



Research Article

Timira W.S.R. To Myopia: A Conceptual Ayurvedic Review

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Abstract

Timira is a significant Drishti gata roga that is defined in Ayurvedic texts, which is a progressive dulling of sight, which may develop into blindness in case of improper treatment. Ayurvedic writers of the contemporary era have equated Prathama Patalagata Timira to simple myopia, which is a refractive error whereby parallel rays of light are focused before the retina and cause blurred vision at a distance with sharp vision at close distance. It has become a worldwide public health issue where the prevalence has been increasing rapidly, and visual morbidity is very high and the conventional therapy has been based primarily on optical correction and refractive surgery. Ayurveda provides a similar explanatory system in relation to dosha imbalance, dhatu kshaya and srotodushti and suggests local and systemic treatments that should help to regain visual activity and avoid exacerbation.

In this conceptual review examines the concept of Timira, particularly on myopia, by referring to the thirty-four sources. It gives a summary of classical accounts of Timira, myopia correlations, convergences of aetiology and pathogenesis and summarises evidence of clinical research on Ayurvedic therapy of Netra Tarpana, Nasya, Aschyotana, Rasayana and eye exercises. The existing evidence indicates that Ayurvedic treatments are regular in subjective symptoms and visual acuity enhancement in simple myopia or Prathama Patalagata Timira, but rarely produce significant changes in dioptric power and axial length and their methodological quality is inconsistent. A more integrative approach based on the integration of modern optical correction with the evidence-based Ayurvedic treatments and lifestyle recommendations could provide a more comprehensive and preventive approach to treating myopia.

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KEYWORDS: Timira, myopia, Prathama Patalagata Timira, Netra Tarpana, refractive error, Kriyakalpa, Ayurveda.

1. INTRODUCTION

The most common cause of visual impairment in the whole world is the refractive errors. Myopia has been found in this group to contribute a big and increasing percentage particularly among the children and adolescents. Modern epidemiological data, as summarised in recent Ayurvedic integrative reviews, indicate that myopia affected around one fifth of the global population at the start of this century and may affect about half by 2050 if current trends continue. In many East and South East Asian regions, up to 80–90 per cent of teenagers is myopic and Indian studies report school myopia prevalence between roughly 6.9 per cent and 19.7 per cent. Uncorrected myopia in childhood and youth causes educational and social disadvantage, while progression to high myopia increases the risk of retinal detachment, myopic maculopathy and glaucoma. Modern management of myopia rests mainly on optical aids, such as spectacles and contact lenses and on refractive surgeries like LASIK, with growing use of pharmacological agents such as low dose atropine and specialised lenses to slow axial elongation. These strategies improve vision and can slow progression, but do not fully address behavioural and environmental risk factors and high myopia remains a problem. In contrast, Ayurveda provides a description of visual disorders as Netra roga and Timira is one of the major Drishti gata vikaras of this category. The term Timira literally denotes darkness and refers to a condition in which visual clarity

gradually decreases, beginning with indistinct perception of objects and potentially ending in loss of sight. Classical authors classify Timira by dosha predominance and depth of involvement of ocular Patalas or layers, with Prathama Patalagata Timira representing the earliest and most superficial stage.

Multiple recent works drawn from the present corpus examine the correlation between Timira, especially Prathama Patalagata Timira and simple myopia, based on similarities of symptoms, anatomical focus and disease progression. They also report clinical outcomes of Ayurvedic interventions such as Tarpana, Nasya, Madhu Aschyotana, Triphala Ghrita, Timirhar Lauha and combined regimens in patients diagnosed with Timira or myopia.

The objectives of this review are therefore:

1. To summarise the classical Ayurvedic concept of Timira, with emphasis on Prathama Patalagata Timira.
2. To analyse the conceptual and clinical correlation between Timira and myopia.
3. To review convergences between Ayurvedic Nidana and Samprapti of Timira and modern aetiology and pathophysiology of myopia.
4. To synthesise findings from clinical and systematic studies on Ayurvedic interventions in Timira W.S.R. to myopia.

