



ISSN: 0976-3031

Available Online at <http://www.recentscientific.com>

CODEN: IJRSFP (USA)

International Journal of Recent Scientific Research
Vol. 8, Issue, 11, pp. 21455-21458, November, 2017

**International Journal of
Recent Scientific
Research**

DOI: 10.24327/IJRSR

Research Article

EFFECTIVENESS OF *SAPTHAMRITHA LOHA* GRANULES IN IMPROVING THE QUALITY OF VISION IN CHILDREN AGED FIVE TO ELEVEN YEARS IN A RURAL REGION IN KERALA STATE

Sreekumar.K^{1*}, Sindhu C² and Shaju M.K³

^{1,2}Department of Salakyatantra, Govt. Ayurveda College, Tripunitura, Kerala, India

³Department of Kaumarabhritya; Govt. Ayurveda College, Tripunitura, Kerala, India

DOI: <http://dx.doi.org/10.24327/ijrsr.2017.0811.1077>

ARTICLE INFO

Article History:

Received 18th August, 2017
Received in revised form 10th
September, 2017
Accepted 06th October, 2017
Published online 28th November, 2017

Key Words:

Refractive error Indriya pradoshaja
vyadhi Saptamrutha loha

ABSTRACT

Prevention of childhood blindness is one of the priorities of Vision 2020: The Right to Sight global initiative and the strategy involves district level programs. Some of the conditions like vitamin A deficiency, Allergic and Vernal keratoconjunctivitis and eyelid infections may be precursors to more serious eye diseases like refractive errors and corneal infections. In Ayurvedic literature, *Asatmya indriyadha samyoga* (wrong visual habits) is one of the main causes of developing *Indriya pradoshaja vyadhis* (diseases pertaining to the sense organs). Constant use of mobile phones, computers and continuous watching of television also enhances the magnitude of visual problems in children. Acharya Charaka clearly mentioned that the visual and auditory evaluation is mandatory for poorly performing children. Ayurveda give prime importance to the preventive eye care and a lot of formulations are mentioned for the same. *Sapthamritaloha* is one of the formulations taken for this trial.

Nettor is a rural area in Ernakulam District; Kerala state, India comes under Maradu municipality of Kanayannor Taluk. From the previously conducted demographic studies the particular area was in Socio economically backward class. The area is having three Lower Primary schools. Among them Nettor Raman master memorial School occupies the minimum strength of 156 from L.K.G to fourth standard. From 156 students, 36 students having visual problems were selected through two set of screening camps conducted by expert ophthalmologists from Govt. Ayurveda College Tripunitura, Ernakulam in an interval of three months. Screening camps were supported by class teachers. The selected students were administered with *Saptamrutha loha* granules. The results shown that this drug is effective for reducing the eye strain and associated asthenopic symptoms.

Copyright © Sreekumar.K., Sindhu C and Shaju M.K, 2017, this is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution and reproduction in any medium, provided the original work is properly cited.

INTRODUCTION

Childhood eye morbidity is defined as any eye disease or condition that requires ophthalmic care and treatment which if untreated can often progress to serious and sight-threatening disease. Childhood eye morbidities can cause considerable problems for children and some conditions if uncorrected or untreated can cause blinding complications. Identification and control of childhood eye diseases and formulation of strategies to provide eye care services to children universally is a challenge.

Common childhood ocular morbidities¹

Common	<ul style="list-style-type: none"> • Refractive errors • Vitamin A Deficiency Disorders commonly (Xerophthalmia- Bitot spots) • Allergic eye disease (Allergic Keratoconjunctivitis (AKC), Vernal Keratoconjunctivitis (VKC), Atopic conjunctivitis, Phlyctenular conjunctivitis) Infective conjunctivitis and Trachoma • Trauma • Blepharitis, lid swellings and infestations
Uncommon	<ul style="list-style-type: none"> • Strabismus • Amblyopia • Ptosis • Cataract (congenital, developmental or traumatic) • Corneal opacities
Rarer	<ul style="list-style-type: none"> • Retinal degenerations • Congenital anomalies of eye Uveitis • Cancers of eye and Adnexa

