"Community based cross-sectional survey to evaluate dry eye disease on different agegroup in selected Area, Gwalior"

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Abstract

Introduction- Dry eye disease is a multi-factorial disease of the tear and ocular surface that result in symptoms of discomfort. It is a common condition that occurs when your tear aren't able to provide adequate lubrication for your eye.

Purpose

Dry eye disease (DED) is a common age-related ocular surface disease. However, it is unknown how aging influences the ocular surface microenvironment. This systematic review aims to investigate how the aging process changes the ocular surface microenvironment and impacts the development of DED.

Results

Schirmer test and Ocular Surface Disease Index [OSDI] scores indicated significant decreases in tear production (Schirmer: healthy, 18.5±8.2 mm; dry, 11.2±5.4 mm;) and increases in self-reported dry eye symptoms (OSDI: healthy, 1.9±3.0; dry, 20.3±17.7;) in the dry eye, The discordant subgroup had decreased visualquality-of-life scores. Concordant patients were more similar to healthy controls on these measures**.**

Conclusion

DED is associated with a measurable adverse impact on several common and important tasks of daily living, further implicating this condition as an important public health problem deserving increased attention and resources.

Keywords: Dry Eye; Ocular Surface disease; visual disturbance; Diagnostic approaches

Introduction

Dry eye is a multi-factorial disease of the tear and ocular surface that results in symptoms of discomfort, visual disturbance and tear film instability with potential damage to the ocular surface. It is a condition in which a person doesn't haveenough quality tears to lubricate the eye. It is accompanied by inflammation of the ocular surface. Recent studies have shown that dry eye is an inflammatory disease and increased with age. The ocular surface (cornea, conjunctiva, lacrimal glands), meibomian glands the main lacrimal gland, and the innervation between them form a functional unit. Any or all of these structures may be affected in dry eye disease. Dry eye is a common problem, particularly in adults.

Dry eyes occur in 5% to 40% of the general population and are significantly more common in old age group. Dry eye disease has a substantial impacton quality of life by affecting visual acuity, social and physical functioning, and workplace productivity. Dry eye disease is divided into two forms, aqueous- deficient (tear deficiency) and hyperevaporative (increased evaporation). Around 20% of patients with dry eye have a solely aqueous-deficient disorder. Hyperevaporative disorder, mostly caused by dysfunction of the meibomian-glands.

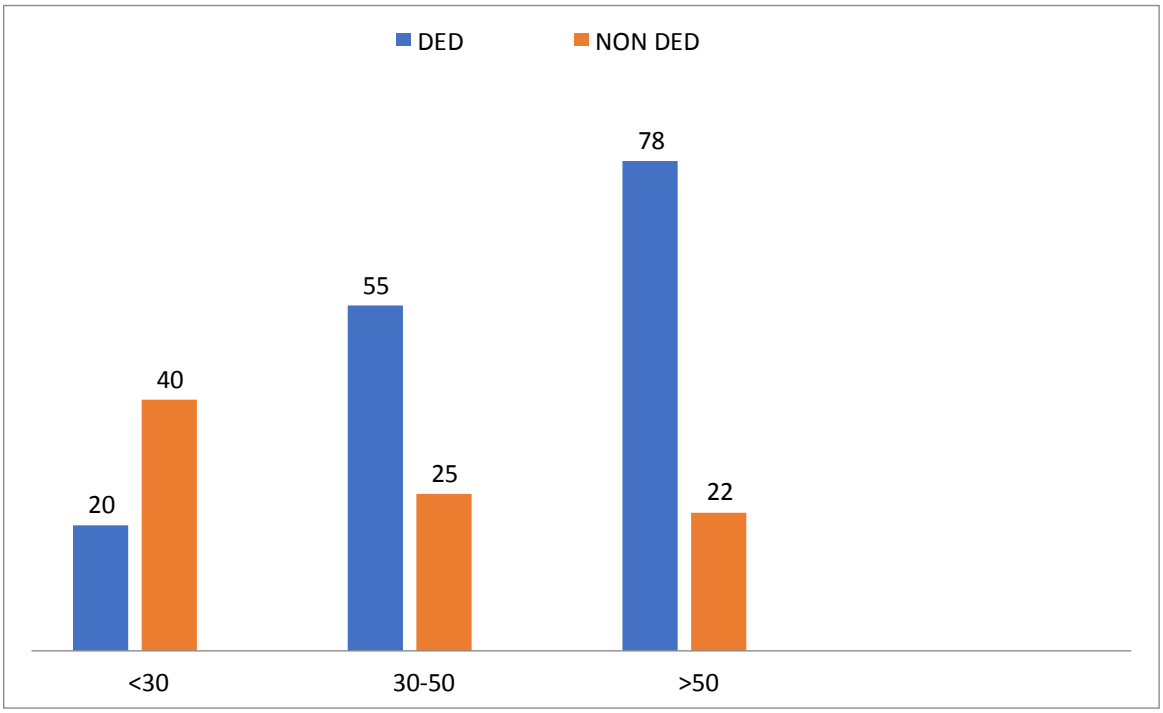
High level of evidence	Moderate level of evidence	Low level of evidence
Age	Medications such as diuretics, beta-blockers	Smoking
Female sex	Diabetes mellitus	Menopause
Collagen-vascular disease	Systemic chemotherapy	Botulinum toxin injection
Corneal-refractive surgery	Cataract surgery with a large incision	Pregnancy
Irradiation	Keratoplasty	Alcohol
Vitamin A deficiency	Low air humidity	Oral contraceptives
Hepatitis C	HIV	

