

Clinical Profile of Patients of Dry Eye- A Prospective Observational Study

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Abstract

Original Research Article

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. 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”. **Objective:** To assess the clinical profile of patients of dry eye. **Methods:** This was a prospective observational study was conducted at Department of Eye, Barind Medical College and Hospital, Rajshahi, Bangladesh from January to June 2022. Total 101 eyes of 51 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 20 males and 31 females and the age group taken was 30 to 75 years. 15 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 22 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 38% patients followed by itching in 29% patients, burning sensation in 23% patients, redness in 6% patients and pain in 4% patients. **Conclusion:** 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.

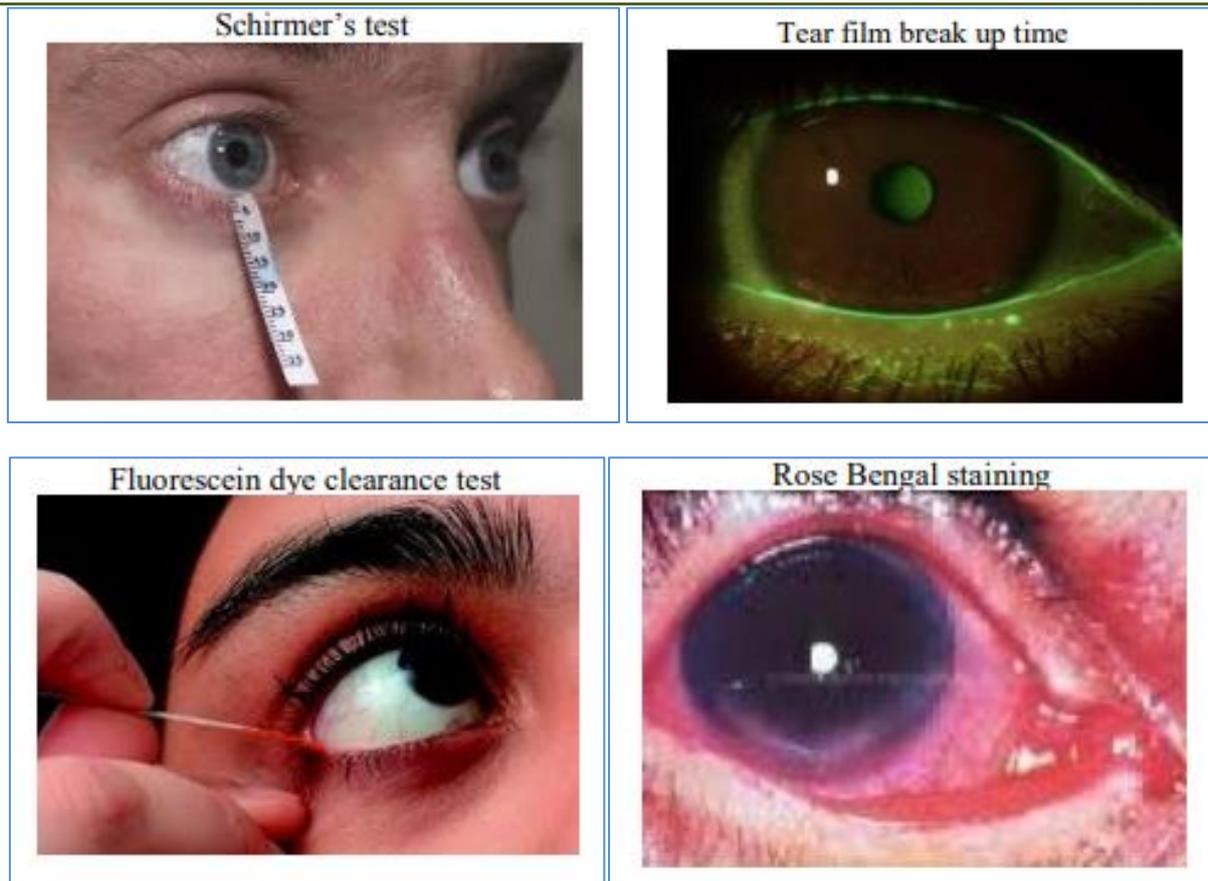
Keywords: Dry Eye Syndrome, Computer Vision Syndrome, Keratoconjunctivitis Sicca, Aqueous Deficiency.

