Research Article

Study of psycho-social impairment in patients presenting with age related macular degeneration in a tertiary eye care hospital

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ABSTRACT

Background: Age Related Macular Degeneration (ARMD) is an eye condition affecting old age people causing severe vision loss. This study was carried out to assess the psycho-social impairment in the ARMD patients and compare it with the normal eye patients.
Methods: A Two study groups were made: 1. ARMD patients. 2. Control group patients. Patients of both the groups were made to fill "The validated Gujarati version of: General Health Quality Questionnaire-28 (GHQ 28)". Self-scoring was done according to 0-1-2-3 lower to higher disability respectively.
Results: Prevalence GHQ Mean score of ARMD patients was 34.27 and that of normal eye patients was 24.66. 80.85% of ARMD patients and 26.73% of normal eye patients were psychosocially impaired.
Conclusion: ARMD patients are psychosocially more impaired as compared to control group patients (p value <0.001, highly significant).

Keywords: ARMD (Age Related Macular Degeneration), Psycho-social impairment, GHQ-28 (General Health Questionnaire)

INTRODUCTION

The macular region is a specialized area of the central retina with a diameter of 5.5 mm. It can be divided into several regions: fovea, foveola, parafoveal area, perifoveal region. Fovea is the central rod free area, containing millions of cone cells that provide a sharp, detailed central vision. The retina transmits signals to the brain and an image is thus formed. Thus if macula is damaged, image is formed but fine points are lost.

Age Related Macular Degeneration (ARMD) is a common eye condition in old age people (50 years and older). It is a medical condition which would result in the loss of vision in the center of the visual field. Macular degeneration gradually destroys the macula. Vision loss makes face recognition, car driving, reading or performing minute works difficult, leading to heavy economical & financial loss as the person might lose his source of earning.

ARMD affects approximately 10% of persons aged 65-75 years & 30% of those aged 75 & older[1] ARMD is a progressive and irreversible disease.

It is divided into two main forms: dry ARMD and wet ARMD.

Dry ARMD is characterized by aggregation of hyaline material between Bruch's membrane and retinal pigment

epithelium, known as drusens. The patient is usually asymptomatic but this can progress to the wet form of ARMD which is also known as neovascular or exudative ARMD.

Wet ARMD is characterized by abnormal blood vessel growth in the chorio-capillaries (choroidal neovascularisation), through Bruch's membrane ultimately leading to blood and protein leakage below the macula.

The last stage in the evolution of wet ARMD is the formation of a fibro vascular complex called the disciform scar.

ARMD and vision loss can profoundly affect patient's life. Due to gradual vision loss, relations with the family members and friends get changed causing a severe impact on the life.

Loss of vision and hampering of activities cause loss of self-esteem leading to isolation, anxiety, depression and despair.

In India also the prevalence of ARMD is increasing and thus it is necessary to know the areas of impairment in such patients.[2]

Thus this study was carried out to assess the psycho social impairment of the ARMD patients with the help of GHQ-28 Questionnaire.

Objective

To assess the psychosocial impairment of patients having age related macular degeneration and to compare it with the control group patients

METHODS

A prospective observational cross-sectional study of 94 patients presenting to the retina clinic of Shri C. H. Nagri eye hospital, Ellisbridge, Ahmedabad and suffering from wet ARMD was undertaken from October 2012 to August 2013.

We had a control group of 101 patients who attended the same hospital for refractive work up.

Inclusion criteria

Study group: Patients having wet ARMD in one or both eyes and age greater than 40 years were selected.

Control group: Patients suffering from refractive error and having a visual acuity more than 6/18 and age greater than 40 years.

Exclusion criteria

Study group: Patients having other ocular diseases along with wet ARMD which could contribute to blindness were excluded from the study.

All the ARMD patients underwent a detailed history taking which also included personal history in the form of educational qualification, occupation, history of smoking, hypertension, diabetes, cardio vascular diseases and any positive family history.

A detailed anterior segment examination was carried out by a slit lamp, fundus examination by 90D slit lamp bio-microscopy, macular evaluation by OCT (Ocular coherent tomography) and FFA (Fundus fluorescein angiography).

All the patients having dry ARMD in the other eye were given an 'AMSLER's GRID' and were taught to use it regularly at home.

