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Original Research Paper

Ophthalomology

A HOSPITAL BASED STUDY OF GENDER AND RISK OF AGE RELATED MACULAR DEGENERATION

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ABSTRACT The present study was aimed to study the gender and risk of age related macular degeneration. Age-related macular degeneration(AMD) is one of the main socioeconomical health issues worldwide. This is prospective study include all patients of age related macular degeneration above 50 years of age presenting in the Department of Ophthalmology at Dr.RPGMC Tanda. Total 86 patients were examined. There were 41(47.67%) males patients while 45(52.33%) patients were females. Finding indicated that gender distribution of ARMD patients was almost equal. However, exudative ARMD was seen more in males.

KEYWORDS : Gender, Age related Macular Degeneration

INTRODUCTION

Age related macular degeneration (ARMD) represents a spectrum of gradual ageing resulting in degenerative changes in the human macula. It is a major cause of blindness and severe visual loss in older people in developed countries[1]. In India, the prevalence of ARMD ranges between 1.4% to 1.8% in different epidemiological studies. It results in progressive and irreversible loss of central vision affecting the macula of the eye and involve the retinal pigment epithelium (RPE), Bruch`s membrane (BM) and choriocapillaries[2].

Macular degenerative changes have typically been classified into two clinical forms, dry or wet, both of which can lead to visual loss. In the dry form visual loss is usually gradual. Ophthalmoscopy reveals yellow subretinal deposits called drusen, or retinal pigment epithelial irregularities, including hyperpigmentation or hypopigmentary changes. These drusenoid RPE detachments often progress to geographic atrophy and less frequently to neovascular ARMD. Geographic atrophy involving the centre of the macula leads to visual loss. Each of these signs can be further subdivided according to the number and size of the lesions.[3]

In the wet (exudative) form, vision loss can occur suddenly, when a choroidal neovascular membrane leaks fluid or blood into the sub pigment epithelial or sub retinal space. According to international classification and grading system[4], early age related maculopathy (ARM) is defined as the presence of drusen and RPE irregularities, and the terms late ARM and AMD are limited to the occurrence of geographic atrophy and neovascular disease.[3]

Prevalence, incidence, and progression of all forms ofARMD rise steeply with increasing age. This is evident in the Framingham Eye Study,where a 17 fold increased risk of ARMD was noticed in the oldest patient as compared to the youngest patient. ARMD is associated with elevated level of white blood cells, fibrinogen, low-density lipoproteins, cholesterol, homocystein and C-reactive protein.[5,6,7.]

Pathogenesis of the ARMD is that lipids are deposited in Bruch's membrane possibly from failure of the retinal pigment epithelium to process cellular debris. These deposits are known as basal linear and basal laminar deposits. Only later in the disease process are drusen visible. Drusen contain lipid, amyloid, complement factors and additional cellular components. The appearance of drusen is preceded by thickening of Bruch's membrane, degeneration of elastin and collagen with in Bruch's membrane with calcification of Bruch's membrane with increased level of advanced glycation end products and accumulation of lipids and exogenous proteins. These changes lead to hydrophobic barrier to impede the passage of fluid and nutrients between the choroid and outer retina resulting in relative ischemia[8]

Treatment strategies for ARMD includes various modalities like dietary supplementation of anti-oxidants, laser therapy (thermal photocoagulation, photodynamic therapy and surgery), anti-vascular endothelial growth factor (VEGF) and combination therapy (laser along with anti-VEGF treatment) are the current treatment modalities available in ARMD. [2]With increase in life expectancy, ARMD will become a public health concern in our country in near future[1].

2. Objectives

To study the gender and risk of age related macular degeneration.

3. Methods

Place of Study: Department of Ophthamlology, Dr. RPGMC, Tanda.

Study Population: All patients of age related macular degeneration above 50 years of age presenting in the Department of Ophthalmology at Dr.RPGMC Tanda.

Study Design: Prospective study.

Study Period: One year.

Inclusion Criteria

- All the patients of age related macular degeneration of age above 50 years presenting in Department of Ophthalmology, Dr. RPGMC Tanda.

Exclusion Criteria

- Patients with predominantly other types of retinopathies.
- Patients who refuse to give consent.
- Patients with dense corneal and lenticular opacities.

