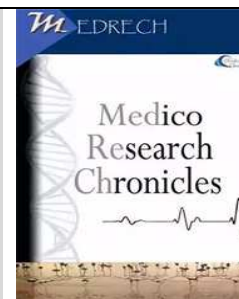




MEDICO RESEARCH CHRONICLES

ISSN NO. 2394-3971

DOI No. 10.26838/MEDRECH.2022.9.6.635

Contents available at www.medrech.com

STUDY OF CLINICAL PROFILE AND MANAGEMENT OF AGE-RELATED MACULAR DEGENERATION AT RURAL TERTIARY CARE HOSPITAL

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ARTICLE INFO

Article History

Received: October 2022

Accepted: November 2022

Key Words: ARMD – Age related macular degeneration, choroidal neovascularization, dry ARMD, wet ARMD.

ABSTRACT

Introduction: Age-related macular degeneration (ARMD) is the leading cause of irreversible blindness in elderly population after 5th decade. It is a degenerative disorder affecting macula, characterized by drusens and RPE changes. Choroidal neovascularization (CNV) and Pigment epithelial detachment (PED). Age, Gender, Smoking, Hypertension, Diabetes mellitus, Atherosclerosis, Obesity, Family history, Dietary habits are its known associated risk factors.

Aims/Objective: To Study Clinical profile, Risk factors and Management protocols in patients of Age Related Macular Degeneration at Rural Tertiary Care Hospital

Material and Methods: An observational, descriptive cross-sectional Hospital based study was conducted at a tertiary care hospital. Total 50 patients were evaluated through structured proforma. Patient's personal history, medical history, family history, alcohol consumption, smoking, systemic illness history like Diabetes mellitus, hypertension, were studied. Dilated Fundoscopic Examination readings was taken from OPD Patient records. Direct ophthalmoscopy and Slit lamp biomicroscopy with 90D lens were conducted. Management protocols were noted like Medical management, optical management, Reference to higher center. All patients of ARMD Attending Rural Tertiary Care hospital and Patients willing to participate in the study were included. Patients below 40 years of age and Patient having optical media opacities, Myopia, Uveitis, Glaucoma, Cataract, Vitreo retinal diseases were excluded.

Results: Out of 50 study patients, 60% were Females. Most common age group observed was 61-70 years of age. Dry ARMD was seen in

ORIGINAL RESEARCH ARTICLE

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| <p>Corresponding author Dr. S. Nigwekar*</p> | <p>70% patients, Wet ARMD was seen in 30 % patients. Visual acuity was more affected in Wet ARMD than Dry ARMD. Most common risk factors associated with ARMD were history of Hypertension in 70% patients, followed by Diabetes in 55%, Smoking in 57%, Alcohol consumption in 52% patients. Medical treatment was advised to 70% patients; Optical aids were given to 25% patients. 30% patients were referred to higher center; no surgical management was offered to any patients.</p> <p>Conclusion: ARMD is more commonly seen in patients above 60 years of age and more in females. Dry ARMD seems to be more common than Wet ARMD, however visual disability is more in Wet ARMD.</p> |
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2022, www.medrech.com

INTRODUCTION

Age-related macular degeneration (ARMD) is the leading cause of irreversible blindness apart from cataract and glaucoma in elderly population of mostly after 5th decade. It accounts for 8.7% of all blindness worldwide. It is the most common cause of blindness in developed countries [1]

World Health Organization has included ARMD in its action plan, to address avoidable blindness in VISION 2020 program. [2] The disease adversely affects quality of life and activities of daily living, causing many affected individuals to lose their independence in their retirement life.

Age-related macular disorder is a degenerative disorder affecting macula, characterized by presence of drusens and RPE changes. Conventionally it is classified in to two types mainly Dry (non-exudative, non-neovascular) form and Wet form (exudative, neovascular). Dry ARMD is more common and presents as Geographical atrophy (GA) in its advanced stage. Wet form which is relatively less common but is associated with rapid loss in vision. Choroidal neovascularization (CNV) and Pigment epithelial detachment (PED) are its main consequences which leads to irreversible blindness due to fibrotic macular puckering [3] Risk factors associated with ARMD are Age, gender, Smoking, Hypertension, Diabetes mellitus, Atherosclerosis, obesity, Family history, Dietary habits [4, -5]

The prevalence of ARMD varies from 1.2% to 29.3%. [6] From various studies, it is well established that ARMD is frequent in colored races and the prevalence varies from 1.1% in South India [7] to 17.4% in Africa. [8] The prevalence rate was found to be 4.7% in a study done in North India. [9-10]

AIMS/OBJECTIVES

To Study Clinical profile, Risk factors and Management protocols in patients of Age Related Macular Degeneration at Rural Tertiary Care Hospital.