Data of personal history including age and education, Visual acuity and Associated Systemic diseases was collected from Control group Patients.

Psychosocial assessment

All the Patients were made to fill "the validated English and Gujarati version of : General Health Questionnaire-28 (GHQ 28)".[3]

The GHQ-28 provides extent of impairments related to somatic symptoms, anxiety and insomnia, social dysfunction, and severe depression.

Self-scoring was done according to 0-1-2-3 lower to higher disability respectively. Mean scores of all the questions and 4 sub-sections along with total GHQ score was calculated and assessed.

All eyes with WET ARMD were treated with 3 intravitreal injections of bevacizumab given one month apart.

Statistical analysis

Statistical analysis was carried out using the licensed version of Statistical Software SPSS.

Mann Whitney test was carried out to find out the P value and significance of the results obtained.

Comparison of GHQ scores between control group patients and the study group patients was carried out and its significance was obtained using the software.

Annexure I: General Heath Quality Questionnaire (GHQ-28)

Please read this carefully:

We would like to know if you had any medical complaints, and how your health has been in general, over the past few weeks. Please answer ALL the questions on the following pages simply by underlining the answer which you think most nearly applies to you. Remember that we want to know about present and recent complaints, not those that you had in the past.

It is important that you try to answer ALL the questions.

Thank you very much for your co-operation.

Have you recently:

1	Been feeling perfectly well and in good health?	Better than usual	Same as usual	Worse than usual	Much more than usual
2	Been feeling in need of a good tonic?	Not at all	No more than usual	Rather more than usual	Much more than usual
3	Been feeling run down and out of sorts?	Not at all	No more than usual	Rather more than usual	Much more than usual
4	Felt that you are ill?	Not at all	No more than usual	Rather more than usual	Much more than usual
5	Being getting any pains in your head?	Not at all	No more than usual	Rather more than usual	Much more than usual
6	Been getting a feeling of tightness or pressure in your head?	Not at all	No more than usual	Rather more than usual	Much more than usual
7	Been having hot or cold spells?	Not at all	No more than usual	Rather more than usual	Much more than usual
8	Lost much sleep over worry?	Not at all	No more than usual	Rather more than usual	Much more than usual
9	Had difficulty in staying asleep once you are off?	Not at all	No more than usual	Rather more than usual	Much more than usual
10	Felt constantly under strain?	Not at all	No more than usual	Rather more than usual	Much more than usual
11	Been getting edgy and bad-tempered?	Not at all	No more than usual	Rather more than usual	Much more than usual
12	Been getting scared or panicky for no good reason?	Not at all	No more than usual	Rather more than usual	Much more than usual
13	Found getting everything on top of you?	Not at all	No more than usual	Rather more than usual	Much more than usual
14	Been feeling nervous and strung-up all the time?	Not at all	No more than usual	Rather more than usual	Much more than usual
15	Been managing to keep your-self busy and occupied?	More so than usual	Same as usual	Rather more than usual	Much less than usual
16	Been taking longer over the things that you do?	Quicker than usual	Same as usual	longer than usual	Much longer than usual
17	Felt on the whole you were doing things well?	Better than usual	About the same	less well than usual	Much less than usual
18	Been satisfied with the way you've carried out your task?	More satisfied	About the same	less satisfied than usual	Much less satisfied than usual
19	Felt that you are playing a useful part in things?	More so than usual	Same as usual	Rather less than usual	Much less than usual
20	Felt capable of making decisions about the things?	More so than usual	Same as usual	Rather less than usual	Much less than usual

21	Been able to enjoy your normal day-to-day activities?	More so than usual	Same as usual	Rather less than usual	Much less than usual
22	Been thinking of yourself as worthless person?	Not at all	No more than usual	Rather more than usual	Much more than usual
23	Felt that life is entirely hopeless?	Not at all	No more than usual	Rather more than usual	Much more than usual
24	Felt that life isn't worth living?	Not at all	No more than usual	Rather more than usual	Much more than usual
25	Thought of the possibility that you might make away with yourself?	Definitely not	I don't think so	Has crossed my mind	Definitely have
26	Found at times you couldn't do anything because your nerves were too bad?	Not at all	No more than usual	Rather more than usual	Much more than usual
27	Found yourself wishing you were dead and away from it all?	Not at all	No more than usual	Rather more than usual	Much more than usual
28	Found that the idea of taking your own life kept coming into your mind?	Definitely not	I don't think so	Has crossed my mind	Definitely has

RESULTS

Total data of 94 Age Related Macular Degeneration patients coming to Retina clinic of C. H. Nagri eye hospital was collected. Out of 94 patients 59 were males and 35 were females. Data of 101 control group patients coming to C. H. Nagri eye hospital for routine check-up was collected. Out of 101 patients 65 were males and 36 females.

