Ophthalmology

Quality of Life and Age-Related Macular Degeneration

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Abstract		Original Research Article

The aim was to measure the life quality of patients with age-related macular degeneration. The survey included patients with age-related macular degeneration, aged 65 years and older. Recruitment of participants was performed from the preoperative consultation at the adult ophthalmology department. Investigation sheets containing socio-demographic, clinical data and the Moroccan version of the NEI VFQ25 quality of life questionnaire; were handed out to each patient. The association of the scores with the visual acuity was studied using the correlation coefficients. A total of 75 patients were enrolled including 56% women and 44% men and an average time of 3 .6 years since diagnosis of age-related macular degeneration with a mean age of of 76.9 ± 6.2 years. Average visual acuity (VA) in the better eye is 6/10 and 2/10 in the worse eye. The mean global VFQ-25 score was 48.7 ± 24.8. The significant public health burden of AMD includes both its negative effects on quality of life and on the economy. AMD causes a marked decrease in quality of life, underestimated by many, including physicians who regularly treat patients with AMD.

Keywords: NEI-VFQ-25, life quality of patients, age-related macular degeneration, visual acuity, correlation coefficients.

INTRODUCTION

Age-related macular degeneration (AMD) is one of the leading causes of visual impairment [1] and low vision in people over 50. It is estimated that in Europe, 20 million people will be affected by 2040, and that 4 million of them will be affected by the most advanced form of the disease [2] Age-related macular degeneration (AMD) affects approximately 1.75 million people in the United States, including 28% of people age 75 or older. Improvements in the general health of older people have been accompanied by an increase in life expectancy and an increase in the prevalence of age-related macular degeneration [3]. Two types degeneration are recognised: dry or atrophic AMD, the most common form, and exudative neovascular AMD. Both forms are characterized by damage to the central retina [4]. This chronic and progressive eye disorder is expected to continue to grow as a major public health problem, with significant clinical, emotional and financial effects on patients due to limited and expensive treatment options and an aging population world [5].

Central vision plays a vital role in people's interaction with the environment, face recognition, and the performance of daily activities [2]. AMD usually affects the latter, which is needed to read, drive, watch television, recognize people, and perform many other activities of daily living [1] although peripheral vision is usually spared enough to allow walking without aid [4]. It causes not only a decrease in central visual acuity, but also difficulties in the central visual field and in contrast sensitivity [3]. Therefore, central vision impairment resulting from AMD can compromise health-related quality of life (HRQOL). People with AMD may find it much more difficult to perform daily tasks than people without AMD, even when the disease is in its early stages [5].

Quality of life considerations are becoming increasingly important in all areas of medicine, but are particularly relevant to the field of ophthalmology, as vision loss can have a profound impact on quality of life [1]. In addition, these patients often fear blindness, loss of independence and lack of effective treatment, which has a very negative impact on their quality of life. Early quality of life studies focused on analyzing the impact

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on the abilities or difficulties that patients have with their visual function, which cannot be obtained through clinical testing [9], using specific instruments, in particular questionnaires [2].

The quality of life of AMD patients can be assessed globally using generic quality of life scales or utility scales specific to eye conditions in general or AMD symptoms in particular. Quality of life scales allow comparisons to be made between patients with AMD and people in the general population or patients with other diseases. Utility scales, on the other hand, measure patient preferences [4].

For example, the best corrected VA is not the only parameter to consider that directly correlates with quality of life, since contrast sensitivity or VA in low light conditions also play an important role [2].

The objective of this study is therefore to assess the quality of life of people with AMD.

MATERIAL AND METHODS

We carried out a descriptive prospective study. The target population consisted of patients with AMD, aged 65 and over. The recruitment of participants was carried out from the hospital consultation to the adult ophthalmology department over a period ranging from January 2022 to December 2022.

Our research took the form of interviews. The collection of information was carried out at the end of the interrogation of the patients and from the data of the medical file. The questionnaires were anonymous and were self- administered to the participants whenever possible, assisted by the coordinator, or administered by interviewers (illiterate participants, people who did not wish to complete it alone). The time required to complete the questionnaires varied from 15 minutes to 25 minutes.

The questionnaire included a set of parameters relating to different aspects of the health-related quality of life of patients with AMD.

The first part of the questionnaire related to the characteristics of the patients and AMD. To know:
- Age, sex, level of education, profession and place of residence (urban or rural).
- Comorbidities: diabetes, high blood pressure, heart disease, obesity.
- Ocular comorbidities: glaucoma, uveitis, retinopathy or others.
- Visual acuity of the right eye and the left eye with and without correction.

The second part included the translated version of the NEI VFQ-25 questionnaire for the assessment of quality of life. The NEI-VFQ-25 is a generic scale consisting of the reduction of the NEI-VFQ-51, with twenty-five questions relating to quality of life in relation to visual function. This scale, which applies to chronic eye diseases, has 12 dimensions:
- General health (1 item)
- General vision (2 items)
- Eye pain (4-19 items)
- Near vision (5-6-7 items)
- Distance vision (8-9-14 items)
- Peripheral vision (10 items)
- Color vision (12 items)
- Driving (15c-16-16a items)
- Social life (11-13 items)
- Physical health in relation to vision (3-21-22-25 items)
- Restriction of activities (17-18 items)
- Dependence in relation to vision (20-23-24 items)

Items are answered on a five or six point Likert scale. The NEI-VFQ 25 scale was used in this work because it is suitable for assessing the quality of life of patients with AMD. Indeed, it is a widely used scale and which includes items related to different factors affecting the quality of life of patients and respecting the specificities of the population studied. We then note that the items take into consideration a major part of the main functional causes of deterioration in the quality of life stated previously in this work: the consequences of low visual acuity (only items 1-3-4-15 and 19 do not refer to it), major impairment of the visual field (whether central or peripheral), impaired contrast vision (item 9) or eye pain (items 4 and 19).