*Corresponding author: Sreekumar.K

Department of Salakyatantra, Govt. Ayurveda College, Tripunitura, Kerala, India

Prevention of childhood blindness is one of the priorities of Vision 2020: The Right to Sight global initiative and the strategy involves district level programs². Children with ocular morbidities would rarely complain and bring to the notice of their parents or the parents are ignorant about the need to get their child examined by the ophthalmologist. A child with visual impairment would find schooling and various activities extremely difficult. Some of the conditions like vitamin A deficiency, Allergic and Vernal keratoconjunctivitis and eyelid infections may be precursors to more serious eye diseases like refractive errors and corneal infections³.

Refractive error is one of the most common causes of visual impairment around the world and the second leading cause of treatable blindness. The trends of visual impairment (uncorrected visual acuity of 6/12 due to refractive errors revealed in various places were 9.0% (urban India) and 5.0% (rural India)⁴.

In Ayurvedic literature, *Asatmya indriyardha samyoga* is one of the main causes of developing *Indriya pradoshaja vyadhis*. Constant use of mobile phones, computers and continuous watching of television also enhances the magnitude of visual problems in children. Acharya charaka clearly mentioned that Which means that the visual and auditory evaluation is mandatory for poorly performing children⁵.

Aim

To assess the effectiveness of *Sapthamritha lauha* granules in improving the quality of vision in children aged five to eleven years

Objectives

- To determine the prevalence of eye diseases in children aged 5-11 years
- To determine causes of eye diseases in children

Hypothesis

- **Null hypothesis (H0):** *Sapthamritha lauha* granules is not effective in improving the quality of vision in children aged five to eleven years
- **Alternate hypothesis (H1):** *Sapthamritha lauha* granules is effective in improving the quality of vision in children aged five to eleven years

Study design

Population based cross sectional study with purposive sampling.

Sampling Method: Purposive sampling.

Sample size calculation

The major disorders causing ocular morbidity of interest for estimation of the sample size were considered to be, vitamin A deficiency, refractive errors and strabismus. Based on the preliminary data from previously described studies, we estimated the sample size for this study using the lower limit of the 95% confidence limit for ocular morbidity as the parameter for reference.

Type I error	5%
Power of the study	80%
Sample size calculated by	4
Sample size required after considering a dropout rate of 10 %	36

In order to estimate an assumed prevalence of childhood eye morbidity of 70% with 95% CI, a sample of size of 36 was needed after considering a dropout rate of 10%.

Study Setting

Nettor is a rural area in Ernakulam District, Kerala state comes under Maradu municipality of Kanayannor Taluk. From the previously conducted demographic studies the particular area was in Socio economically backward class. The area is having three Lower Primary schools. Among them Nettor Raman master memorial School occupies the minimum strength of 156 from L.K.G to fourth standard. From 156 students, 36 students having visual problems were selected through two set of screening camps conducted by expert ophthalmologists from Govt. Ayurveda College Tripunithura in an interval of three months. Screening camps were supported by class teachers. The selected students were administered with *Sapthamritha loha* granules.

Ethical considerations and consent

Ethical considerations were taken from the institutional ethics committee and school authorities and all children were seen with their parent(s)/guardian(s), from whom written consent was gained for examination and drug administration for the study.

Inclusion criteria

All Children aged 5-11 years with reduced visual acuity or having any asthenopic symptoms like eye pain, itching eyes, redness or watering.

Exclusion criteria

- Children who are taking any other medicines for any complaint
- Children who are undergone any ophthalmic surgery or using any ophthalmic medications.

Clinical examination

Experienced ophthalmologist performed all the examination procedures in a clinic set up at the school building during the study. The examinations include distance visual acuity measurements using Snellen's chart, ocular motility evaluation. Evaluations of the anterior segment (eyelid, conjunctiva, cornea, iris, and pupil) were also done to rule out other ophthalmic lesions.

Statistical analysis

Statistical analysis was done by Wilcoxon Signed Rank test.

Drug description and preparation

Sapthamritha loha mentioned in Bhaishagyaratnavali *Shooladhikara*⁶ is selected for the trial. This drug has a wide range of indications including *Thimira, Jwara, Klama, Sopha* etc.

