

Prevalence and Associated Risk Factors of Age-Related Macular Degeneration in the Retina Clinic at a Tertiary Center in Makkah Province, Saudi Arabia: A Retrospective Record Review

Authors : Rahaf Mandura, Fatmah Abusharkh, Layan Kurdi, Rahaf Shigdar, Khadijah Alattas

Abstract : Introduction: Age-related macular degeneration (AMD) in older individuals are serious health issues that severely impact the quality of life of millions globally. In 2020, the fourth leading cause of blindness worldwide was AMD. The global prevalence of AMD is estimated to be around 8.7%. AMD is a progressive disease involving the macular region of the retina, and it has a complex pathophysiology. RPE cell dysfunction plays a crucial step in the pathway leading to irreversible degeneration of photoreceptors with yellowish lipid-rich, protein-containing drusen deposits accumulating between Bruch's membrane and the RPE. Furthermore, lipofuscinogenesis, drusogenesis, inflammation, and neovascularization are four main processes responsible for the formation of the two types of AMD: the wet (exudative, neovascular) and dry (non-exudative, geographic atrophy) types. We retrospectively evaluated the prevalence of AMD among patients visiting the retina clinic at King Abdulaziz University Hospital (Jeddah, Makkah Province, Saudi Arabia) to identify the commonly associated risk factors of AMD. Methods: The records of 3,067 individuals from 2017 to 2021 were reviewed. Of these, 1,935 satisfied the inclusion criteria and were included in this study. We excluded all patient below 18 years, and those who did not undergo fundus imaging or attend their booked appointments, follow-ups, treatments, and referrals were excluded. Results: The prevalence of AMD among the patients was 4%. The age of patients with AMD was significantly greater than those without AMD (72.4 ± 9.8 years vs. 57.2 ± 15.5 years; $p < 0.001$). Participants with a family history of AMD tended to have the disease more than those without such a history (85.7% vs. 45%; $p = 0.043$). Ex- and current smokers were more likely to have AMD than non-smokers (34% and 18.6% vs. 7.2%; $p < 0.001$). Patients with hypertension and those without type 1 diabetes were at a higher risk of developing AMD than those without hypertension (5.5% vs. 2.8%; $p = 0.002$) and those with type 1 diabetes (4.2% vs. 0.8%; $p = 0.040$). In contrast, sex, nationality, type 2 diabetes, and abnormal lipid profile were not significantly associated with AMD. Regarding the clinical characteristics of AMD cases, most cases (70.4%) were of the dry type and affected both eyes (77.2%). The disease duration was ≥ 5 years in 43.1% of the patients. The most frequent chronic diseases associated with AMD were type 2 diabetes (69.1%), hypertension (61.7%), and dyslipidemia (18.5%). Conclusion: In summary, our single tertiary center study showed that AMD is widely prevalent in Jeddah, Saudi Arabia (4%) and linked to a wide range of risk factors. Some of these are modifiable risk factors that can be adjusted to help reduce AMD occurrence. Furthermore, this study has shown the importance of screening and follow-up of family members of patients with AMD to promote early detection and intervention of AMD. We recommend conducting further research on AMD in Saudi Arabia. Concerning the study design, a community-based cross-sectional study would be more helpful for assessing the disease's prevalence. Finally, recruiting a larger sample size is required for more accurate estimation.

Keywords : age related macular degeneration, prevalence, risk factor, dry AMD

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