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Opinion

Age-Related Macular Degeneration: Is it Manageable?

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Age-related macular degeneration (AMD) as a progressive late onset disease causing central vision loss represents the leading cause of irreversible blindness among older adults, affecting approximately 11 million individuals in the United States and 170 million worldwide [1]. As population age, the number of sufferers is expected to rise [2]. The estimated number of AMD patients worldwide will reach 196 million by 2020, increasing to 288 million by 2040 [2]. This subgroup of population increase the socioeconomic burden of the disease [3].

How we can cost-effectively treat the raised concern?

A global effort to solve this not only medical, but at the same time the social problem must be based on the systematic eye screening and preventive treatment.

AMD meets the following criteria for screening: This disease is an important public health care problem; The epidemiology and natural history of the condition, starting from early to advanced disease, are well understood; Required screening test represented by retinal image is noninvasive, validated, and acceptable; An effective treatment by intravitreal injections of antiangiogenics is available for patients identified through early detection.

The opportunity to capture patients for eye screening is much greater in the primary care setting, indicating location where most of the screening will be conducted. Taken into account aforementioned it is proposed AMD management algorithm.

The first step in the AMD management algorithm is a systematic eye screening, which should be easily accessible for a patient and affordable, and at the same time non-causative for economical burden. These goals are achievable using technological developments in retinal imaging; automatic analysis of retinal photographs by Software and telehealth approach for remote management of cases.

Workflow and screening will be concentrated at the primary health care provider's office, where non-physician could take a photo of the patient's back of the eye, specifically the retina, by Portable Eye and Retinal Imaging System - Fundus Smartphone Adapter easily attached to an Apple or Samsung smartphone [4], or the cheapest option -a pocket-sized, solar-powered ophthalmoscope creating a ophthalmic camera for vision care screening and evaluation [5]. A photo taken by technical worker will be sent on-line to an ophthalmologist.

The second step in the AMD management algorithm - obtained retinal image will be analyzed by software [6].

The third step in the AMD management algorithm - Retinal photos of selected patients will be sent on-line to consulting ophthalmologist, who will in the next step, finally judge each case and create an individualized follow-up and treatment protocol. Likewise, alerting population to AMD risk factors by Handouts on AMD, and the AMD patient to maintaining a healthy diet with protective effect- intaking foods such as egg yolk, yellow corn, orange or yellow peppers, kale, broccoli, spinach, kiwi, grapes, zucchini, and squash with high levels of lutein and/or zeaxanthin. Besides an Amsler grid will be taken home for self-monitoring thus involving AMD patient in the process of screening and monitoring. Based on timely diagnosis selected subgroup of patients with intermediate AMD will benefit from AREDS formulation nutritional supplements [7].

Such management coordination will allow ophthalmologists to see more patients with pathology and less healthy patients.

Proposed approach will allow an affordability, improved eligibility for timely intervention in AMD patients and heighten an efficacy of human resources (general practitioner and other primary health care providers, ophthalmologists) expluatation finalized by high visual outcomes in patients and decrease of visually disabled handicaps, with high economic impact.

Summarizing, AMD is going to become too common, therefore it will have to be managed by millennial-minded approach consisting of primary eye screening at the primary care setting with the following diagnosis, monitoring and treatment by ophthalmologists in tight interprovider communication with a general practioner, which would lower the barriers of access to care in areas where an ophthalmologist may not be present, and likewise, in the light of coming vision-preserving treatment, will hopefully make this visually disabling disease manageable.

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