

PREVALENCE OF DRY EYE SYNDROME IN PATIENTS ABOVE 20 YRS OF AGE ATTENDING EYE OUTPATIENT DEPARTMENT

Ophthalmology

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ABSTRACT

Introduction: Dry eye syndrome (DES) is characterized by ocular irritation resulting from an alteration of the tear film. The effects of DES can vary from minor inconvenience for most sufferers to rare sight threatening complications in severe cases. **Methods :** Detailed ocular, systemic, family history will be taken. Ocular examination includes review of lid surface abnormalities, conjunctiva and corneal changes and meibomian gland evaluation. Then perform the objective dry eye tests namely tear film break up time, schirmer test reflex and schirmer test basal for both eye. **Results :** Prevalence of dry eye syndrome is 36.50% in patients aged above 18 years attending out patient department in our study. Highest prevalence was found in age group of 51-60 years and it is 53.33%. In according to Severity, prevalence was found to be mild in 46.57%, moderate in 35.61% and severe in 17.80%. There is a strong association of dry eye syndrome with autoimmune disease (58.33%) and arthritis (52.17%). Prevalence among females is more than males, and it is about 45% in female and 28% in males in our study. **Conclusion:** It is clearly viewed by patients, however, as a chronic problem associated with a significant loss of quality of life, including chronic eye irritation and fluctuating vision. The result of this study helps to find out actual prevalence of this disease in the population and its associated factors.

KEYWORDS

Dry eye ; Schirmer test ; cornea.

INTRODUCTION:

There are mainly five sense organs in the body-eyes, ears, tongue, skin, and nose. Out of which eye is most important sense organ. There are many structures of eye involved in the visual process like cornea, lens, retina and visual cortex and intact tear film. Tear film forms and maintain a smooth refracting surface over the cornea, hereby intact tear film makes very important contribution in quality of vision⁽¹⁾.

Tear film consists of 3 layers: outer lipid layer, middle aqueous layer and inner mucus layer. Outer lipid layer is secreted by meibomian glands, glands of zeis and glands of moll which prevents evaporation of aqueous layer, middle aqueous layer secreted by main and accessory lacrimal glands and inner mucous layer secreted by conjunctival goblet cells and glands of manz which converts the hydrophobic corneal surface to hydrophilic corneal surface.

In a present day scenario due to environmental changes, industrial pollution, change in working habit, long study hours, increase and inappropriate use of computer⁽²⁾ leads to normal functioning of tear.

National Eye Institute (1995) defined dry eye as "a disorder of the tear film due to tear deficiency or excessive evaporation, which causes damage to the interpalpebral ocular surface and is associated with symptoms of ocular discomfort"⁽³⁾.

Dry Eye Work Shop [DEWS] (2007): dry eye is a multifactorial disease of the tear film 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⁽⁴⁾.

Keratoconjunctivitis sicca (KCS), also called dry eye syndrome (DES) in layman term or keratitis sicca. The phrase "keratoconjunctivitis sicca" is latin term and its translation is "dry [inflammation] of the cornea and conjunctiva".

Dry eye syndrome (DES) is characterized by ocular irritation resulting from an alteration of the tear film. The effects of DES can vary from minor inconvenience for most sufferers to rare sight threatening complications in severe cases. Although the diagnosis of DES has traditionally focused on inadequate secretion, or aqueous tear deficiency, the tear film is a complex and delicately balanced unit dependent on the normal function of several distinct components^(5,6).

Current treatment is heavily weighted toward supplementation, stimulation, or preservation of aqueous tears, which is satisfactory for most patients. DES, however, often involves multiple deficiency states that, when disregarded, can result in treatment failure and frustration

for both the patient and the physician⁽⁷⁾.

Ours is a tertiary centre eye hospital receiving patients of various age group, different occupation and patients with association of different occupation and patients with association of different systemic disorder. Climate of our city also favours dry eye syndrome.