Following are the results obtained for the study group of patients:

Table 1: Age distribution.

Sr. No.	Age group	No. of patients	Percentage
1	41-50	8	8.51
2	51-60	11	11.70
3	61-70	40	42.55
4	>70	35	37.23

Table 2: Level of education.

Sr. No.	Type	No. of patients	Percentage
1	Illiterate	15	15.96
2	Primary (passed 7th grade)	35	37.23
3	Secondary (passed 10th grade)	16	17.02
4	Higher secondary (passed 12th grade)	10	10.64
5	Graduate	11	11.70
6	Post graduate	7	7.45

Table 3: Occupation.

Sr. No.	Occupation type	No. of patients	Percentage
1	Retired	15	15.96
2	House wife	29	30.85
3	Workers	34	36.17
4	White collar jobs	16	17.01

Table 4: Chief complains.

Sr. No.	Complains	No. of Patients	Percentage
1	Routine check up	29	30.85
2	Dimness of vision for distance	56	59.57
3	Central scotoma	9	9.57

Table 5: History of associated diseases*.

Sr. No.	Disease	Patients having the diseases	Total No. of patients
1	Hypertension	47	94
2	Diabetes	33	94
3	Cardio vascular diseases	21	94

*Presence of Systemic Diseases doesn't affect the GHQ Scoring. (p value >0.5) Thus psycho social impairment in ARMD is not affected by presence of systemic diseases.

Personal history related to eye

64 patients (68%) had glasses for correction of their vision and in surgical history we found that 44 patients (47%) had cataract operation in one or both the eyes.

We also obtained that 15% of patients had smoking addiction and 10 % patients had family history of ARMD.

5 patients had history of glaucoma and were on medical treatment. Their Intra Ocular Pressure was under control and they didn't have any disc/field changes secondary to glaucoma.

GHQ mean scores

Table 6: GHQ mean scores.

Sr. No.	Type of patients	Somatic symptoms	Anxiety and insomnia	Social dysfunction	Severe depression	Ghq-28 scale scoring (>25 significant)
1	ARMD patients	8.46	8.95	9.63	7.23	34.27
2	Normal patients	6.36	6.90	7.51	3.89	24.66

On detailed analysis of mean score of all the questions it was found that following questions had higher mean score as well as more no. of patients were having positive scoring in this questions as compared to other questions:

Table 7: Detailed analysis of GHQ questionnaire.

Question No.	Question	Mean score	Impaired patients
GHQ-8	Lost much sleep over worry?	1.48	47 (50%)
GHQ-9	Had difficulty in staying asleep once you are off?	1.72	62 (65.96%)
GHQ-11	Been getting edgy and bad- tempered?	1.39	44 (46.81%)
GHQ-16	Been taking longer over the things you do?	1.83	76 (80.85 %)
GHQ-17	Felt on the whole you were doing things well?	1.45	38 (40.4 %)

Table 8: Comparison of GHQ scoring between study and control groups.

Sr. No.	Type of patients	Total no. of patients	No. of psychosocially impaired patients
1	ARMD patients	94	76 (80.85 %)
2	Normal patients	101	27 (26.73%)

On the application of Mann Whitney statistical analysis test it was found that there was significance in following comparison:

ARMD patients were psychosocially more impaired as compared to normal patients. (P value <0.001, highly significant).

Table 9: Test statistics 1.

	GHQ total
Mann-Whitney U	2286.500
Z	-6.253
Asymp. Sig. (2-tailed)	.000

Table 10: Test statistics 2.