Name of drug	Botanical name	Part used	Quantity
Madhukam	<i>Glycorhiza glabra</i>	Root	1 part
Amalaki	<i>Emblica officinalis</i>	Fruit	1 part
Vibheetaki	<i>Terminalia bellerica</i>	Fruit	1 part
Hareetaki	<i>Terminalia chebula</i>	Fruit	1 part
Loha basmam	-	-	4 parts
Madhu	-	-	Sufficient quantity
Ghrutha	-	-	Sufficient quantity

Preparation of Saphthamritha loha granules

Good quality of dry *Madhuka*, *Amalaki*, *Vibheetaki*, *Hareethaki* (1 part each) are collected and powdered well. These drugs are mixed with 4 parts of *Loha bhasma* (100 Puta). Then granules are prepared as per *Khanda kalpana*.

Administration and dosage

The granule is advised to consume along with unequal quantity of honey and ghee and milk as *Anupana*. The dosage is half teaspoon (5g) before bed.

Duration

30 days

Pathapathy: Children were advised to follow their normal diet pattern during the course of the study

Clinical assessment: Were done on 0th day and 31st day i.e before and after the trial.

Clinical Observations and Results

Distribution of Study Children

Age and gender wise distribution

Age group	Frequency (%)		
	Males	Females	Total
5-7	13 (36.11%)	10 (27.77%)	23 (63.88%)
7-9	11 (30.55%)	1 (2.78%)	12 (33.33%)
9-11	0	1 (2.78%)	1 (2.78%)

Uncorrected Visual acuity wise distribution in 72 number of eyes

symptoms	UCVA – OD		UCVA – OS		Percentage
	Males	Females	Males	Females	
6/9 and better	17	9	17	9	72.22%
6/12 – 6/60	4	2	3	1	13.89%
6/60 - 3/60	2	1	3	1	9.72%
Less than 3/60	1	0	1	1	4.17%

Other ocular complaint wise distribution of 36 children

symptoms	Males	Females	Total	Percentage
Eye pain	14	16	30	83.33%
Watering	18	21	29	63.89%
itching	17	14	31	86.11%
Redness	8	6	14	38.88%

RESULTS

Improvement in visual acuity in 72 number of eyes

symptoms	OD Mean BT	OS Mean AT	Percentage of improvement	p value
6/9 and better	29	30		
6/12 – 6/60	2	1		
6/60 - 3/60	4	3	14.28%	p > 0.05
Less than 3/60	1	2		

Relief in the associated ocular complaints in 36 children

Symptoms	Mean BT	Mean AT	Percentage of improvement	p value
Eye pain	1.8	1.3	27.77%	p > 0.05
Watering	1.4	1.0	28.57%	p > 0.05
itching	2.1	1.0	52.38%	p < 0.05
Redness	1.6	0.8	50%	p < 0.05

DISCUSSION

School going age is one of the most important periods in the life due to its importance in the mental development and personality development of a person. Any obstacle hindering this should be detected as early as possible. The causes of blindness in children differ from those in adults and require different strategies. Many of the causes of childhood blindness are avoidable, being either preventable or treatable⁷. Early detection is imperative to the successfully manage paediatric eye diseases. Also it is imperative to tackle causes of ocular morbidity on an urgent basis as children can develop amblyopia unlike in adults. Because of the wide range of causes of childhood morbidities and subsequent blindness, intervention needs to be disease-specific and directed at more, rather than at one level of the eye-care delivery system. So the ophthalmic evaluation plays an inevitable role in the prevention of pediatric eye diseases.