Study Procedure

All the patients of age-related degeneration attending the Out Patient Department of Ophthalmology at Dr. RPGMC Kangra at Tanda whether symptomatic (i.e. complaining of diminished vision, scotoma,micropsia or macropsia) or asymptomatic (i.e. with ophthalmoscopic features suggestive of ARMD) were included in the study. Patients particulars like name, age, sex and address was recorded. A detailed ocular history from all the patients was recorded.

Family history along with personal history of smoking was taken. They were enquired about the number of packs/years he/she had been smoking.

Packs/years were calculated by multiplying the number of packs with years of smoking. The number of bidis taken by the patient per day were converted to cigarettes as four bidis are equal to one cigarette. One pack of cigarette is equal to twenty cigarettes. In India a packet has 10 cigarettes rather than 20 so the number of packs were divided by two.[9]

Social history, in which the occupation of the patient and educational status was noted. Serum CRP level of all patients was recorded. Any medical history, diabetes and

hypertension was also recorded.

Complete systemic examination of the patients was done i.e. pulse rate, blood pressure, respiratory rate and cardiovascular system examination.

Detailed local examination of both the eyes was done, which included the following:-

- Visual acuity using Snellen's chart.
- Retinoscopy using Self-illuminated retinoscope was done after full dilatation of pupil using Tropicamide 1% eye drops.
- Detailed examination of anterior segment with slit lamp was performed.
- Amsler grid chart was used to detect micropsia, macropsia and metamorphosia.Type-1 Amsler grid chart was used to evaluate 10^0 of visual field surrounding fixation.Type-1 chart comprised of 10 cm square containing 400 small squares each of size 5 mm which when viewed at one-third of meter subtends an angle of 1^0.
- Direct ophthalmoscopy with 90D and Indirect ophthalmoscopy was done after full dilatation of pupil with Tropicamide 1% eye drops.
- Intraocular pressure was recorded.

Following criteria were used to define ARMD and Drusen size:
Small Drusen: Drusen which were less than 63um.
Medium: Drusen which were of the size of 63um to125um.
Large: Drusen which were 125um in size or more i.e. the width of a ratinal vein as it crosses the optic nerve head.[10]

4. RESULTS

The present study was aimed to study risk factors for age related macular degeneration. All patients of age related macular degeneration above 50 years of age presenting in the Department of Ophthalmology Dr. RPGMC Tanda during the period of one year were included in the study. Total 86 patients were examined.

Males(n=41) and females(n=45) were almost equal in number. Most of the females and males were in early ARMD. Distribution of gender among early, intermediate and exudative ARMD is shown in table. There is near significant association between gender and ARMD (P=0.052)

Table Distribution of Gender with Early, Intermediate and Exudative ARMD

Gender	ARMD			Total	P Value
	Early	Intermediate	Exudative		
Male	23 (26.74%)	6 (6.98%)	12 (13.95%)	41 (47.67%)	5.889 (0.052)
Female	32 (37.21%)	9 (10.46%)	4 (4.65%)	45 (52.33%)	

5. DISCUSSION

In the present study gender distribution of ARMD patients was almost equal (M-47.67%; F-52.13%). However, exudative ARMD was seen more in males (13.95%) as compared among females (4.65%).

Smith et al in their study of 14,752 patients by pooling findings from three continents found no significant gender difference in the prevalence of neovascular ARMD or geographic atrophy[11]. Owen et al in their study concluded that percentage prevalence of ARMD were similar in males and females[12]. National Health and Nutrition Examination Survey(NHANES-III)found that men, regardless of the race and age had a lower incidence of ARMD than women[13]. Munoz et al in their study of population- based sample of Hispanic individuals aged 50 years and older observed that pigmentary abnormalities were more likely to occur in men than women[14].

The present study correlates with the previous studies[11,12]. Also ,prevalence of Intermediate and Exudative ARMD in males (21%) was more than females (15%). This correlates with the above study given by Munoz et al[14].

