

Diet, Nutrition and Prevention of Age-related Macular Degeneration

Heber Anandan¹, D Lionel Raj², J Mohamed Ali³, J L Dhanisha³

¹Senior Clinical Scientist, Department of Clinical Research, Dr. Agarwal's Eye Hospital, Tirunelveli, Tamil Nadu, India, ²Medical Director, Department of Cornea and Refractive Surgery, Dr. Agarwal's Eye Hospital, Tirunelveli, Tamil Nadu, India, ³Clinical Research Associate, Department of Clinical Research, Dr. Agarwal's Eye Hospital, Tirunelveli, Tamil Nadu, India, ⁴Research Optometrist, Department of Clinical Research, Dr. Agarwal's Eye Hospital, Tirunelveli, Tamil Nadu, India

Abstract

Introduction: Nutrition and lifestyle plays an important role in prevention and slow progression of age-related macular degeneration (ARMD). Maintaining blood pressure, cholesterol level, not smoking, and exercising can help too.

Aim: To determine the relationship of diet and lifestyle in ARMD patients.

Methods: Retrospectively 21 patients from 50 to 80 years were interviewed on diet and lifestyle using designed questionnaire.

Results: 21 patients were studied, 67% and 28% are having dry and wet ARMD, 5% have both dry and wet ARMD. No supplements were taken by the patients regards ARMD. 86% of patients are nonvegetarian and 14% were taking vegetables in their diet.

Conclusion: Dietary supplements are important to slow the progression of ARMD. Vitamin C, vitamin E, lutein, zeaxanthin, and cupric oxide supplements are warranted.

Key words: Age-related macular degeneration, Awareness, Diet, Nutrition

INTRODUCTION

Age-related macular degeneration (ARMD or AMD) is the leading cause of vision loss and blindness among both developed and developing countries.¹⁻³ In India, the prevalence of early late ARMD (Grades 1 and 2) is similar to that observed in Western populations in the age group of 60-79 years.⁴ Because of people increasingly larger percentage of the general population, vision loss of macular degeneration is a growing problem. Age-related degeneration of the macular, which is the part of the retina responsible for the sharp, central vision needed to read or drive. Macular degeneration can make it difficult or impossible to read or recognize faces, although peripheral vision remains to allow other activities of daily life. ARMD is diagnosed as either dry (non-neovascular) ARMD or wet

(neovascular) ARMD.⁵ Wet (neovascular) ARMD refers to the growth of new blood vessels in an area, such as macula, where they are not supposed to be. Dry (non-neovascular) ARMD is an early stage of disease and may result from the aging and thinning of macular tissues, depositing of pigments of pigment in the macula or a combination of the two processes. Dry (non-neovascular) ARMD is the common form and is estimated to present in 15% of eyes by 80 years of age.⁶⁻⁹ Nutrition plays a key role in human health with no exception to the eye. The prevention remains the best approach for addressing this public health issue and dietary modifications may provide one of the most cost-effective strategies.¹⁰⁻¹² The role of glucose and the nutrients in age-related diseases including ARMD is now receiving considerable attention because of the potentially adverse effects of sustained high concentrations of glucose and age-related inefficiencies or improper metabolism, including the formation of advanced glycation end products and their sequelae.^{13,14}

Aim

The purpose of this paper was to study the relation between the nutrition and ARMD by interviewing the history of diets.

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Corresponding Author: Heber Anandan, Dr. Agarwal's Healthcare Limited, No. 10. South By-pass Road, Vannarpetai, Tirunelveli - 627 003, Tamil Nadu, India. Phone: +91-9894067910. E-mail: clinicalresearch@dragarwal.com

METHODS

A retrospective cohort study was conducted in a Tertiary Ophthalmic Hospital in Tirunelveli. Ethics Committee Approval and patient consent was obtained. Patients interviewed for this study are already diagnosed with ARMD. 21 patients are interviewed for the study in the age group of 50-80 years. A structured questionnaire used for this study was designed and validated by concern Institutional Ophthalmologist. A detailed history of the patient was recorded including details of sex, age, and other complaints. The questionnaire was developed in English, the interviewer translates the questionnaire to the patients if necessary.

RESULTS

A total of 21 patients involved in the study from 50 to 80 years of age, the majority of the patients are from 70 to 75 years of age group (29%) and followed by two age group 55-60 years and 60-65 years age group (19%), respectively. Association with gender variation, 52% of female and 48% of male patients are studied (Table 1).

The patients are classified, 67% of patients are dry (non-neovascular) ARMD, 28% of patients are wet (neovascular) ARMD and 5% of patients had both dry and wet ARMD. Comorbidity with ARMD, 43% of patients are hypertensive and 38% of patients are diabetes (Figures 1 and 2).

The majority of the patients are following nonvegetarian diet (86%) and high numbers of patients are following the regular meal uptake (95%). The interest of nutritional supplement was not seen in any of the patients, no patient is consumed any form of nutritional supplement (Figure 3).