MATERIALS AND METHODS

In this hospital based, observational, descriptive cross-sectional study, after approval from the ethics committee and written informed consent from all patients, we studied 50 Patients who were diagnosed ARMD in Ophthalmology from DEC 2020 to NOV 2022 as per inclusion exclusion criteria.

Data was collected from all the selected patients using a structured proforma meeting the objectives of the study. Patient's personal history, medical history, family history, alcohol consumption, smoking was collected. Systemic illness history like Diabetes mellitus, hypertension, was noted. Dilated Fundoscopic Examination was done using Direct ophthalmoscopy, 90D lens, slit lamp biomicroscopy, OCT was done of this patients to confirm the clinical diagnosis. Hypermetropia assessment was done using retinoscopy and Auto refractometer findings.

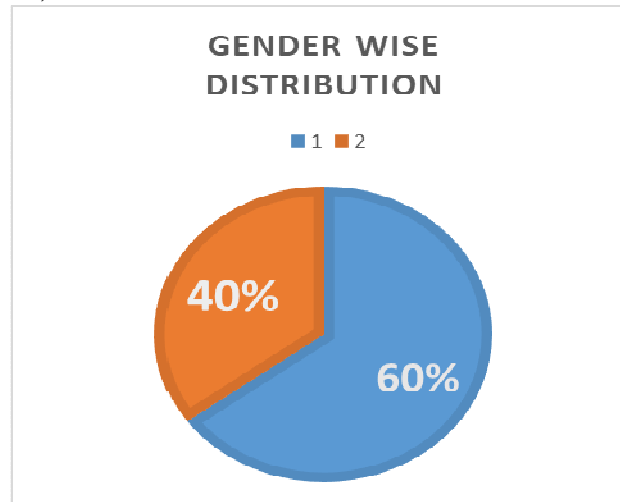
Amsler's grid test findings and Photo's stress test findings were recorded.

Management protocols offered were 1) Medical management like Antioxidants, Anti VEGF medications, 2) Optical management like Spectacles, Low vision Aids, 3) Surgical management or Reference to higher center.

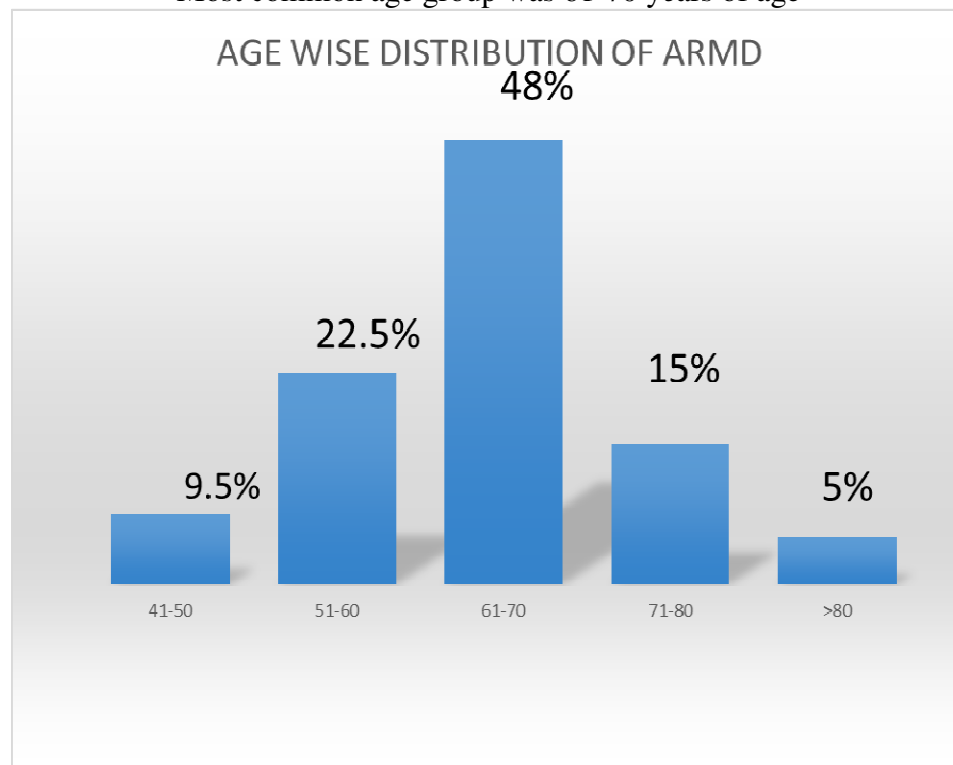
All patients of ARMD Attending Rural Tertiary Care hospital and Patients willing to participate in the study were included. Patients below 40 years of age and patients having optical media opacities, Myopia, Uveitis, Glaucoma, Cataract, Vitreo retinal diseases were excluded.