	No. of patients	Mean rank	Sum of ranks
Control group	101	73.64	7437.50
ARMD patients	94	124.18	11672.50
Total	195		

We also applied the same test for finding the effect of presence of systemic diseases on psycho-social impairment. But the analysis obtained stated non significance (P value >0.5).

DISCUSSION

In our study for the assessment of psycho-social impairment we used the "Validated Gujarati Version of General Health Questionnaire-28".[3-7] From the mean scores we found that patients of ARMD had psycho-social impairment especially in the field of social days-functioning as its mean score was higher. Whereas the Mean GHQ scores of control group of patients were low.

Also total number of impaired patients in control group according to GHQ score (27% of patients) were much less than psychosocially impaired ARMD patients (81% of patients).

On doing statistical analysis we found that there was high significance (P <0.001) and the higher mean ranks obtained showed that ARMD patients were more psycho-socially impaired as compared to control group patients.

On detailed analysis of each question we also found that:

81% patients required much longer time in completing their day to day activities as compared to their past normal life. 66% patients had difficulty in getting normal continuous sleep and 50% patients had problems in getting sleep due to stress. 44 patients (47%) were having impairment related to loss of temperament and 40% patients were not satisfied with their ability to do day to day activities.

In the study by Williams RA et al., they have stated that elderly persons having ARMD have significant emotional distress and profoundly reduced quality of life and need help with key daily activities which shows similar results.[8] In a similar study Hassel JB et al. it is also stated that on assessing psycho-social impact of ARMD through Impairment of Vision Questionnaire, it was found that patients of ARMD have impairment related to not only reading but also of emotional health, mobility, and participation in relevant activities and their referral to low vision care services is necessary.[9] This all studies showed similar results of impairment as found in our study.

Depression is one of the symptom occurring in the ARMD patients. GHQ scale showed the extent of Severe Depression in ARMD patients in our study. Following Studies done by Banerjee A et al. and Jivraj J et al. stated that depression is seen in the ARMD patients and the depression may increase in severity with increase in the impairment of ARMD if treatment of depression is not started promptly.[10,11]

Impairment to the quality of life in ARMD is as much as in other severe diseases like cancer and thus this study makes a proper statement for regular assessing the quality of life of ARMD patients for treating regarding the same.[12]

There is a co-relation in the chief complains and the impairment of quality of life in ARMD patients. Decreased visual acuity, absolute central scotoma and the existence of Exudative AMD influenced the Quality Of Life in AMD patients.[13]

Treatment is necessary to be taken by the patients of ARMD. Study by Ambrecht et al. suggests that with the treatment taken the severity of the disease and thus the psycho-social impairment both can be stopped and decreased.[14]

Systemic diseases i.e. diabetes and hypertension are risk factors of ARMD. This study states that the risk of macular hemorrhage after ranibizumab injection increased 4.8-fold. The systemic condition of subjects was found to be an important risk factor for newly developed or increased macular hemorrhage.[15] But according to our study even-though the presence of systemic diseases increases the severity of disease, its effect on psycho-social impairment is not significant.

In our study we saw that 75% patients were of age 61 years or more. This showed that ARMD is more prevalent in individuals with age >60 years. This is comparable to findings of the study done by Krishnaiah et al., in which prevalence of AMD was significantly higher in those 60 years of age or older. History of prior smoking also showed higher incidence of ARMD.[16]

In our study we found that 70% patients had low level of education (study till 10th grade or less). And 36% patients were having occupation as worker or laborer in different sectors and 30% were house wives. Similar observations were found in this study done by Klein R et al. that low education and workers-laborers had more incidence of early age-related maculopathy compared with a white collar professional (P <0.05).[17]

CONCLUSION

From the assessment of GHQ-28 scale we have found that ARMD patients are more psycho-socially impaired as compared to the normal eye patients (P value <0.001). Maximum impairment is seen in the field of social days-functioning. Patients have more of sleep problems and routine day to day activities get impaired with increase in bad temperament.

Thus ARMD is a severe disease and it is necessary to educate patients and their relatives about the psycho-social impairment occurring due to this disease and about the specific steps to be taken to make the psycho social well-being of the patients better.

All patients with DRY ARMD should be closely followed up to detect the earliest conversion of DRY ARMD into WET stage. So that appropriate early treatment can be initiated, thereby reducing the size of central scotoma and prevent further psycho social impairment.

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