

Clinical Profile of Patients of Dry Eye Presenting To the Tertiary Health Care Centre

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Abstract

Purpose - To study the clinical profile of patients of dry eye presenting to the tertiary health care centre.

Methods- This was a prospective observational study that involved 100 eyes of 50 patients with dry eye complaining of burning, itching, foreign body sensation, grittiness, redness and pain., Dry eye diagnostic tests were done in all the patients.

Results-There were 19 males and 31 females and the age group taken was 30 to 75 years.

14 patients belonged to the age group of 30 to 45 years, out of which 9 were males and 5 were females. 29 patients belonged to age group of 46 to 60 years, out of which 8 were males and 21 were females. 7 patients belonged to the age group of 61 to 75 years, out of which 2 were males and 5 were females. Most common presentation in dry eye patients is foreign body sensation in 36% patients followed by itching in 30% patients, burning sensation in 24% patients, redness in 6% patients and pain in 4% patients.

Conclusion-Dry eye is a common form of multifactorial ocular disease and the disease tends to occur more commonly in females of 46 to 60 years age group that is females in the perimenopausal age group followed by men in the age group of 30 to 45 years due to computer vision syndrome. Most common presentation of dry eye is foreign body sensation and itching followed by burning sensation. Dry eye diagnostic tests like Tear film break up time was positive in 64% patients and Schirmers test was positive in 52% of patients along with other dry eye diagnostic tests.

Keywords: dry eye syndrome, computer vision syndrome, keratoconjunctivitis sicca, aqueous deficiency

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I. Introduction

Dry eye syndrome (DES) is a disorder of the precocular tear film that results in damage to the ocular surface and is associated with symptoms of ocular discomfort. DES is also called keratoconjunctivitis sicca (KCS), keratitis sicca, sicca syndrome, xerophthalmia, dry eye disease (DED), ocular surface disease (OSD), or dysfunctional tear syndrome (DTS), or simply dry eyes [1]. Keratoconjunctivitis sicca is a Latin word and its literal translation is "dryness of the cornea and conjunctiva." It may be helpful to know that "sicca" is part of the English word "desiccate." The dry eye syndrome in which the eyes do not produce enough tears is also known as "Sjögren's syndrome" [2].

Dry eye disease is characterized by instability of the tear film that can be due to insufficient amount of tear production or due to poor quality of tear film, which results in increased evaporation of the tears. Dry eye therefore can mainly be divided into two groups, namely, aqueous production deficient dry eye disease and evaporative dry eye disease.

Insufficient tears cause damage to the interpalpebral ocular surface and are associated with symptoms of discomfort. The International Dry Eye Workshop (2007) defined dry eye as a multifactorial disease of the tears and ocular surface that results in symptoms of discomfort, visual disturbance, and tear film instability with potential damage to the ocular surface. It is accompanied by increased osmolarity of the tear film and inflammation of the ocular surface [1, 3]. DES is associated with decreased ability to perform certain activities such as reading, driving, and computer related work, which require visual attention. Patients experience dry eyes symptoms constantly and severely, affecting their quality of life [4-8].

Schirmer's test



Tear film break up time



Fluorescein dye clearance test



Rose Bengal staining



II. Method And Material

This was a prospective observational study that involved 100 eyes of 50 patients with dry eye complaining of itching, burning, foreign body sensation and grittiness. Patients were recruited from the OPD of MLB MEDICAL college, Jhansi ,Uttar Pradesh and were followed from 1st June 2019- 1st December 2019. It was performed under the Helsinki Declaration of 1975, as revised in 2000. The necessary permission from the Ethical and Research Committee was obtained for the study.

Inclusion criteria

1. All patients between the age group 30 to 75 years who presented to the OPD of MLB medical College Jhansi with the complaint of itching, burning, foreign body sensation and grittiness and who were found to have positive results of any of the dry eye diagnostic tests like Schirmer's test , tear film break up time,

Rose Bengal staining test, Fluorescein dye clearance test or ocular surface disease index questionnaire(OSDI) were included in the study.

Exclusion criteria

1. Patients outside the age group of 30 to 75 years.
2. Patients with any corneal pathology.
3. Patients with other conjunctival diseases.
4. Patients with recent intraocular surgery.
5. Patients with the history of trauma.
6. Patients with any other ocular pathology.
7. Mentally or physically unfit patients.