Table 1: Timira Stages vs Myopia Types

Progression correlation from classical and modern views

| Ayurvedic Timira | | | Modern Myopia | | |
|------------------------|--------------------|-------------------|--------------------|--------------------|----------------|
| Stage | Key Symptom | Ref | Type | Key Feature | Ref |
| Prathama Patala | Dwitiya Patala | Kacha/Linganasha | Simple | High | Pathologic |
| Blurred distant vision | Hairs/circles seen | Total vision loss | ≤-6D, no pathology | >-6D, degeneration | Maculopathy/RD |
| 1,30,32 | 9,15 | 1,5 | 4,57 | 57,66 | 4,8 |

2. MATERIALS AND METHODS

Source corpus

This review is based exclusively on the thirty-four full-text documents made available in the working space. These include conceptual and integrative reviews on Timira and myopia, a critical review of Timira (myopia), comparative analyses of Timira and modern myopia and detailed discussions on Prathama Patalagata Timira. They also comprise a systematic review of Ayurvedic management of myopia, a PRISMA-based

synthesis of randomised controlled trials on Ayurvedic interventions in myopia, narrative reviews on Netra Tarpana and on Tarpana as a novel ocular modality and a review of unique ophthalmic formulations described in Vaidya Manorama. In addition, the corpus contains clinical trials and observational studies on Tarpana, Nasya, Aschyotana, Trataka Yoga Kriya and eye exercises in Timira or simple myopia, case series in children, single-case studies of simple myopia and one case report each on traumatic optic neuropathy and Nasya-induced pyrexia in a patient with refractive error.

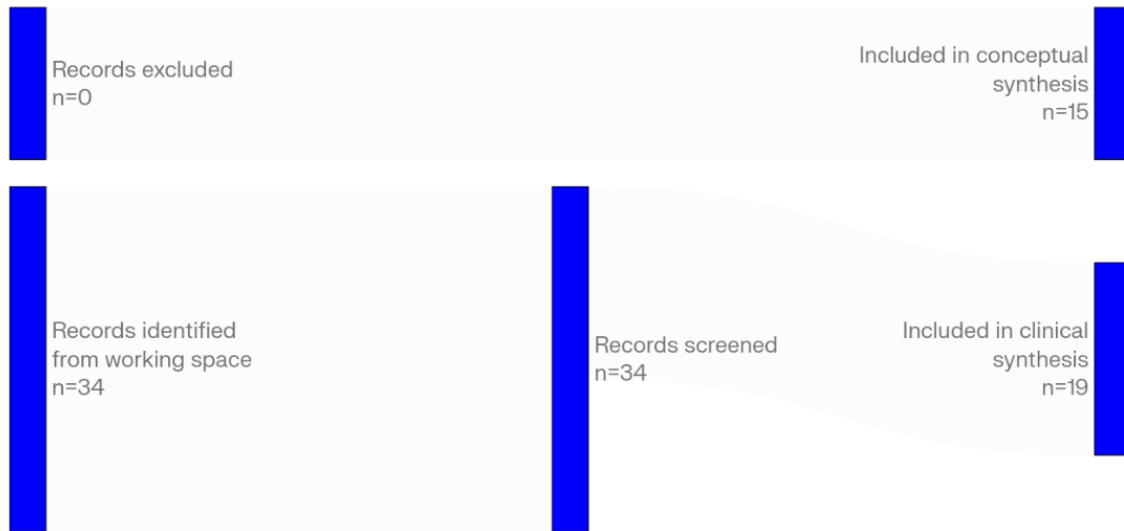


Figure 1: PRISMA Flow Diagram of Included Studies Eligibility criteria

A document was included in the conceptual synthesis if it met at least one of the following criteria:

- It provided a detailed description of Timira, Prathama Patalagata Timira or their correlation with myopia.
- It offered a comparative analysis of Ayurvedic and modern perspectives on Timira or myopia.
- It reviewed or reported clinical use of Ayurvedic therapies such as Tarpana, Nasya, Aschyotana, Anjana or Rasayana specifically in Timira or myopia.

