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Original Research Paper

Ophthalomology

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

Dr Bhup Singh* Ophthalmologist, Dr.Rajendra Prasad Government Medical college Himachal Pradesh. *Corresponding Author

Dr Umang Thakur Ophthalmologist ZH MANDI Himachal Pradesh

ABSTRACT The present study was aimed to study of occupation 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 64(74.42%) patients who were agriculturist while 7(8.14%) were govt/private employee and 15(17.44%) were retired persons.

KEYWORDS : Occupation, Age related Macular Degeneration

1. 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. 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. Larger drusen may become confluent and evolve into drusenoid retinal pigment epithelial detachments (PEDs). 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]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 of ARMD rise steeply with increasing age. There was a 17-fold increased risk of ARMD comparing the oldest to the youngest.[5]

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 that elevate the RPE reveal that they 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.[6]

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.[7]

Social history, in which the occupation of the patient and educational status was noted. Any medical history, diabetes and hypertension was recorded.

Complete systemic examination of the patients was done i.e. pulse rate, blood pressure, respiratory rate and cardio-vascular 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 retinal vein as it crosses the optic nerve head.[8]

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 ye

5. DISCUSSION

The aim of the present study was to ascertain risk factors for age related macular degeneration. All patients of ARMD above 50 years of age presenting in the Department of Ophthalmology Dr. RPGMC Tanda for one year were included in the study. In the present study which included a total of 86 patients , 45(52.13%) were females and 41(47.67%) were males, with age ranging from 50 to 90 years were included. Males were 47.67% and 52.33% were females most of the patients were in early ARMD (63.95%), followed by exudative (18.60%) and intermediate ARMD (17.44%) results of this study shows no significant association between serum CRP level and ARMD. As many as 91.86% patients did not have elevated serum CRP levels. 8.14% had elevated serum CRP levels .

Dasch et al. in their study found no statistically significant association between ARMD and serum CRP levels[11]. Klein et al in their study found that there was no association with prevalence of early ARMD or any of its lesions i.e. large soft drusen or pigmentary abnormalities[12]. Schaumberg et al found that women with high CRP levels had a more than three-fold higher incidence of ARMD[13]. Hence, contrary to reports published by Schaumberg et al our study did not find any association between elevated CRP and ARMD as found by other studies.

6. CONCLUSIONS

This study confirms that there is no significants associations between serum CRP level and ARMD.

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, others cardiovascular risk factors, and age related msculopathy. Arch Ophthalmol. 1998;116:183-7.
7. Seddon JM, Gensler G, Milton ROC, Klein MI, Rifai N. Association between C-Reactive protein and age –related macular degeneration . Jama. 2004;291:704-10.
8. Nunes RP, Rosenfeld PJ, Filho CAG, Yehoshua Z, Martidis A, Tennant MTS. Age-related macular degeneration . In : Yanoff M, Duker JOS, 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 Publications; 2015.p.2328-9.
10. Bressler SB, Bressler MN, Sarks SH, Sarks 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. Dasch B. Fuchs A, Behrens T, Meister A, Wellmann J , Fobker M et al . Inflammatory markers in age-related maculopathy . Arch Ophthalmol . 2005;123:1501-6.
12. Klein R, Klein BEK, Knudtson MD, Wong TY, Shankar A, Tsai MY. Systemic markers of inflammation, endothelial dysfunction and age-related maculopathy. Am J Ophthalmol. 2005;140:35-44.
13. Schaumberg DA, Chriten W, Buring JE, Glynn R, Rifai N, Ridker P. High Sensitivity C-Reactive Protein, other markers of inflammation and the incidence of mucular degeneration in women. Arch ophthalmol. 2007;125:300-5.