



**AYURVEDIC MANAGEMENT OF AGE-RELATED MACULAR DEGENERATION – A CASE REPORT**

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Submitted on- 16-12-24

Revised on- 28-12-24

Accepted on-30-12-24

**ABSTRACT:**

Age-related macular degeneration (ARMD) is a progressive degenerative retinal disease in which there is a gradual progressive decrease in central vision. ARMD is the most common cause of blindness in developed countries mainly affecting the elderly, with a high prevalence among the age group more than 60 years. There are two forms of macular degeneration, dry/nonexudative and wet/exudative, and these differ in fundal findings and treatment options. Dry macular degeneration is due to accumulation of drusen between the retinal pigment epithelium and Bruch's membrane and eventually progresses to geographic atrophy. The exudative or wet form represents the most severe form with rapid progression despite therapeutic progress. It is characterized by the development of choroidal neovascularization, crossing the retinal pigment epithelium and developing below the macular area. A diagnosed case of Dry ARMD with complaints of diminished vision in both eyes approached *Salakyatantra* department of Government Ayurveda Medical College, Tripunithura, and after in-patient treatment significant improvement in vision obtained. *Ayurveda* treatment has significant results in improving vision and in the prevention and arrest further progression of the disease. So, it is necessary to report this case for identification of treatment strategies for the prevention of progression of ARMD.

**KEY WORDS:** Age-Related Macular Degeneration, ARMD, *Ayurveda* management, Optical coherence tomography.

**INTRODUCTION:**

Age-related macular degeneration (ARMD) is an acquired degeneration of retina that causes significant central visual impairment through a combination of non-neovascular (drusen and retinal pigment epithelium abnormalities), and neovascular derangement (choroidal neovascular membrane formation). It is a progressive, vision-threatening disease that affects older adults and is a leading cause of irreversible blindness. ARMD-associated visual loss predominantly occurs in later stages of the disease and manifests as deterioration of high-resolution central vision owing to several processes. It is the leading cause of blindness in developed nations, accounting for 8.7% of all blindness globally, especially in those over 60 years of age. As the population ages exponentially, its prevalence is also expected to rise.[1]

Until the early 2000s, no effective treatment was available for the dry or wet form of advanced ARMD. Treatment of non-exudative ARMD includes dietary supplements and antioxidants, smoking cessation, Amsler grid to detect new or progressive Metamorphopsia and Low vision aid in advanced cases of geographical atrophy. Treatment of exudative ARMD includes Intravitreal anti VEGF therapy, Intravitreal steroids and LASER photo coagulation.[2]

Treatment of ARMD with intravitreally injected inhibitors of vascular endothelial growth factor (VEGF) has transformed patient care, restoring or stabilizing vision in those with the neovascular form of disease. However, treatment of wet ARMD involves frequent multiple intravitreal injections and follow-up visits that pose significant financial and mental burdens. For patients with the

stilluntreatable dry form, slowly worsening vision remains the norm. In this review, ARMD management is addressed with an emphasis on stalling disease progression and on therapeutics in the pipeline.[3]

According to *Ayurveda* the pathological changes occurring in the ARMD can be understood in terms of the vitiation of the *Tridoshas* along with *Rakthadhathu*. It can be considered as a *Drishti gatha roga*. [4] The symptoms of the ARMD like blurred vision, central scotoma and distorted vision can be understood as the different *Lakshanas* of the progressive *Drishti rogas* like *Timira Kacha* and *Linganasa* like *Avyaktham ikshathe Roopam*, *Bhootham tu yatnat pasyathi* etc., which can be diagnosed according to the progression and stage of disease manifestation and status of the visual acuity of the patient. The dry ARMD can be considered as a *Vatha Kapha* predominant condition [4], and in later stages of the disease involvement of *Raktha* and *Pitha* will also become evident [5]. So, the management in *Ayurveda* aims at the body and *Agni* correction of the patient with *Panchakarma* therapy along with the judicious use of *Netra kriyakalpas*. [6]