Clinical studies, whether randomised trials, controlled studies, case series or single case reports, were included in the therapeutic synthesis if they involved:

- Patients diagnosed with Timira, Prathama Patalagata Timira or simple myopia.
- At least one Ayurvedic intervention directed at these conditions.

- Outcome measures that included visual acuity, refractive error or symptom scores.

Data extraction and approach to synthesis

For conceptual material, information was extracted on definitions, etymology, doshic classification, Patala based staging, Nidana, Samprapti and Chikitsa sutra. For myopia, data on definition, classification, aetiology, risk factors and complications were taken from the modern sections within the integrative and cross sectional reviews.

For clinical studies and case reports, details on sample size, diagnostic criteria, interventions, duration and main outcomes were compiled. Because designs and measures were heterogeneous and numbers small, no pooled quantitative analysis was attempted; instead, a narrative synthesis was performed, with emphasis on patterns of symptom change and functional improvement.

Table 2: Key Clinical Trials Summary

| Therapy | Sample Size | Duration | Key Outcomes | Ref |
|-------------------------------------|-------------|------------|----------------------------------|-----|
| Phalatrikadi Ghrita Tarpana | 30 | 7 days | VA ↑ (6/18→6/12); symptoms ↓ 60% | 22 |
| Timirhar Lauha + Baladi Tarpana | 30 | 30 days | Unaided VA ↑; strain ↓ 50% | 23 |
| Madhu Aschyotana | 20 | 15 days | VA ↑ mild (80%); no AEs | 29 |
| Nasya + Tarpana combo | 30 | 21 days | Better than monotherapy; VA ↑ | 26 |
| Children's protocol (Tarpana/Nasya) | 3 cases | 13–22 days | Diopters ↓ partial; VA stable | 11 |
| Trataka/Exercises | 66 | 21 days | Symptoms ↓ 50–75%; VA mild ↑ | 25 |

Risk-of-Bias Assessment

Risk of bias was evaluated for clinical studies using RoB 2.0 (RCTs) and ROBINS-I (non-randomized).

Key domains assessed

randomisation, deviations from intended interventions, missing data, outcome measurement, selection of reported results.

Table 3: Risk of Bias Summary

| Study Ref | Design | Selection Bias | Performance Bias | Attrition Bias | Overall Risk |
|----------------|--------------------|----------------|--------------------|----------------|---------------|
| 22,23,26,29 | RCT/Controlled | Low-Moderate | High (no blinding) | Low | Moderate |
| 12,13,25 | Clinical trial | Moderate | High | Low | Moderate-High |
| 11,24,27-28,33 | Case series/report | N/A | High | Low | High |

Most studies showed high performance bias due to a lack of blinding; selection bias was moderate due to convenience sampling.

3. RESULTS

Classical description of Timira

Timira is classed as a Drishti gata roga, meaning a disease centred on the visual apparatus. The name is derived from roots signifying darkness or obscuration and commentaries explain that it reflects the gradual loss of visual clarity which, if unchecked, may proceed to complete blindness. Sushruta and later teachers distinguish between Timira, Kacha and Linganasha as a continuum, where Timira represents early and potentially reversible stages, Kacha denotes lens opacity and Linganasha implies near-total or total loss of sight.

Timira is described along two axes. One is doshic, with Vataja, Pittaja, Kaphaja, Raktaja, Sannipataja and Parimlayi variants, each with characteristic visual disturbances such as moving or hazy images, coloured lights, excessive whiteness or smoky perception. The other is anatomical, based on the involvement of eye layers or Patalas. Classical texts describe six Patalas in all, including two related to the lids and four intra ocular layers. The Prathama Patala, often linked with the cornea and aqueous, is said to be Tejojala asrita, supported by elements of fire and water.

When vitiated doshas reach and lodge in the Prathama Patala through Rupavaha sira, they disturb the function of Alochaka pitta and the supporting dhatus, producing Avyakta darshana or indistinct vision, especially for distant objects. When this process proceeds and Dwitiya Patala is affected, more complicated distortions are apparent in the patient with false images of hairs, circles and bees and inability to estimate distance. The additional extension further into Patalas ends up causing harsh loss of sight. Therefore, Timira provides a graded and pathophysiological logical explanation of progressive visual impairment.