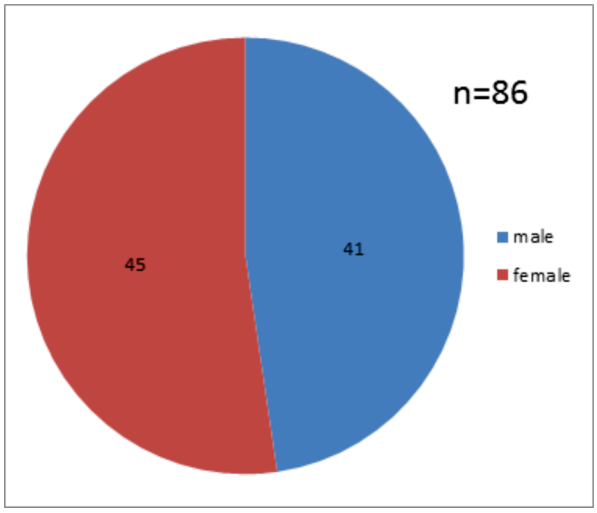

Fig. Distribution of ARMD among Males and Females

6. CONCLUSIONS

This study shows that prevalence of ARMD was almost equal in males and females. However exudative ARMD was more in males.

REFERENCES

1. Qureshi T, Nazir M, Abdullah N, Fazili A, Maqbool R, Ramazan R, Profile of age related macular degeneration in a Kashmiri population-a hospital based study in tertiary care hospital in Kashmir, India. Global J Med Public Health. 2013;2:1-7.
2. Katta S, Kaur I, Chakrabati S. The molecular genetic nasis of age-related macular degeneration: an overview. J Genetics. 2009;88:425-6.
3. Seddon JM, Chen CA. Epidemiology of age-related macular degeneration. In; Ryan JS, editor. Retina. 4th ed. China: Elsevier Mosby;2006.p.1018-24.
4. Bird AC , Bressler NM, Bressler Sb, Chisholm IH, Coscas G, Davis MD, et al. An international classification and grading system for age-related maculopathy and age-related macular degeneration. Surv Ophthalmol.1995;39:367-74.
5. Shanker A, Wang JJ, Rochtchina E, Yu MC, Kefford R,Mitchell P. Association between circulating white blood cell count and cancer mortality: a population-based cohort study. Arch Intern Med.2006;166:188-94.
6. Smith W, Mitchell P, Stephen R, Wang J, Plasma fibrinogen levels, other cardiovascular risk factors, and age related maculopathy. Arch Ophthalmol.1998;116:583-7.
7. Seddon JM, Gensler G,Milton RC, Klein MI,Rfai N, Association between C-reactive protrin and age-related macular degeneration. Jamma.2004; 291:701-10.
8. Nunes R,P, Rosenfeld PJ, Filho CAG, Yehoshua Z, Martidis A, Tennant MTS. Age-related macular degeneration. In:Yanoff M, Duker JS, editors. Ophthalmology. 4th ed. China: Elsevier Saunders;2014:p.580-1.
9. Sharma SK, Chronic Obstructive Pulmonary Disease. In Munjal YP, Sharma SK, Agarwal AK, Gupta P,Kamath SA, Nadkar MY, editors. API Text Book of Medicine. 10th ed. India: Jaypee Publication;2015.p,2328-9.
10. Bressler SB, Bressler NM, Sarks SH, Sharks JP. Age-related macular degeneration: Non neovascular early AMD, Intermediate AMD, and geographic atrophy. In:Ryan SJ, editor. Retina. 4th ed. China: Elsevier Mosby;2006.p.1052-60.
11. Smith W,Assink J,Klein R, Mitchel P, Klaver C, Hofman A, et al. Risk Factors for age-related macular degeneration. Am Acad Ophthalmol.2001;108:697-9.
12. Owen C, Fletcher A, Donoghue M, Rudnicka A, Burden of visual loss caused by age-related macular degeneration. Br J Ophthalmol.2003;87:312-7.
13. Klein R, Rowland MI, Harris MI. Racial differences in age-related maculopathy. Third national health and nutrition examinationsurvey. Ophthalmol.1995;102:371-81.
14. Munoz B, Klein R, Rodriguez J, Snyder R, West S, Prevalence of age-related macular degeneration in a population based sample of Hispanic people in Arizona.Arch Ophthalmol.2005;123:1575-80.