The Hospital Anxiety and Depression Scale (HADS) was designed by Zigmond and Snaith as a screening instrument for affective disorders. It consists of two series of 7 items: one represents the anxiety subscale and the other the depression subscale. Each item is scored from 0 to 3, and the patient is asked how they feel at the present time, including the previous days. The items belonging to the depression scale refer almost exclusively to the anhedonic state (5 of the 7 items reflect an inability to experience pleasure), which is considered the central feature of depressive illness and the best clinical marker. Scores > 10 are considered indicative of morbidity, scores between 8 and 10 are interpreted as borderline, and scores < 8 indicate no morbidity.

RESULTS

Seventy-five patients with AMD participated in the study, with an average age of 76.9 ± 6.2 years (range 68-89) including 56% women and 44% men and an average time of 3.6 years since diagnosis of age-related macular degeneration.

Average visual acuity (VA) in the better eye is 6/10 and 2/10 in the worse eye. The mean global VFQ-25 score was 48.7 ± 24.8, including 39.3 ± 15.3 for general vision and 47.0 ± 15.7 for general health. In the

HADS scale, 26.9% and 25.5% of patients had symptoms of depression and anxiety respectively. Among the highest-scoring domains are color vision and social functioning (both ≥ 65).

The important NEI VFQ-25 quality of vision subscales (general vision, difficulties with distance tasks, difficulties with near tasks) and the vision-specific subscales (dependence, role difficulties, mental health, social function limitations) tended to be negatively correlated with increasing patient age and duration of vision loss, but were positively correlated with improvement in VA. Mean QOL scores for these important vision-specific and quality of vision subscales were significantly worse or similar to mean scores for visually impaired patients, and significantly worse than scores for patients with variable-severity AMD and of a reference population.

In the HADS scale, an average value of 7.6 ± 6.2 points was obtained for the anxiety subscale, and 6.3 ± 5.4 for the depression subscale. In the anxiety subscale, 52.5% of patients achieved normal scores (≤7 points), 18.8% of patients showed borderline and pathological scores in 28.7% of patients (≥11). In the depression subscale 49.7% of patients obtained normal scores (≤7), 20.7% of patients showed borderline scores (8-10), being pathological in 29.6% of patients (≥11).

DISCUSSION

Many studies have attempted to estimate the effect of visual loss on the health and quality of life of patients with different eye diseases [6]. Thus, the NEI VFQ-25 showed a very low score for global outcome and general vision, with patients being vulnerable due to age and other comorbidities, as shown by the general health scale [2]. Our study showed that AMD seemed to have a significant impact on the patient's quality of life, in particular on their general health, general vision, dependency and difficulties in performing their role [1]. In patients with AMD, several previous works have used the NEI VFQ-25 questionnaire to reflect reduced quality of life, with areas related to central vision such as reading, driving and face recognition being particularly compromised [6, 7].

Suzuki *et al.,* reported that driving, near and far vision and mental health were mainly affected in patients with AMD [8].

Cahill *et al.,* studied 70 patients with advanced bilateral neovascular AMD and obtained a score of 31.4 ± 15.8 for the domain of general vision [6].

It is interesting to note that Berdeaux *et al.,* described that the eye with the worse VA also contributes independently to quality of life, so maintaining minimal visual function in the worse eye is relevant [9].

AMD is a chronic, largely incurable eye condition that causes loss of central vision needed to perform tasks such as reading, watching television, driving or recognizing faces. The most common cause of blindness in the western world, the shock of diagnosis, coupled with lack of information and support, is a common experience [10].

The presence of anxiety has been described in a significant percentage of patients with AMD [11, 12]. It has been observed that this anxiety is not linked to the severity of the disease but rather linked to intravitreal injections, Sivaprasad *et al.,* having noted anxiety in 75% of cases the day before the injection, and in 54% of patients from 2 days before the injection in other authors [13].

A few studies have shown that patients with AMD are likely to suffer from depression, social isolation and emotional stress [14, 15]. This is because most of the older people affected by these diseases are retired and usually engage in activities that require good vision [1].

AMD affects the quality of life of older people and studies should focus not only on treatment, but also on preventing the mental problems and limitations imposed by the disease [1].

Rehabilitation, including the provision of low vision (LVA) aids and training, peer support and education, can improve functional and psychological outcomes, but many people miss out on services that can be beneficial to them [10].

CONCLUSION

The finding that the general public significantly underestimates AMD-related QOL is noteworthy [16]. The significant public health burden of AMD includes both its negative effects on quality of life and on the economy. AMD causes a marked decrease in quality of life, underestimated by many, including physicians who regularly treat patients with AMD [17]. A sedentary lifestyle, smoking, and systemic hypertension are all associated with AMD [18]. Finally, maintaining minimal VA in the most affected eye would help maintain the quality of life linked to the vision. This analysis suggests that the most affected eye must be treated if a good quality of life related to long-term vision is to be maintained [9].

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