#### **CASE REPORT:**

A 63-year-old woman who complained of gradual painless diminution of vision in both eyes for 3 years, was presented to Salakyatantra OPD, Government Ayurveda College, Tripunithura. 3 years back, she consulted an ophthalmologist at other hospital for the same complaints and detailed evaluation and OCT revealed RPE changes & drusen in OU with left eye foveal thinning suggestive of dry ARMD of both eyes and prescribed one ophthalmic solution. Due to the persistence of complaints, she

consulted elsewhere in last 2 years. So, she consulted here on 02/08/2022 Her un-corrected visual acuity was 6/24, <N36 RE, 6/60, <N36 LE and best corrected vision was 6/12, N8 RE and 6/60, <N36 LE. Her personal and family history and systemic evaluation were unremarkable. However, funduscopic examination revealed drusen and pigmentary changes in both eyes (Fig. 1). 2 months after the initial visit, she was admitted in our IP unit on 25/10/2022, to limit the progressive worsening of her visual acuity, which was 6/36(B) in the right eye and 5/60 in the left eye. Intraocular pressure measurements were normal. Slit-lamp examination showed cortical & nuclear opacities in both lenses, and funduscopic examination revealed bilateral progressed macular atrophy with drusen and pigmentary changes. OCT detected soft and hard drusen elevation of RPE with a moderately reflective cavity in either eye. (Fig. 2)

**Clinical findings:**

Patient was not having history of any systemic illness

Ocular examination:

- Visual examination: Distant visual acuity by Snellen chart (UCVA) in right eye was 6/36 (B) and left eye was 5/60
- Best corrected visual acuity (BCVA): Right eye (OD) 6/12, Left eye (OS) 6/60
- Extraocular motility: Full OU
- Pupils: OD 4 mm → 3 mm light OU; no RAPD
- IOP with applanation: OD 14 mmHg, OS 15 mmHg
- External and anterior segment examination: Normal OU

Lower palpebral conjunctiva – follicles & concretions OU

**Dilated Fundus Exam (Figure 1)**

- OU: Multiple large macular drusen, geographic atrophy

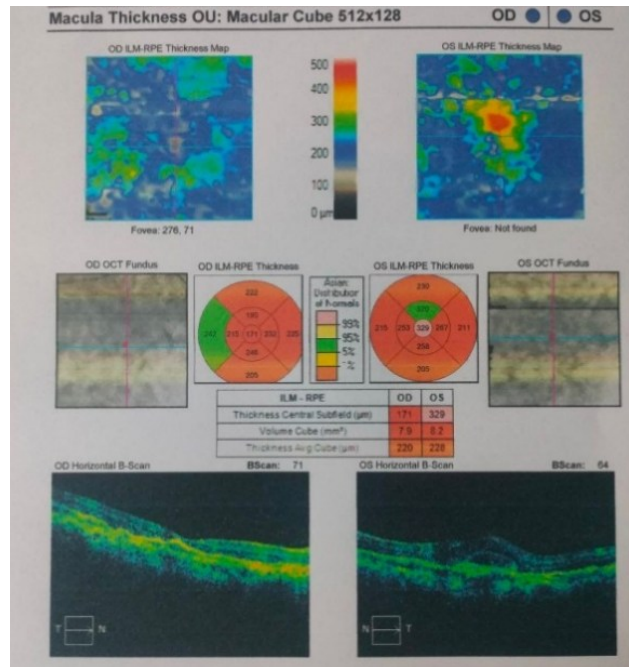
**Additional testing**

- OCT macula - retinal thinning & RPE changes and drusen OU

Soft and hard drusen with elevation of RPE with a moderately reflective cavity in either eye. In OS more confluent drusen and minor alterations in reflectivity are seen.



**Fig.1. Colour fundus photographs demonstrate scattered hard and soft drusen of varying sizes (including many large drusen) with geographic atrophy and pigmentary changes (OU)**



**Fig.2: Optical coherence tomography (OCT) of both eyes demonstrates retinal thinning, RPE changes and drusen OU, OS shows more confluent drusen and minor alterations in reflectivity**

**Diagnostic assessment:** Fundus examination revealed drusen on macula and geographic atrophy OU. OCT further confirmed it with retinal thinning, RPE changes and drusen OU, OS with more

confluent drusen and minor alterations in reflectivity. Thus, confirmed the diagnosis dry ARMD.