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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 is recognized as a growing public health problem and one of the most frequent reasons for visiting an ophthalmologist in middle and old age people. The tear film and ocular surface society dry eye workshop II (TFOS DEWS II) [3]. Dry eye may lead to progressive

ocular surface disease, increases risk of infections, contact lens intolerance, development of epithelial defects, superficial punctate keratitis, filamentary keratitis, scarring, ocular surface keratinization, sterile corneal ulceration, corneal thinning, sterile corneal melting leading to perforation, and severe visual loss. Hence, correct diagnosis and appropriate management of dry eye are essential. 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. It is accompanied by increased osmolarity of the tear film and inflammation of the ocular surface [1, 4]. DES is associated with decreased ability to perform certain activities such as reading, driving, and computer related work, which requires visual attention. Patients experience dry eyes symptoms constantly and severely, affecting their quality of life [5–8].



METHODS AND MATERIALS

This was a prospective observational study was conducted at Department of Eye, Barind Medical College and Hospital, Rajshahi, Bangladesh from January to June 2022. Total 101 eyes of 51 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.

Inclusion Criteria:

1. All patients between the age group 30 to 75 years who presented to the OPD of BMCH 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.

RESULTS

Total 101 eyes of 51 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. There were 20 males and 31 females and the age group taken was 30 to 75 years. 15 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 22 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 38% patients followed by itching in 29% patients, burning sensation in 23% patients, redness in 6% patients and pain in 4% patients.

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

Table 1: Clinical profile of patients presenting with dry eye (N=51)

Clinical profile	no. of patients	Percentage
Perimenopausal female	22	43.1%
Computer vision syndrome	14	27.5%
Meibomian gland dysfunction	09	17.6%
Contact lens users	06	11.8%

Table 2: Age distribution in dry eye population (N=51)

Age group	no. of patients	Percentage
30 to 45 years	15	29.4%
46 to 60 years	29	56.9%
61 to 75 years	07	13.7%

Table 3: Gender distribution in dry eye population (N=51)

Gender	no. of patients	Percentage
Male	20	39.2%
Female	31	60.8%

Table 4: Ocular surface symptoms in patients of dry eye (N=51)

Symptoms	no. of patients	Percentage
Foreign body sensation	19	37.3%
Itching	15	19.4%
Burning sensation	12	23.5%
Redness	03	5.9%
Pain	02	3.9%

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. There were 20 males and 31 females and the age group taken was 30 to 75 years. 15 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 22 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 38% patients followed by itching in 29% patients, burning sensation in 23% patients, redness in 6% patients and pain in 4% patients.

We observed 89.98% of dry eye cases with 4h or more of VDT usage had severe dry eye disease. 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]. Moss *et al.*, [16] also reported higher prevalence of dry eye in women (17.0%) compared with men (11.1%) and this difference was persisted across all ages. Beijing eye study [17] reported in their multivariate analysis that females had more prevalence of dry eye symptoms than males.

Tomsic *et al.*, [18] in their study reported the prevalence of Sjögren's syndrome dry eye of 0.1% whereas we found that 1.6% of total dry eye patients were suffering from Sjögren's syndrome. In our study, 93.3% of dry eye patients were positive for tear breakup time which was higher compared to other objective

diagnostic tests. Similarly, Gupta *et al.*, [19] reported that 96.0% of dry eye patients were positive for tear breakup time. However, in contrast to our study Rege *et al.*, [20] reported prevalence of lipid layer deficiency as 14.5%, followed by aqueous layer (13.4%) and mucin layer deficiency (3.5%). 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 >10h of lens usage every day. It has been found previously that prelens 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].

CONCLUSION

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.

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