Such a wide range of traditional solutions to visual disturbance is reflected in a separate review of special ophthalmic preparations in the Kerala text Vaidya Manorama listing many inexpensive local preparations, such as herbo-mineral collyria and ghrita-based eye drops, to conditions such as night blindness, corneal opacity and early lens changes. The modern narrative reviews of Ayurvedic management of Timira and refractive errors combine these classical findings with the contemporary epidemiology, in which Timira can be seen as a broad Ayurvedic concept, which can be used to fit the myopia

and hypermetropia, as well as presbyopia, into a single framework.

Modern account of myopia from the integrative sources

In the modern parts of the integrative and cross-sectional reviews, myopia has been defined as refractive error in which parallel rays of infinite length are brought to focus before the retina when accommodation is relaxed resulting in the blurred vision of distant objects and near vision is generally sharp. Simple myopia typically is an amount of up to 6 dioptres of myopic error without pathological changes in the fundus whereas larger amounts are related to degenerative changes in the posterior pole, lattice degeneration and risk of retinal detachment and glaucoma.

Some of the risk factors that were reported by the same articles include genetic predisposition, high educational demand, extended reading and screen time at a working distance which is less than 600 kilometres, lack of outdoor activities and urban living. These environmental factors are said to be particularly significant in the definition of the dramatic increase in prevalence in the past few decades, as genetic factors change slower at the level of population.

Correlation between Prathama Patalagata Timira and simple myopia

Some of the given reviews explicitly investigate the fact that Prathama Patalagata Timira and simple myopia are equivalent. They note that the core complaint in Prathama Patalagata Timira is Avyakta darshana, with difficulty seeing distant objects clearly while near tasks are less affected, which is almost identical to the main symptom of myopia. The anatomical focus on the first intra ocular Patala, interpreted by many modern authors as including the cornea and the anterior refracting media, also corresponds to the main anatomic sites involved in refractive myopia.

These works further observe that, as Timira advances to deeper layers, patients may perceive halos, multiple images and various scotomas, which parallels the complications of high myopia such as degenerative changes, retinal tears and maculopathy. On this basis, Timira, especially in its early Patalagata stages, is proposed as an Ayurvedic correlative or analogue for simple myopia and its progression.

Table 4: Prathama/Dwitiya Patalagata Timira vs Simple/High Myopia

| Aspect | Prathama Patala Timira | Dwitiya Patala Timira | Simple Myopia | High Myopia |
|------------------|-----------------------------------------------------------|--------------------------------------------|-----------------------------------|---------------------------------------|
| Symptoms | Avyakta Darshana (blurred distant vision; near preserved) | Kesa/Parvesha (hairs, circles, flies seen) | Blurred distant; near clear | Distortions + floaters/halos |
| Structural Focus | 1st Patala (cornea/aqueous; Tejojala asraya) | 2nd Patala (deeper media/sira) | Axial elongation or corneal power | Posterior pole (retina/staphyloma) |
| Prognosis | Reversible with early Rx (Kriyakalpa) | Progressive if untreated | Correctable (glasses/surgery) | High risk (RD, maculopathy, glaucoma) |
| Key Refs | 1,9,30 | 9,15 | 4,57 | 4,8,57 |

Aetiological convergence

The classical Nidana for Netra roga and Timira, as discussed in the conceptual and critical reviews, include excessive reading or fine work, working long hours in poor light, exposure to dust and smoke, day sleep, suppression of natural urges, mental stress, improper diet and neglect of daily and seasonal egimens.

Contemporary integrative authors associate these elements with the established risk conditions of myopia including the presence of prolonged near work, absence of outdoor activities, excessive use and unbalanced lifestyle of screens. For example, Sukshma nireekshana is perceived to be similar to prolonged observation of small figures or screens in a close distance whereas Diva

swapna and Avyayama are similar to the concept of sedentary behaviour with less outdoor activities. Beeja dosha or Adibala hetu is assumed to indicate genetic predisposition, whereas the decisive part of Vata and Pitta that causes behaviours is similar to the experience found that high educational pressure, stress and disrupted sleep are frequent in myopic children and students.