DISCUSSION

In our study, the diet history of 21 patients with ARMD are recorded and analyzed. The prevalence of ARMD is comparable to that in Western countries in the age group of 70-75 years.⁴ 29% of patients are recorders under age

group of 70-75 years. Sex-wise distribution of ARMD did not show much variation among males and females. Snellen chart was used to find the visual acuity of the patients. The majority of the patients are recorder in dry (non-neovascular) ARMD 67%, 28% of wet (neovascular) ARMD, and 5% of patients had both the dry and wet ARMD. The systemic disease hypertension and diabetes were seen patients 43% and 38%. The majority of the patients are nonvegetarian with three meal practice daily in their life. Almost no one in this group of patients are consuming nutritional supplements in any form. This was a big drawback in the geriatrics patients where they have nutritional depletion in their body due to age factors. Egg consumption shown 38% of patients took <3 eggs per week and 14% of patients are vegetarian stick to green vegetables in their diet. Many studies observed the potential role of supplementation in prevention if progression, or even a degree reversal of the visual effects caused by the ARMD.¹⁵⁻¹⁷ Vitamin D levels are associated with ARMD risk in women.¹⁸ Metabolism of sugar plays a significant role in aging and disease. Gastrointestinal reflects the kinetics of blood glucose levels after ingesting a meal in people with and without diabetes, dietary hyperglycemia is associated with risk for major metabolic disorder such as Type 2

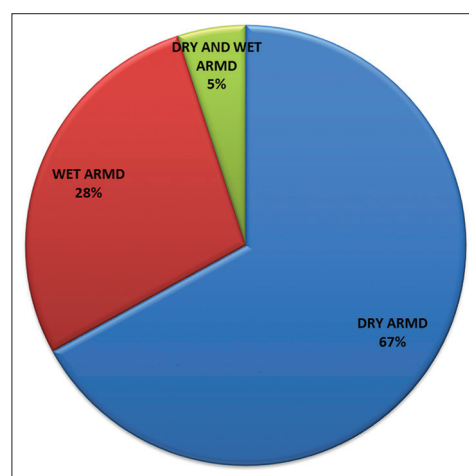


Figure 1: Distribution of ARMD in study patients

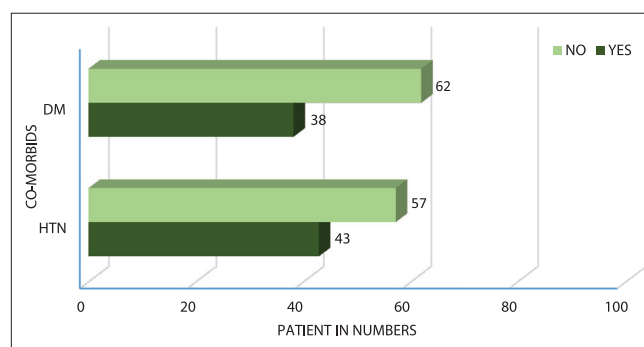


Figure 2: Distribution of comorbidities

Table 1: Age distribution of study patients

Age	Number of patients
50-55	14
56-60	19
61-65	19
66-70	5
71-75	29
76-80	14

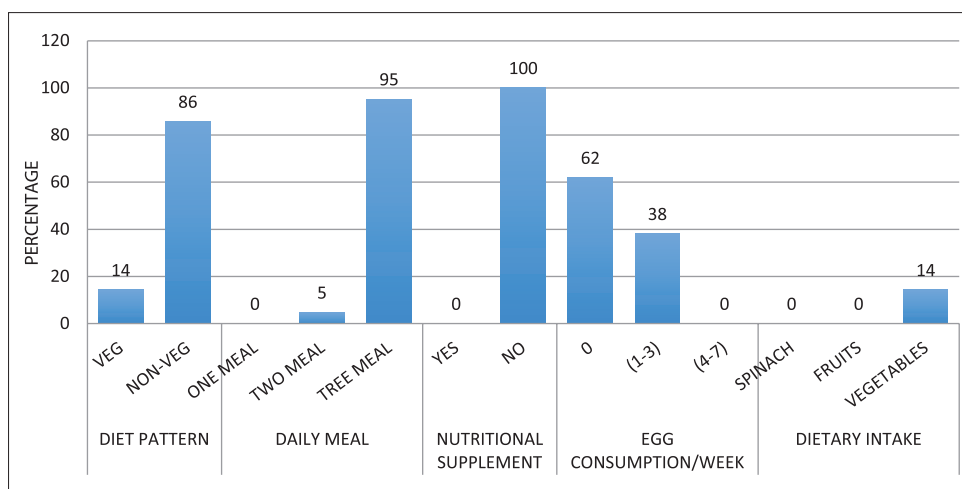


Figure 3: Diet pattern of age-related macular degeneration patients

diabetes, cardiovascular disease, and retinal disease such as dry eyes and age-related macular disease.¹⁹

CONCLUSION

Our study seems to indicate that the patients are not taking nutritional diet. Vitamin D levels are to be maintained in women. ARMD cause considerably economic impact and quality of life significantly. Nutritional diet is important for healthy living, dietician consult is recommended for patients with ARMD.

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