**INTERVENTION:**

**Table 1: Treatment provided during IP admission**

Sl no	Procedure	Medicine	Dose/ duration
1	Internal medications  <i>Netrasekam</i>	<i>Punarnavadi + Chiruvilwadi kashayam</i>  <i>Yogarajaguggulugulika</i> <i>Triphala choornam</i>  <i>manjishtha + triphalakashaya</i>	90 ml bd before food (6 am & 6pm)  1 bd with <i>kashaya</i> 1 tsp HS with Hot water 2 times/day, 8 am & 4 pm
2	<i>Acchasnehapanam</i> with <i>yamaka Sneha</i>	<i>Patavaladighritha</i> <sup>[8]</sup> + <i>Madhuyashtyaditailam</i>	7 days till <i>Samyak snigdhattha</i> (50ml to 200 ml)
3	<i>Abhyanga + ushma sweda</i>		2 days
4	<i>Vamanam</i>	<i>Madanaphalapippali choornam+yashtichoornam</i> + <i>saindhava</i> + honey	Qs

5	<i>Sadyasneham</i>	<i>Patavaladighritha</i>	3 days after vamana 10 ml for 1 day
6	Virechanam	Gandharva erandam	25 ml, 6 am
7	<i>Marsha nasya</i>	<i>Patavaladighritha</i>	1 day after virechana 2ml each nostril , 7 days
8	<i>Anjanam</i> + <i>kshalanam</i>	<i>Ilaneerkuzhampuanjanam</i> <i>Kshalanam with Triphala Kashaya</i>	6. 30 am, 5.30 pm
9	<i>Yogavasthi</i>	<i>Snehavasthi - madhuyashtyaditailam</i> <i>Kashaya vasthi- erandamooladi vasthi</i>	8 days <i>Snehavasthi -120 ml</i> <i>Kashaya vasthi- 480ml</i>
10	<i>Tarpanam</i>	<i>Patavaladi ghritha</i>	7 days, 15 mins
11	<i>Putapaka-(ropanam)</i>	<i>Putapaka rasa with yakrit mamsa and yasthi</i> <i>triphalakalkam</i>	1 day ,15 mins

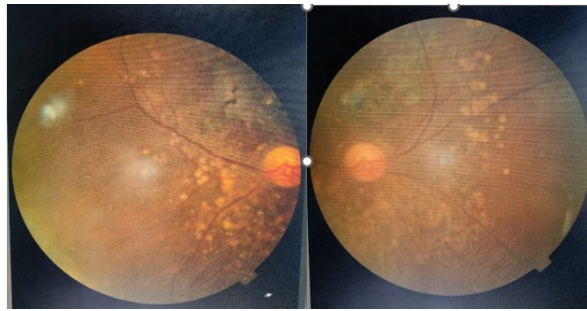
**Follow up & outcomes:** After completion of one month of post admission period, patient showed marked improvement in visual acuity. BCVA improved from 6/12 to 6/9 in RE and from 6/60 to 6/18 in LE (Table 1). Fundus examination and OCT also revealed non- progression of the pathology

(Figure 3 & 4). Visual acuity was preserved during the follow- up period. Patient was advised for regular vision check-up every month and also to continue *Ilaneerkuzhambu anjanam* and *Kshalana* daily.