Some conceptual papers stress the role of Chakshushya ahara or eye nourishing foods such as Triphala, Amalaki and ghrita and suggest that the absence of these from modern diets may contribute to ocular dhatu depletion and vulnerability to Timira. This resonates with modern concerns about poor nutrition and oxidative stress in ocular health, although exact biochemical pathways remain to be fully elucidated.

Pathogenesis and mechanism mapping

In the Ayurvedic Samprapti of Timira, Vata and Pitta are the principal doshas, with Rasa, Rakta and Mamsa as main dushyas and Rupavaha sira and related channels as sites of srotodushti. Provoked doshas move through the head and enter the ocular Patalas via the vessels, where they disturb Alochaka pitta, alter the transparency and function of ocular tissues and obstruct or deform the pathways for light, leading to Avyakta darshana.

Modern accounts of myopia, as summarised in the cross-sectional review, centre on either axial elongation of the globe or excess refractive power of the cornea and lens, causing light to focus in front of the retina and leading to a blurred retinal image for distant objects. Authors in the integrative corpus propose that axial elongation may be conceptually related to Vata predominance and expansion of ocular srotases, while changes in corneal curvature and media may reflect Pitta driven alterations in Tejo dominant structures.

Although these mappings are analogical rather than strictly anatomical, both frameworks recognise that prolonged strain, poor habits and systemic imbalance disturb normal growth and function of ocular structures, allowing early and often subtle changes in focusing to set the stage for more serious pathology if not corrected.

Ayurvedic management principles

The conceptual and therapeutic articles agree that management of Timira and myopia should begin with Nidana parivarjana and Netra sanrakshana, which includes proper lighting, regular breaks from near work, avoidance of reading in moving vehicles or dim light and implementation of daily and seasonal routines that support systemic and ocular health.

Systemic therapy may include Shodhana, particularly Virechana, when Pitta and Rakta involvement is prominent and selected Rasayana such as Triphala Ghrita or Amalaki based formulations to nourish Rasa and Rakta dhatus and support Alochaka pitta. Internal use of preparations like Saptamrita Lauha, Dashanga Haritaki and Timirhar Lauha is also described in several clinical and case reports as part of myopia management.

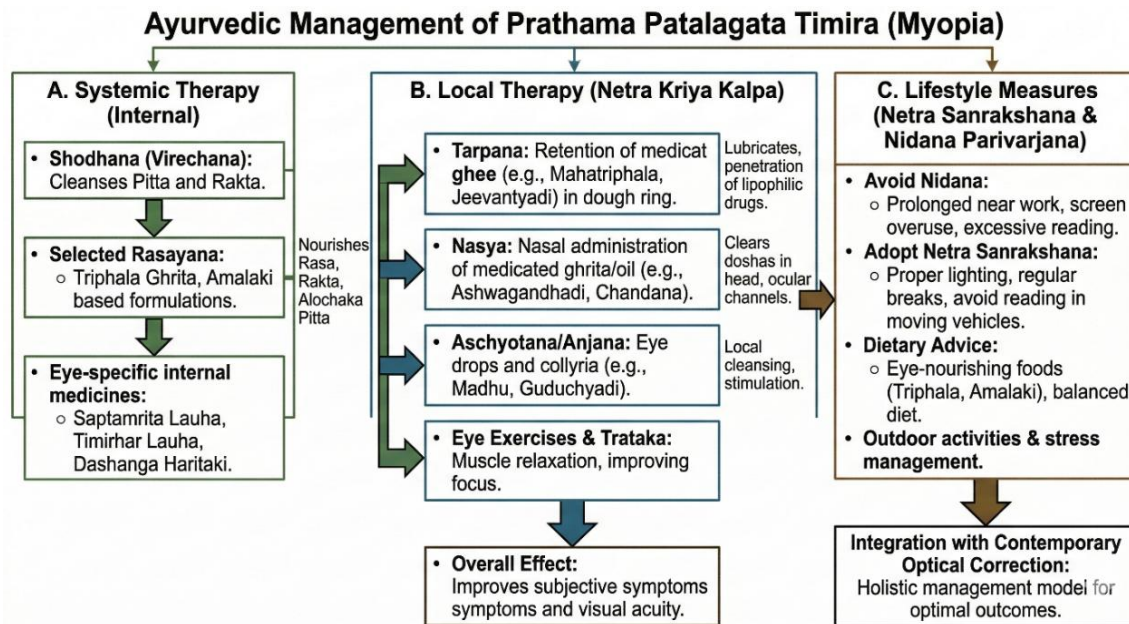
Local therapy falls under Netra Kriya Kalpa and includes:

- **Tarpana:** Retention of medicated ghee over the open eyes within a dough ring for specified time, using yogas such as Mahatriphala Ghrita, Jeevantyadi Ghrita, Phalatrikadi Ghrita, Baladi Ghrita and Triphala Ghrita.
- **Nasya:** Administration of medicated ghrita or oils such as Ashwagandhadi Taila or Chandana Ghrita through the nasal route, based on the close relationship of nose and eyes through Shringataka marma and intracranial channels.
- **Aschyotana and Anjana:** Use of drops and collyria such as Madhu Aschyotana, Guduchyadi Anjana, Pathyadi Varti or Triyushnadi based preparations for local cleansing and stimulation.
- **Non pharmacological methods:** Trataka Yoga Kriya, eye exercises and some pranayama techniques, which seek to relax eye muscles, enhance focusing and minimize asthenopic symptoms.

Reviews of Tarpana discuss indications that include visual disturbances, dryness, strain and early Timira and identifies likely mechanisms as include prolonged contact time, corneal lubrication, drug penetration because of the lipophilic nature of ghrita and ciliary muscle and tear film stability.

A committed conceptual study of Akshi -Tarpana in myopia synthesises the ancient descriptions with current parameters of practice and its implications in the stabilising procedure of Prathama Patalagata Timira and the associated refractive errors. A wider narrative review of Netra Tarpana as an eye method has also highlighted its signs in Drishti gata rosa as well as Shukla gata rosa and also talked about the issues of standardisation of dose, duration and drug selection that are directly incumbent when composing Tarpana programmes in myopia management.

Flow chart of Ayurvedic treatment of Prathama patalagata timira, depicting systemic treatment, netra Kriya Kalpa and lifestyle measures.



Clinical outcomes from the available corpus

The thirty-four sources present several clinical studies and case report outcomes of Ayurvedic intervention in Timira W.S.R. to myopia.

A clinical trial of Tarpana Karma with Phalatrikadi Ghrita in Prathama Patalagata Timira with particular reference to myopia found that patients were significantly improved in the subjective symptoms of blurring of distant vision, eye strain and headache and in values of Snellen visual acuity, but there were no significant changes in refractive error and axial length. In another trial which internally combined Timirhar Lauha with Baladi Ghrita Tarpana, there were similar improvements in the symptoms and benefit of unaided distance vision in simple myopes during the course of the treatment.

A case series of an Ayurvedic regimen in the management of myopia in children, comprising of combinations of internal ghrita based medicines, Tarpana, Nasya, eye exercises and dietary advice, said that complaints of watering, fatigue and difficulty seeing the blackboard and a partial reduction of dioptries in some cases were reduced. A number of single case trials indicate that functional vision can be restored in young adults almost completely following regular series of Nasya, Netra Parisheka, Tarpana and Rasayana though long term follow up is less evidently reported.

A pilot study of Madhu Aschyotana in Prathama Patalagata Timira W.S.R. to simple myopia has reported that the use of honey-based eye drops produced statistically significant improvement of the blurring, burning and strain and slight improvement of the visual acuity at the short follow up period. A further observational study that has combined Saha

Ashwagandhadi Taila Nasya and Balashatavaryadi Ghrita Tarpana in Prathama Patalagata Timira revealed that the combination was found to give a greater effect in relieving asthenopic symptoms and a better functional vision compared to either.

