

## A STUDY ON PREVALENCE OF DRY EYES IN A TERTIARY PRIVATE HOSPITAL

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### Abstract

**Introduction:** Dry eye disease (DED) is a multifactorial ocular surface disease characterized by symptoms of discomfort, irritation, and visual disturbance. Dry eye disease (DED), either alone or in combination with other conditions, is a frequent cause of ocular irritation that leads the patients to seek ophthalmic care

**Materials & Methods:** 150 study subjects were enrolled for the study. A cross-section hospital-based, observational study was conducted.

**Results:** Among the study subjects the maximum were from 61-70 year age group, followed by 51-60 year age group. Prevalence of DED was detected in 30%.

**Keywords:** Dry eye, Kadapa, Meibomian gland dysfunction, Tear film breakup time

### Introduction:

Dry Eye Disease is one of the most frequently diagnosed condition & Tear substitutes are most often prescribed drops by Ophthalmologists. Dry eye disease (DED), either alone or in combination with other conditions, is a frequent cause of ocular irritation that leads the patients to seek ophthalmic care. Dry eye disease (DED) is a chronic ocular pathology and a major global health problem that manifests as a plethora of symptoms such as burning, photophobia, tearing, and grittiness. Patients with DED experience difficulties in daily routine activities thus compromising their quality of life.<sup>1</sup>

Information on DED is limited due lack of uniformity in its definition and the inability of any single diagnostic test or set of diagnostic tests to confirm or rule out the condition. Thus, there has been a shift towards symptom-based assessment as the key component of clinical diagnosis.<sup>2-6</sup>

Environmental factors, such as reduced humidity and increased wind, drafts, air conditioning, or heating may exacerbate the ocular discomfort.<sup>7</sup>

### Objectives:

To study prevalence of dry eyes in a tertiary private hospital.

### MATERIALS AND METHODS

The study was done in a tertiary care teaching hospital over a period of 2 years. The study period was from January 2017 to December 2017. Among the total out patients who attended the Ophthalmology department in Fathima Institute of Medical Sciences, 150 study subjects were enrolled using consecutive sampling.

Patients with ocular surface infections, foreign body, extensive ocular surface pathologies and those who had undergone an ocular surgery within 2 months were excluded from the study. All participants underwent a general ophthalmic assessment along with slit lamp examination and TBUT. TBUT was performed in all participants by a single observer. Tear film break-up time was used to assess the stability of the precorneal tear film.

**Tear break up time<sup>8</sup>:** Fluorescein was applied to the ocular surface. The patient was asked to blink a few times before examination. Slit lamp biomicroscopy with a cobalt blue filter was used to investigate the tear film layer, and the interval from the last blink to the appearance of the first random dry spot on the cornea was noted. The test was repeated thrice and the mean value was calculated. Value of <10 s was considered as indicative of tear film instability.<sup>9</sup>

**Schirmer's test:** Whatman filter paper was placed in the lower fornix at the lateral one-third of the lower lid margin. The extent of wetting of the strip was measured after 5 min. Less than 5.5 mm of wetting was diagnostic of severe dry eye.<sup>10</sup> Schirmer's test was done without anesthesia. To avoid the influence of conjunctiva-corneal staining on the Schirmer test, it was carried out at an interval of 10 min after the TBUT test.

Final grading of dry eye was done according to DEWS.<sup>11</sup>

Grade 1-mild discomfort, TBUT variable, Schirmer's score variable

Grade 2-moderate discomfort, TBUT <10 sec, Schirmer's score <10mm

Grade 3-severe discomfort, TBUT <5sec, Schirmer's score <5mm

Grade 4-disabling discomfort, TBUT immediate, Schirmer score <2mm

(Grade 4 must have symptoms and signs)

**RESULTS:**

**Table 1: Dry eye disease in relation to age distribution**

Age (years)	Dry eye present	Dry eye absent	Total No of patients
21-30	5	15	20
31-40	12	25	37
41-50	4	18	22
51-60	10	20	30
61-70	14	27	41
Total	45	105	150

Among the study subjects the maximum were from 61-70 year age group, followed by 51-60 year age group. Prevalence of DED was detected in 30%.

**Table 2: Dry eye disease in relation to sex distribution**

Sex	Dry eye present	Dry eye absent	Total No of patients
Females	21	52	73
Males	24	53	77
Total	45	105	150

Among the study subjects the maximum were males.

**Table 3: Grading of dry eye according to Schirmer's test and tear film breakup time (TBUT)**

TBUT	Schirmer's (mm/5min)	TBUT (sec)
Normal (>15)	12	2
Mild (10-15)	15	24
Moderate (5-9)	15	16
Severe (<5)	3	3
Total	45	45

Among the study subjects, Schirmer's test was normal among 12 subjects, mild and moderate in 15 subjects and severe in 3 study subjects. Among the study subjects, TBUT test was normal among 2 subjects, mild among 24 subjects, moderate in 16 subjects and severe in 3 study subjects.

**Table 4: Severity of dry eye according to dry eye work shop (DEWS)**

TBUT	Number of patients (n)	Percentage
Mild	15	33.33
Moderate	25	55.56
Severe	5	11.11
Total	45	100

Among the study subjects based on DEWS classification, mild among 15 subjects, moderate in 25 subjects and severe in 5 study subjects.

**DISCUSSION**

The prevalence of dry eye in the present study was found to be 30%. In a total of 150 patients, prevalence of dry eye was maximum (66.37%) in the age group of 61 to 70 years, with mean age of 49.10±11.02 years. Studies have reported the prevalence of dry eye to be varying from 5% to as high as 73.5%.<sup>12,13</sup> Another update from the international DEWS stated that the global prevalence of dry eye is about 17% while several other studies show a higher prevalence of approximately 30% in people of Asian descent.<sup>14</sup> 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.<sup>15</sup>

Among the study subjects the maximum were from 61-70 year age group, followed by 51-60 year age group. The prevalence of dry eye increased progressively with age.<sup>16</sup> Suchi Shah and Harsha Jani showed in their study that maximum prevalence (32.5%) of dry eye were in the age group of 51-60 years.<sup>17</sup> Mohammed Azhar Chisti et al. showed that the highest prevalence of dry eye was in the age group of 41-50 years (17.02%) followed by 51-60 years age group(15.56%).<sup>18</sup>

Among the study subjects the maximum were males (53.33%). The findings are more similar to studies in Uttarakhand.<sup>16</sup>

Exposure to excessive wind, sunlight or high temperature and air pollution were significantly related to dry eye. The hot and dry atmosphere aggravate symptoms of dry eye like grittiness, sandy and foreign body sensations which might compel the patient to seek advice.<sup>19</sup>

Among the study subjects, Schirmer's test was normal among 12 subjects, mild and moderate in 15 subjects and severe in 3 study subjects. Among the study subjects, TBUT test was normal among 2 subjects, mild among 24 subjects, moderate in 16 subjects and severe in 3 study subjects.

Among the study subjects based on DEWS classification, mild among 15 subjects, moderate in 25 subjects and severe in 5 study subjects.

This emphasizes the need for creating awareness among the study subjects to adopt protective measures during work. This might not altogether prevent the incidence of dry eye, but this will help in delaying this condition and decreasing its severity. This also generates a need for regular screening for dry eye in this group of people who carry an immense burden of dry eye and are probably underreported due to their ignorance toward health.<sup>18</sup>

#### CONCLUSION:

In conclusion, the prevalence of the dry eye is 30% according to our Hospital based study.

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