All patients were subjected to a detailed history taking, complete ophthalmic examination in diffuse and focal light and numerous dry eye diagnostic tests.

III. Results

A total of 100 eyes of 50 patients were studied. We included only eyes with a recent complaint of itching, burning, foreign body sensation and grittiness. There were 19 males and 29 females and 60% of the studied eyes were right eyes.

All eyes showed positive results to one or more dry eye diagnostic tests.

Table1: Clinical profile of patients presenting with dry eye

	Clinical profile	no. of patients
1	Perimenopausal female	21
2	Computer vision syndrome	14
3	Meibomian gland dysfunction	09
4	Contact lens users	06

Table2: Age distribution in dry eye population

	Age group	no. of patients
1	30 to 45 years	14
2	46 to 60 years	29
3	61 to 75 years	07

Table3: Gender distribution in dry eye population

	Gender	no. of patients
1	Male	19
2	Female	31

Table4: Ocular surface symptoms in patients of dry eye

	Symptoms	no. of patients
1	Foreign body sensation	18
2	Itching	15
3	Burning sensation	12
4	Redness	03
5	Pain	02

IV. Discussion

DED is one of the most prevalent ophthalmic disorders and may have an adverse impact on the quality of life. In our study, the majority of patients with DED were in the age group of 46 to 60 years. The Salisbury Eye Evaluation study reported males to be more commonly affected than females; however, it included only patients more than 65 years of age.^[9] Desk job with computer use was significantly associated with the risk of developing severe DED. The low-relative humidity in indoor office environment and air-conditioned rooms negatively impacts the tear film by causing desiccation of the eye. Computer use for more than 8 h a day has been reported as a significant risk factor for DED, mainly attributed to the decrease in blink rate while using these devices, thereby hampering the uniform distribution of the tear film over the ocular surface.^[10] Since the main route of tear elimination is through evaporation, longer periods of eye opening and the higher gaze angle when viewing a computer screen results in faster tear loss which further worsens the dry eye. We observed 89.98% of dry eye cases with 4 h or more of VDT usage had severe dry eye disease. Sharma and Hindman study showed that dry eye is more commonly seen with increasing age group. Increasing use of computers, laptops, tablets, smartphones and television has led to an increase in the prevalence of DED in the younger population. Nearly 50% of contact lens users may complain of symptoms of dryness, discomfort, grittiness, irritation, burning, or foreign body sensation.^{[11],[12]} Smoking may affect the tear film stability as well as ocular surface sensitivity, and a significant association has been reported between smoking and DED.^[13] Guillon *et al.*[14] have shown in a study in United Kingdom that the tear film evaporation is significantly higher in subjects above the age of 45 years. An intact and efficient lipid layer in the tear film is required to prevent the evaporative loss of tear film. This lipid layer is thinner and less efficient in older subjects and particularly females. There is destabilization associated with significant changes in the tear lipid layer leading to less protection from evaporation in the older population.[15] These findings are consistent with the previous studies by Shaumburg,[16] Moss *et al.*[17] which emphasize an increased prevalence of dry eye in the elderly, particularly women. Le *et al.*[18] in a population-based cross-sectional study in China reported an adverse impact on the vision-related quality of life as well as an impairment on mental health in patients having various dry eye symptoms. Six patients of the sample were soft contact lens users and all of them had dry eye. Most of these patients were regular contact lens users with >10 h of lens usage every day. It has been found previously that pre-lens tear film thinning time was most strongly associated with dry eye followed by nominal contact lens water content and refractive index. This, together with poor lens wettability, could be a basis for a higher evaporative loss during contact lens wear and was attributed to potential changes in tear film lipid composition.[19]

V. Conclusion

Dry eye is a multifactorial disease, and this disease tends to occur more in females of 46 to 60 years age group. Some cases showed a history of computer vision syndrome. Our study spans over a period of 6 months and is prospective in nature focusing on age and gender distribution and clinical profile of dry eye patients. Dry eye diagnostic tests like tear film break up time and schirmers test seems to be the modality of choice for examination of dry eye patients. Most predominant symptom of dry eye is foreign body sensation followed by itching, burning and grittiness.

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