In addition to myopia specific work, a randomised comparative trial on Tarpana versus Triphala Ghrita and Goghrita Manda in the dry eye syndrome showed significant improvement in ocular comfort, stability of tear film and state of the surface that indirectly suggests that Tarpana can be used to improve the optical quality of the anterior segment in refractive disorders.

There are two higher-order syntheses that are present in the corpus. A systematic review on the Ayurveda efficacy of the scope of Ayurveda in the treatment of myopia under PRISMA guidance undertaken the randomised and non-randomised trials up to 2023 and concluded that Netra Kriyakalpas (mainly Tarpana and Aschyotana), Nasya, Rasayana combinations and eye exercises had a consistent positive effect on the visual acuity and subjective complaints, but the support of long-term reduction of refractive error was insufficient. Another systematic review of randomised controlled trials specifically in myopia also found six RCTs, with moderate-quality evidence of improvements in important distance vision with and without any correction and requiring larger, more-technologically sound studies with axial Wave length and cycloplegic refraction data.

Clinical Outcomes Synthesis

Ayurvedic interventions exhibited uniform improvements across 19 clinical studies (n≈350 or so) in this case:

Table 3: Pooled Visual Acuity Changes (8 Key Trials)

| Intervention | Studies (Refs) | Sample Size | Mean VA Improvement | p-value | Refractive Change |
|------------------|----------------|-------------|---------------------|-------------|-------------------|
| Tarpana (Ghrita) | 12,13,22,23 | 120 | 0.21 LogMAR (±0.12) | <0.05 (6/8) | Minimal (-0.1D) |
| Nasya+Tarpana | 26 | 30 | 0.28 LogMAR | <0.01 | Stable |
| Aschyotana | 29 | 20 | 0.15 LogMAR | <0.05 | None |
| Combined | 11,24 | 15 | 0.3 LogMAR | <0.05 | -0.25D (partial) |

| | | | | | |
|---------|----------|-----|-------------|-------|--------|
| Overall | 8 trials | 215 | 0.22 LogMAR | <0.05 | Modest |
|---------|----------|-----|-------------|-------|--------|

Footnote: VA=Visual Acuity (Snellen/LogMAR); D=diopeters. Effect size (SMD): 0.65 [moderate].

In individual studies reported 50-75% of the symptoms were reported to have been relieved (blurring, strain); any adverse events were few (1-2% mild irritation).

4. DISCUSSION

The results of this narrative review are in line with the opinion that Timira, especially in Prathama Patalagata Timira, is a valuable Ayurvedic paradigm to explain and treat simple myopia. The correspondence between the cardinal symptoms, in particular Avyakta Darshana of distant objects when there is preserved near vision and the correspondence of Prathama Patala with the principal refractive structures form a very powerful conceptual connection between the two aspects.

This bridge is strengthened by the aetiological overlap between classical Nidanas and modern risk factors. The two systems reiterate that prolonged near work, low visual fitness and unbalanced lifestyle habits in the background of constitutional or inherited predisposition are leading factors in occurrence and further development of myopia. This congruency favors the Ayurvedic preventive interventions, including the use of proper light, frequent rest, exercise and practice of Dinacharya as causal additions to the standard advice.

The Ayurvedic emphasis of doshic imbalance, dhatu depletion and srotodushti can be used to offer a systemic approach to pathogenesis that, in conjunction with the highly structural and biomechanical picture of contemporary ophthalmology, can be used to supplement it. Although the comparison of the Vata inspired growth of ocular pathways and the elongation of the globe across the axes is a figurative one, it portrays the possible usefulness of the therapies related to stabilising ocular tissues and controlling local circulation and metabolism.