Ayurveda considers children are vulnerable group for various diseases because of their *Apoorna dhatu* formation⁸. And due to this reason itself they require special consideration during management. *Sapthamritha loha* is a drug which is widely accepted for various diseases like *Jwara*, *Klama*, *Sopha*, *Amlapittha* etc. but this one drug widely used in ophthalmic practice due to its *Chakshushya rasayana* action. *Triphala*, *Madhu* and *Ghritha* are the ingredients which make this drug extensively useful in eye diseases. Acharya Charaka mentioned that⁹ and all acharyas opined that for maintaining the ophthalmic health use of *Triphala* along with *Madhu* and *Ghritha* are highly recommended i.e¹⁰ by considering these facts *Sapthamritha loha* was selected as the drug for administration. Most of the children i.e 63.88% were from 5-7 age group and 72.22% children presented with 6/9 or better vision. Itching (86.11%) and eye pain (83.33%) were the commonly observed asthenopic symptoms which indicate that even though these children have very mild visual impairments, their working atmosphere may be the reason for this much of eye strain. In most of the children itching is observed without any allergic manifestation because the act of rubbing eyes can relieve eye strain.

Itching and redness was the main asthenopic symptoms showed good relief with statistical significance (p < 0.05) after the administration of the drug. This indicates that the drug is effective in relieving the eyestrain even though it doesn't show any good effect in improving the visual acuity (p > 0.05). For getting a considerable effect in visual improvement, a long duration study is required. It is evident that each parent showed sincere effort for administering the drug and this may be the reason for getting the immediate effect in itching and redness. In few cases, the children grouped under 6/12 – 6/60 vision category before treatment shifted to the 6/9 or better group. But as the number is very less, this may be a chance variation and for more dependable data, large group studies are needed.

CONCLUSION

Form this study it can be concluded that the drug *Sapthamritha loha* is a good *Chakshushya rasayana* and which can be recommended for children for improving the quality of vision. Nevertheless the visual acuity is not augmented in this study, the improvement seen in itching and redness indicated that the eyestrain is relived considerably. The eye health awareness is essential for the school teachers and parents because the early detection is very essential for the successful management of paediatric eye diseases.

References

1. Rahi JS, Gilbert CE, Foster A, Minassian D. Measuring the burden of childhood blindness. *Br J Ophthalmol* 1999;83(4):387-8.
2. Gilbert C, Foster A. Childhood blindness in the context of VISION 2020--the right to sight. *Bull World Health Organ* 2001;79(3):227-32.
3. Nirmalan PK, Sheeladevi S, Tamilselvi V, Victor AC, Vijayalakshmi P, Rahmathullah L. Perceptions of eye diseases and eye care needs of children among parents in rural south India: the Kariapatti Pediatric Eye Evaluation Project (KEEP). *Indian J Ophthalmol* 2004;52(2):163-7.
4. Dandona R, Dandona L, Srinivas M, Sahare P, Narsaiah S, Munoz SR, et al. Refractive error in children in a rural population in India. *Invest Ophthalmol Vis Sci* 2002;43(3):615-22.
5. Agnivesha, Charaka Samhita, Comm. Chakrapanidatta Ed. R.K. Sharma, Bhagawandash, Chaukhamba Sanskrita Series, Varanasi, 1984; Shareerasthana 1/149
6. Govida Dasa, Bhaisayaratnavali; Chaukhamba Sanskrita Series, Varanasi, 1984; Shoolarogadhikara 20/34
7. Gilbert C, Muhit M. Twenty years of childhood blindness: what have we learnt? *Community Eye Health* 2008;21(67):46-7.
8. Agnivesha, Charaka Samhita, Comm. Chakrapanidatta Ed. R.K. Sharma, Bhagawandash, Chaukhamba Sanskrita Series, Varanasi, 1984; Shareerasthana 4/41
9. Agnivesha, Charaka Samhita, Comm. Chakrapanidatta Ed. R.K. Sharma, Bhagawandash, Chaukhamba Sanskrita Series, Varanasi, 1984; Sutrasthana 25/40
10. Vagbhata, AshtangaHridaya - SarvangaSundari Comm. Arunadatta, Chaukhambha Krishna Das Academy, Varanasi, 2000; Sutrasthana 8/44

How to cite this article:

Sreekumar.K., Sindhu C and Shaju M.K.2017, Effectiveness of Sapthamritha Loha Granules In Improving The Quality of Vision In Children Aged Five To Eleven Years In A Rural Region In Kerala State. *Int J Recent Sci Res.* 8(11), pp. 21455-21458. DOI: <http://dx.doi.org/10.24327/ijrsr.2017.0811.1077>