RESULTS

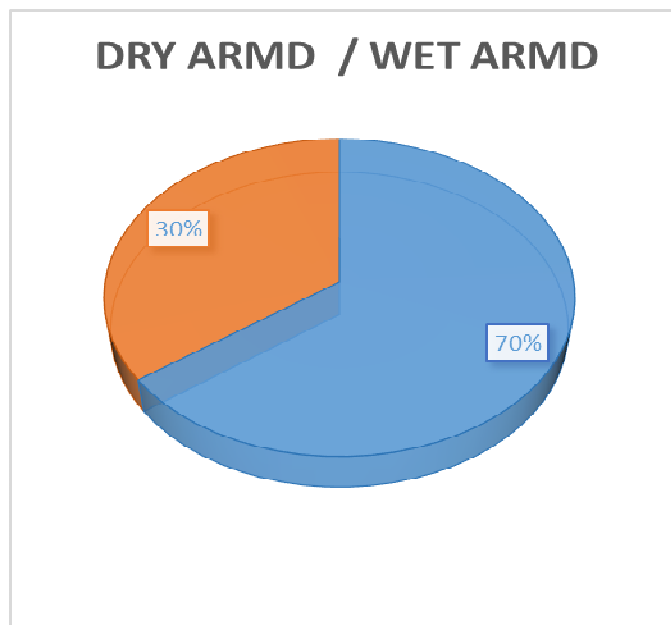
Among the 50 study patients, 60% were Females.



Most common age group was 61-70 years of age



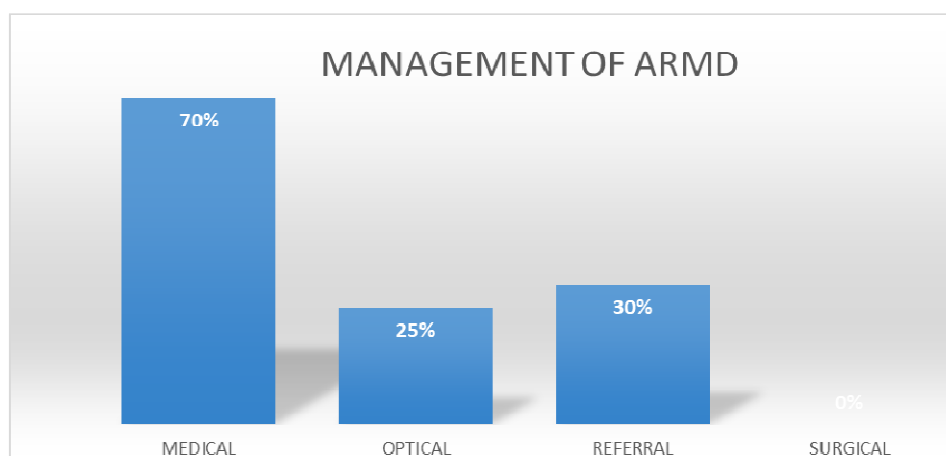
Dry ARMD was seen in 70% patients



Most common risk factors associated with ARMD, in study patients, were history of Hypertension in 70% patients, Diabetes in 55%, Smoking in 57%, Alcohol consumption in 52% patients.

