Ushana virya*, *Laghu*, *Ruksha Gunas* & *Tridosahar* properties.
- Increasing muscle tone with its *Rasayana karma*.

- Acharya CHARAKA has described *Haritaki* having *Doshashodhana* action which can be used for *Shodhana* of *Vikruta Doshas*.
- All the above said conditions might have been improved with the help of *Katu rasatmaka*, *Madhur vipaki*, *Anushana viryatmaka*, *Laghu*, *Tikshna* & *Sukshma-Strotogami Pippali* which is also said to be *Yogavahi* in nature.
- Also *Netra* is said to be the organ with *Teja Mahabhoota Pradhanya*, it has natural fear from *Kapha*.

Hence *Haritaki* & *Pippali* with their combined effect of *Ushana virya*, *Katu*, *Tikta rasa* & *Laghu*, *Ruksha*, *Tikshna Gunas*, might be causing *Kapha Vilayana* & *Haritaki* with its *Shodhana Karma* help to keep *Indriyas* clean & healthy.

**Dryness of eyes** was corrected with the help of *Haritaki* & *Pippali* more effectively as *Ambu Shoshan* action of *Haritaki* due to its *Kashaya Rasa* might have been seen if consumed for long period. Last but not the least with its *Balya*, *Chakshushya* & *Netrya Karma* *Haritaki* plays vital role in enhancing the action on Eyes & Vision as described by various Acharya.

#### **EFFECT ON DIGESTIVE SYSTEM: - (APPETITE, BOWEL-HABITS, GASES.)**

Here the effect of drugs were analyzed before & after the study.

In terms of Appetite & Gases *Rutu-Haritaki* was seen superiorly. It might be due to *Tikshna*, *Ushana Gunas* & *Yogvahi* properties of *Pippali* along with its *Madhur vipaka* which augmented the effect on Appetite of the subjects.

Same cause & effect result in terms of Gases might be seen with additional property of *Purisha-Bhedana guna* of *Pippali*.

#### **EFFECT ON PSYCHOLOGICAL FACTORS: - (LAZZINESS, STRESS & ANXITY, SLEEP.)**

Again here effect was seen remarkably improved.

There are many factors which are responsible for psychology of an individual like:-

- Nature of an individual,
- Habits,
- Surrounding atmosphere,
- Ability to handle pressure & react on it etc.

When these factors were considered effect of *Haritaki* did brought some changes. It might be due to its *Balya*, *Medhya* & *Indriyabalya* action along with *Rasayana-karma* that helps to overcome the psychological effect of the body, this not only works on *Sharira-Bhavas* but also on *Manas-Bhavas* as rightly said in *Ayurveda*.

When used in combination with *Pippali* which along with its *Sukshma-Strotogami* action, works equally on *Manasa-Bhavas*. *Pippali's Majja-gami* action is also well known which might works as stimulant with all its properties to overcome the psychological action of the body.

#### **EFFECT ON SKIN COMPLEXION:-**

As it is also one of the *Indriyas* mentioned in *Ayurveda*, *Rasayana* effect was also best seen in this factor. Use of *Haritaki* is mentioned in conditions like *Kushtha*, *Visarpa* etc as it avoids the formation of pus & also works best in combination with oil on wounds. **Here its action on Skin was clearly visible in terms of Complexion.** It was further helped with *Pippali* with its *Strotogami* action allowing clearing the *avrodha* if any & also it is popularly known for its action on *Rakta Dhatu*, which has *Ashraya-Ashrayi* relation with pitta & indirectly with *Twacha* & its Complexion. By increasing the *Dhatu-Agni* in the body it acts more strongly, as the relation of skin & *Rakta Dhatu* & *pitta dosha* is closely stated in *Ayurveda* for which root of administration is the best example.

#### **EFFECT ON EXERCISE TOLERANCE:-**

This factor is more concerned with the stamina and or ability to perform work physically and or fatigability of an individual.

If seen from *Ayurvedic* point of view these factors might be related with the potency of *Rasa*, *Mansa*, and *Shukra Dhatu* of the individual along with *Ooja*. While describing *Haritaki* various synonyms were seen as- *Rasayani*, *Amruta*, *Medhya*, *Kayastha*, *Vayastha*, This synonym indirectly gives the action of *Haritaki* on the respective factors. As in *Ayurveda* synonyms were quoted on the factors like their actions, place of availability, appearance etc.