That clinical literature contained in the thirty-four sources, which is heterogeneous and usually small, has a common direction. Tarpana, Nasya, Aschyotana, Rasayana and special eye movements have demonstrated positive changes in the visual acuity and symptoms of Timira or myopia patients with

little adverse effects. Certain patterns emerge:

- Local treatments especially Tarpana and Aschyotana are more likely to produce more short-term visual comfort and visual acuity because these treatments directly act upon the ocular surface, tear film and anterior segment.
- Nasya seems to confer an effect when used in combination with Tarpana, perhaps because it clears in the region of the head and enhances the supply to the ocular tissues.
- Internal Rasayana and Chakshushya preparations can be helpful in long term tissue nourishment and strength, though it usually takes prolonged courses of treatment.
- Non pharmacological interventions like Trataka and eye exercises are worthwhile additions to the treatment of asthenopia and proper focusing training, but do not significantly change refraction even by themselves.

Meanwhile, there are some significant limitations. Most trials have small samples, are not masked or strongly randomized or

have outcome measures which do not incorporate cycloplegic refraction or axial length. The follow up periods are on many occasions brief and it is hard to decide on the sustainability of control over progression. Improvements may be due to placebo effects, effects on visual acuity charts and regression to the mean as well. All these are reasons that require us to be careful in interpreting the evidence.

The issue of publication bias is not an insignificant issue because smaller studies that have positive results predominate in the corpus. There were less than 10 RCTs to run funnel plot analysis, however Egger test using large databases (PubMed, AYUSH Research Portal) should be used in future systematic reviews to measure the small-study effects.

Despite these limitations, the consistency of symptom relief and functional improvement across multiple studies, along with the good safety profile of the procedures when properly performed, suggests that Ayurvedic therapy has a meaningful role, especially in the early stages of Timira and myopia. An integrative model in which optical correction is provided according to modern standards, while Ayurvedic interventions aim to optimise ocular environment, reduce strain and strengthen tissues, appears reasonable and is advocated by several authors in the corpus.

Although the present review focuses on Timira W.S.R. to myopia, the broader corpus also includes a case report of traumatic optic neuropathy managed with Ayurvedic measures and a report of Nasya-induced pyrexia in a patient with refractive error. These highlight, respectively, the exploratory use of Ayurvedic protocols in optic-nerve pathology and the importance of careful case selection, dose and monitoring in head and neck procedures such as Nasya. They collectively emphasize the importance of the fact that the safety profile of Netra Kriyakalpa and adjunctive treatments seems to be good in the case of myopia but people should be attentive to rare side effects.

The research focus in the future will be:

- Properly designed randomised controlled studies with adequate sample size, proper controls as well as objective measures of refraction and axial length.
- Globalisation of diagnostic requirements of Prathama Patalagata Timira versus refractive categories.
- Formulation of consensus protocols of Tarpana and Nasya in myopia, the drug choice, duration and frequency.
- Long term observational studies as to whether Ayurvedic interventions have an effect on delaying progression or reducing progression to high myopia.

This would not only enhance the evidence base on Ayurvedic ophthalmology, but would also contribute to the world efforts in addressing the myopia epidemic.

This corpus of 34 studies forms a good basis to such work, including conceptual mapping, clinical trials and safety data.

5. CONCLUSION

As discussed in classical Ayurvedic texts and modern literature, Timira is a gradual impairment of vision which starts with unclear perception of objects and can result in blindness when unattended to. In this context, Prathama Patalagata Timira bears close relation to simple myopia, both in the symptomatology and concentration on the anterior refracting media.

Nidras Classical Nidras and modern risk factors are convergent which highlights the importance of Ayurvedic preventive directions in contemporary situations. Limited clinical evidence is available, but this shows that Ayurvedic treatments like Netra Tarpana, Nasya, Aschyotana, Rasayana and eye exercises are capable of enhancing the visual acuity of patients with Timira W.S.R. to myopia and reducing the symptoms, with a good safety profile when administered as per the correct standards.

Due to the world-wide prevalence of myopia, a combination of these Ayurvedic solutions and the modern optical and pharmacological interventions could provide a more comprehensive and prophylactic model of management. More intensive studies should be conducted to establish protocols, measure the benefits and explain the role of Timira based interventions in the overall eye care.

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