| RISK FACTORS | NO OF PATIENTS | PERCENTAGE |
|---------------------|----------------|------------|
| HYPERTENSION | 35 | 70% |
| DIABETES MELLITUS | 27 | 55% |
| SMOKING | 29 | 57% |
| ALCOHOL CONSUMPTION | 26 | 52% |
| ATHEROSCLEROSIS | 23 | 45% |
| HYPERMETROPIA | 30 | 60% |

Management protocols followed were medical treatment given to 70% patients, Optical aids were given to 25% patients, while 30% patients were referred to higher center, no surgical management was offered to patients.



DISCUSSION

ARMD commonly affects the people in developed countries. However, it is now increasing in developing countries like India and that too in rural area. So to find out clinical profile and its distribution in rural area, we conducted this study. We studied 50 OPD patients, who were clinically diagnosed as ARMD.

Among this 30 were females, so more preponderance was seen in females. Though our sample size is small, this study results are similar to study done by **Pokharel et al** in Nepal [6] and in **Blue Mountain Eye Study**. [7] In both, prevalence of ARMD in females were higher.

According to a study done in Maharashtra by **Singare et al.**, increasing age was found to be a risk factor which was 11.15% above 70 years of age. [8] However in our study most common age group was 61-70 years and 48% patient were affected in this age group. **National Eye Institute (NEI), Maryland, USA**, the prevalence of ARMD was 2.1% in age group 40-49 years, whereas, it increased significantly to 35% in the subjects over 80 years of age. [9] Thus distribution of ARMD patients shows wide age range. This may relate to UV ray's exposure and its effect on ARMD patients.

In this study we have noted History of Hypertension Seen in 70% patients and history of atherosclerosis in 45% patients. **Hyman L et al** suggested an increased risk of ARMD in subjects with hypertension especially those taking antihypertensive treatment. [10]

In the **Nurse's Health Study** ARMD risk increases with pack years of smoking showing a dose dependent relationship [11]. In our study 57% patients had positive history of smoking. Whereas, a study done by **Krishnaiah et al.** found that smoking was not found as a statistically significant risk factor in occurrence of ARMD. [12]

In **Beaver Dam Eye Study** people who consumed beer in the past year

showed increased risk for RPE degeneration.[13]The **Blue Mountain Eye Study** showed an increased risk of AMD in current alcohol intakers.[14] our study is consistent with this findings and we found 52 % patients consuming alcohol.

In our study, along with other risk factors history of diabetes mellitus was seen in 55 % patients. Diabetic patients have increased occurrence of early AMD in a cross-sectional study of a **Korean cohort** of 3008 adults. [15] An inverse relationship was observed in the **Beaver Dam Eye Study**, where diabetes was found to be a protective factor for incident reticular drusen based on a 15-year cumulative incidence. A meta-analysis done by **Xue chen et al.** stated that diabetes is a potential risk factor for AMD, especially for its late form. [16]

History of hypermetropia was seen in 60% patients. **The Blue Mountains Eye Study** suggests some association of hypermetropia between early ARMD, but not with late ARMD. [17]

Jayashree MP et al. stated that Dry AMD was seen in 75.84% patients, whereas Wet AMD was seen in 24.16% patients. In our study Dry ARMD was seen in 70% patients, Wet ARMD was seen in 30 % patients. We also observed more Visual impairment in Wet ARMD than Dry ARMD. [18]

Management protocols followed were medical treatment given to 70% patients. Medical management were given in form of anti VEGF, anti-oxidants. **The Age-Related Eye Disease Study (AREDS)** documented that antioxidant and zinc supplementation decreases the risk of ARMD progression and vision loss. [19]

Here we offered Optical aids to 25% patients. **Sarika gopalakrishnan et al** has stated that use of low vision devices is very helpful in patients whom there is less role of medical and surgical treatment. [20] whereas, 32 % patients were referred to higher center.

CONCLUSION

ARMD is more commonly seen in patients above 60 years of age and more in females. Dry ARMD seems to be more common than Wet ARMD, however visual disability is more in Wet ARMD.

LIMITATIONS: Small sample size, Study design

CONFLICTS OF INTEREST: NIL

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