With its properties like *Pancharasatmaka*, *Madhur vipaki*, *Ushana viryatmaka* & yet *Tridoshahara* it definitely will help to increase the stamina of the individual. When used with *Madhur vipaki*, *Anushmasheeta viryatmaka*, *Agnidipak* & *balya Pippali*, it helps to aggravate its *Rasayana* & *Balya* action on all *Dhatu*s, *Oojas* & ultimately on the body as a whole.

#### **EFFECT ON OTHER COMPLAINTS:-**

Under this head there were some mixed complaints other than above factors which are as follows:-

*Kasa*, *Shwasa*, *Sheerashoola*, *Amlapitta*, *Angamarda* etc.

Action of *Pippali* on *Shwasa*, *Kasa* is well known as it works very well on diseases related to Respiratory system. It was also good to see the effect of *Haritaki* & *Pippali* on Acidity as in few subjects; symptoms were seen drastically reduced in single follow-up. Similarly *Sheerashoola* was reduced with the help of *Rutu-Haritaki* more effectively. This might be because of action of *Tikshna*, *ushana guna* of *Rutu-Haritaki* on *Avrodhajanya Samprapti* of *Sheerashool*.

#### **CONCLUSION:-**

From the observations & results obtained it can be concluded that-

- *Rutu-Haritaki* works more effectively as compared to plain *Haritaki* in many conditions.
- It would always be better to use *Haritaki* with its specified *Anupana's* according to various *Rutus* unless specified for its plain use.

### Acknowledgements:-

I express my special thanks to Lord Ganesha, Lord Dhanvantari, My Parents & My Mentor, Respected Vd. Jamadagni sir. Guidance & words of wisdom are always motivating us to perform at our best.

It is great pleasure for me to express my gratitude with profound respect to my Teacher's Dr. R. B. Bobade Sir, Vice Principal, Prof. & HOD, Dept. of Swasthavritta, & Dr. Mrs. Arti R. Firke Reader, Dept. of Swasthavritta, College of Ayurved & Research Centre, Akurdi, Pune for their ceaseless, indefatigable guidance throughout the study. Special thanks to Late. Dr. Nilmani Barve sir from Dept. of Shalaky Tantra without whom the study would have never been completed. Thank you very much for being with me for your valuable suggestion & untiring efforts throughout the study.

Special word of appreciation is must for all Para-medical staff & supportive staff without whom work would not been so comfortable in various exhausting conditions.

### References:-

- 1) <http://www.who.int/mediacentre/factsheets/fs282/en/>
- 2) Acharya Vidyadhar Shukla, Charak Samhita, , Vol. 01, Chowkhamba Sanaskrit Sansthan, Varanasi, 2002. Pg. no. 56-65.
- 3) Kaviraj Dr. Ambikadutta Shashtri, Sushrut Samhita, 12th Ed. Chowkhamba Sanaskrit Sansthan, Varanasi, 2001, pg. no. 334-348.
- 4) Kaviraj Atrideva Gupta, Ashtanga – Hrudaya, 14th Ed., Chowkhamba Krishnadas Acadamy, Varanasi. 2003, pg. no. 23-31.
- 5) Kaviraj Atrideva Gupta, Ashtanga – Sangraha, Vol. 1, Chowkhamba Krishnadas Acadamy, Varanasi, 2005, pg. no. 14-16.
- 6) Prof. K. R. Srikantha Murthy, Bavprakash, Vol. 01., Chowkhamba Krishnadas Acadamy, Varanasi, 2004. Pg. no. 67-87.
- 7) Shri Bramha Shankar Shastri, Yogaratnakar, Chowkhamba Sanaskrit Sansthan, Varanasi, 2004, pg. no. 108-110.
- 8) Dr. P. Himasagar Chandra Murthy, Sharangdhara Samhita, 1st Ed., Chowkhamba Sanaskrit Sansthan, Varanasi, 2001. Pg. no. 45-47.
- 9) K Park, Preventive & Social Medicine, 20th Ed., Bhanot Publication, Jabalpur, 2009, pg. no. 431-433.
- 10) Stephen J. H. Miller, Parson's Diseases of Eye, 18th Ed. Churchill living stone, 1992 pg. 05-07.
- 11) Pandit Hemaraj Sharma, Kashyapa Samhita, Vol. 2, Chowkhamba Sanaskrit Sansthan, Varanasi, 1988, pg. 78-79.