Methodology

In this cross sectional study the data collection of 240 patients, in this group 60 patient were young age group [<30 age] who had dry eye related symptoms [itching, dryness, heaviness, burning sensation etc.] Andthe other group 80 patients [30-50 age groups] were having some eye related problems. [Like heaviness, conjunctivitis, glaucoma etc.] And other 100 patients [>50 age] who had symptoms of dry eye disease [watering, itching, grittiness, stickiness etc.]. The Schirmer test was performed after applying topical anesthesia with proparacaine eyedrop (proparacaine HCI, Alcaine 0.5%, Alcon) and after drying the excess tear drops. In this test, the Schirmer strip was placed on the-one third of the lateral part of the lower eyelid of the patient. The patient waited for 5 minutes and then was asked to look across and blink normally. Five minutes later, Schirmer strips were taken, and the quantity of tears was recorded. To determine TUBT, fluorescein solution was dropped into patients' eyes, and they were asked to blink three times and then look across with their eyes open. During the biomicroscopic examination, the integrity of the tears is lost under cobalt blue light, and the time to the formation of the dryspot on the cornea was recorded and evaluated.

Results

In this study the age group was taken between under 30 years [1-30] and between 30-50 years and above 50 years [50-80]. They havedry eye disease due to their occupational work (indoor, outdoor), according to age andlacrimal gland dysfunction.



Symptoms	Number of patient
Watering	60
Itching	35
Heavyness	15
Burning sensation	30
Dryness	20
Grittiness	55
Stickiness	25

Discussion

It has been shown in our study that lacrimal gland disfunction causes instability in the distribution of tear on the ocular surface. The TBUT test showing tearstability was found to be significantly lower in old age group and moderate young agegroup. Studies have shown that the ageing causes tear evaporation which is attributed to a reduction in the number of blinks and tear production and incomplete blinking found a positive correlation between the number of incomplete blinks and eye dryness symptoms of individuals. They found a negative correlation between the numbers of blinks and relevant symptoms of dry eye. When we evaluated the results of the schirmertest performed with topical anesthesia, which demonstrates the basal layer tear releasein our study, this suggests that the mechanism of evaporation is more prevalent than thereduction of tear release in the dry eye due to ageing of individuals. We think that the lack of difference among all the patients who had not any complaints related to dry eye

symptoms, are healthy patients. As age increased it also affect the functions of lacrimal gland and increased dry eye symptoms. It is an important public health problem. This problem affects both the eye health and visual acuity, workplace performance. There are environmental and personal precaution that can be taken to protect individuals from dry eye disease. Some of them to use artificial tear eye drop and should be advised to blink more so as to prevent tear deficiency and to protect moisture and avoid dryness.

Conclusion

The aging process greatly impacts the ocular surface microenvironment, consequently leading to DED. In young patients DED is characterized by the reduction of the lipid layer, and clinically by severe symptoms and impaired blinking. It is possible that the thin lipid layer provides weak protection against tear evaporation and may cause severe symptoms. Special characteristics were observed in the tear film lipid layer of young patients with DED compared to older patients. In this study on 240 patients with DED, three age groups were compared (<30 years, 30–50years and > 50 years). More severe symptoms and more incomplete blinks were found in the older subgroup, Patients in the younger group also had a lower lipid layer thickness, which was negatively correlated with the Standardized Patient Evaluation of Eye Dryness symptom.

Summary

With the results of this study, we can begin to distinguish, experimentally and clinically, a subgroup of patients with dry eyes who have a different mechanism of disease, one that extends beyond the ocular surface–lacrimal gland complex that is commonly believed to be responsible

in older age groups for the symptoms of dry eyes. The results of the study are consistent with our postulation that in individuals with discordant DED, CNS processes are responsible for much of the discordance between the severity of symptoms and the degree of ocular surface damage.We hope that this research will move the field forward toward an end goal of being able to correctly diagnose the subtypes of DED and provide the appropriate treatment that is tailored to each individual.

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DECLARATIONS

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