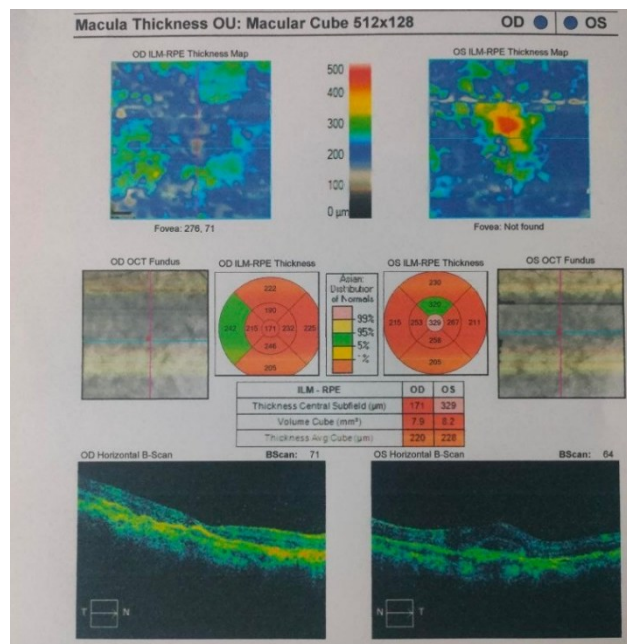
**Table 2: Improvement in vision**

	RIGHT EYE		LEFT EYE	
	BT	AT	BT	AT
UCVA	6/36(B)	6/24	5/60	6/60
NV	<N 36	<N 36	<N 36	<N 36
BCVA	6/12	6/9	6/60	6/18
BCNV	N 8	N 8	<N 36	N 36

UCVA- uncorrected visual acuity, NV -near vision, BCVA- best corrected visual acuity, BCNV- best corrected near vision



**Fig.3: Colour fundus photographs demonstrate scattered hard drusen of varying sizes (including many large drusen) with geographic atrophy and pigmentary changes**



**Fig.4: OCT of both eyes demonstrates retinal thinning, RPE changes and drusen OU**

**DISCUSSION:**

ARMD is a degenerative disease associated with ageing that affects the macula and causes gradual loss of central vision. It is the leading cause of the progressive vision loss and blindness in developed countries, in population above the age of 60 years. The ARMD can significantly impact an individual’s quality of life and an increase in the life span of populations worldwide has contributed to the rise in the prevalence of ARMD. This lights the need of preventive care and control further progression of the disease in elderly population with risk factors. The overall results of modern treatment in both types of ARMD are not very encouraging as it ends up in financial and mental burden to the patients due to repeated Intravitreal injections. According to *ayurveda* ARMD can be studied

under the *Drishti-rogas*. ARMD can be considered as *Sannipathika Drishtiroga*, i.e., *Timira, Kacha, Linganasa* according to the stage of the disease progression and status of the visual acuity. It is stemming from the imbalance of *Tridoshas* as a result of ageing along with *Raktha dhatu* vitiation. In the dry ARMD, predominance of *Vatha kapha Dosh* become evident. So, for correcting *Vatha dushti*, *Vasti* is the best treatment. As a result of degenerative changes and degradation of anti-oxidants due to ageing process, there is *Srotoavrodha* due to formation of *Ama* and for its management, *Agni* correction is also important. So, the treatment modality applied should be correct the whole body, not only the eyes. For the systemic correction, Ayurvedic treatment including *Accha snehapana, Vamana, Virechana, Vasthi*,

*Nasya, Tarpana, Putapaka* etc. can be adopted. It plays a significant role in controlling the disease and increases blood circulation and nourishes retina. The disease cannot be cured completely but can arrest the progression through *Ayurveda* management.

#### CONCLUSION:

Thus, from the above case report it can be concluded that Ayurvedic treatment modality is very effective in the management of ARMD. This study emphasizes on the effectiveness of *Ayurveda* treatment modality in arresting progression of central vision loss in age related macular degeneration. *Ayurveda* have a great role in prevention of the degenerative pathologies of eye by the *Netra samrakshana upayas* like *Triphala prayogas* by providing antioxidant effects which aiding in protection of vision. It can be concluded that application of *Sodhana* therapy along with *Netra kriyakalpas* have better effect in degenerative Ophthalmic disorders like ARMD.

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#### CITE THIS ARTICLE AS

Sreeja Sukesan, Pooja Jayaprasad. Ayurvedic Management of Age-Related Macular Degeneration – A Case Report. *J of Ayurveda and Hol Med (JAHM).* 2024;12(12):53-59

**Conflict of interest:** None

**Source of support:** None