Thus my aim is to study prevalence of dry eye syndrome in patients attending eye outpatient department.

METHODOLOGY:

Participant Recruitment Procedure:

Patients who will meet the eligibility criteria will be enrolled in the study. Detailed ocular, systemic, family history will be taken. Patient will be asked about the record of their duration of working hours, h/o lasik, Prk, cataract surgery, glaucoma, pterygium, any systemic disease (especially pertaining to dry eye), contact lens use etc. Ocular examination includes review of lid surface abnormalities, conjunctiva and corneal changes and meibomian gland evaluation. Then perform the objective dry eye tests namely tear film break up time, schirmer test reflex and schirmer test basal for both eye. The tear-film break-up time test was performed before the other dry eye tests to avoid any interference between the test.

In this prospective study, 200 patients above 18 years of age presenting with various ophthalmic problems to a tertiary eye care centre were screened for dry eye. The patients were selected randomly and informed about the nature of the study. Patients suffering from acute ocular infections with extensive corneal or conjunctival pathology and those who had undergone extraocular or intraocular surgery of the screening were excluded. 276 patients were initially chosen, 53 were excluded and 23 refused to participate in the study. Informed consent was obtained from subjects recruited for the study. A single observer who was an ophthalmologist (AS), after eliciting a complete general (including history of systemic disease, especially pertaining to dry eye) and ophthalmic history, performed ocular and systemic examination and subsequently administered the dry eye questionnaire. Ocular examination included review of lid surface abnormalities, conjunctival and corneal changes and meibomian gland evaluation. Then performed the objective dry eye tests thereafter. The pre-designed dry eye questionnaire was based on models suggested by Hikichi, Toda, Roche and their colleagues was asked to all patients undergoing study. A response was defined as positive when the subject reported a symptom to occur sometimes, often or all the time and as negative when reported to occur rarely or never.

Then whole anterior and posterior segment examination done by using slitlamp biomicroscope, direct ophthalmoscope, indirect

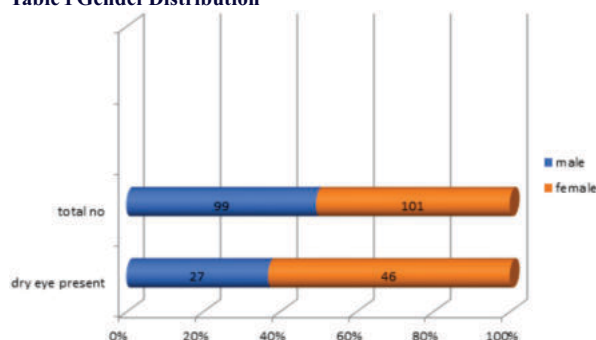
ophthalmoscope with 20D lens and by using 90D lens biomicroscopy as per profoma attach here and all finding are documented.

Special test done namely tear film breakup time, schirmer test reflex and schirmer test basic for both eye. The tear-film break-up time test was performed before the other dry eye tests to avoid any interference between the tests. The tear-film break-up test was repeated three times for each eye, and the average time was recorded.

RESULTS:

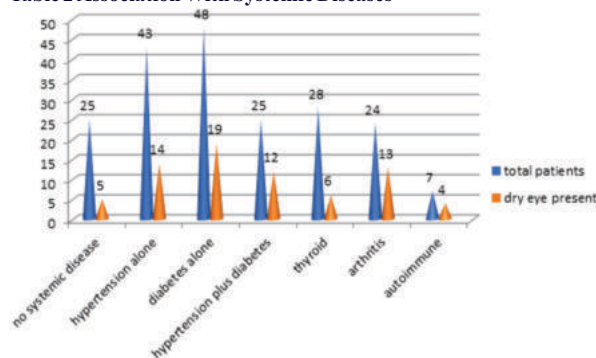
Prevalence of dry eye syndrome is **36.50%** in patients aged above 18 years attending out patient department in our study. Highest prevalence was found in age group of 51-60 years and it is **53.33%**. In according to Severity, prevalence was found to be mild in **46.57%**, moderate in **35.61%** and severe in **17.80%**. There is a strong association of dry eye syndrome with autoimmune disease (**58.33%**) and arthritis (**52.17%**) (table 2). Prevalence among females is more than males, and it is about 45% in female and 28% in males in our study (Table 1). Our study suggests greater association of dry eye syndrome with computer workers (**55%**), farmers (**47.05%**), and industrial workers (**42.30%**). Thus from above data, dry eye correlates with exposure to environmental pollution, improper and long usage of computer. Corneal xerosis (100%), Dry and lustreless conjunctiva (**88.23%**) were found in patients of dry eye which are most frequent sign associated with dry eye. Awareness about dry eye syndrome is very poor among study population **73.97%** patients.

Table 1 Gender Distribution



Above finding showed higher prevalence among female gender 46/101 compared to male 27/99 patients. So prevalence among total population is 23% for female gender and 13.5% for male gender.

Table 2 Association With Systemic Diseases



Above diagram showed association of dry eye syndrome with various systemic diseases, more than half of patients with auto immune disease (58.33%) and arthritis (52.17%) showed presence of dry eye syndrome.

DISCUSSION-

Present study deals with, prevalence of dry eye syndrome in more than 18 years of age group, by study of randomly chosen 200 cases encountered in the Department of Ophthalmology at our institute.

Dry eye is a commonly missed disease because of its various way of presentation, and sometimes lack of thorough eye examination. It causes ocular morbidity and annoyance to patient. Thus it is necessary to find out actual prevalence of dry eye syndrome and treat it.

There are many studies available on the dry eye syndrome, to find

prevalence among variety of population, association with various occupations, gender, systemic diseases and with different environmental conditions.

Such studies can play important role in finding out target group, prone occupation which lead to dry eye, systemic condition which frequently links to dry eye, particular operation which promote or aggravate dry eye.

By finding out the actual prevalence we can make strategy to prevent and treat the disease and thus we can reduce ocular morbidity among society by this hidden form of disease.

In our study, of 200 participants, 73 screened fits in criteria for dry eye syndrome. So in our institute the prevalence turns out to be a **36.5%**. In A K Khurana, R Choudhary, B K Ahluwalia, S Gupta study⁽¹⁾ rural prevalence found out to be 74% and urban base of 26%. In Kavita R Bhatnagar, Avani Sapovadia, Divya Gupta, Pooja Kumar, Hemal Jasani study carried out at D.Y.Patil hospital⁽²⁾ prevalence found out to be 10.58%.

In Singapore eye hospital study⁽³⁾ found out to 30%, in SRM hospital study⁽⁸⁾ found out to be 29.5%, in ijo study at delhi 18.4%⁽⁵⁾ and in Jaipur hospital study⁽⁶⁾ by Anshu Sahai, Pankaj Malik prevalence found out to be 18.4%. Thus prevalence of our study correlate with various ago studies.

In our study the maximum prevalence was found in age group 51-60 years. So in our institute the prevalence turns out to be a **53.33%**. In Jaipur hospital study,⁽⁷⁾ age group was around 70 years with prevalence of 36%. In D.Y.Patil study,⁽⁸⁾ in male age group 55-60 years (prevalance 14%), and in female age group of 46-50 (prevalance 16.67%). In IJO Delhi study,⁽⁹⁾ max prevalence in age groups above 60 years was 36%. Thus age distribution of our study correlate with above studies.

Our study suggests greater association of dry eye syndrome with computer workers (**55%**), farmers (**47.05%**), and industrial workers (**42.30%**). Thus above data correlates, dry eye with exposure to environmental pollution, improper and long usage of computer. In Jaipur hospital study⁽¹⁰⁾ farmers and industrial workers show 25.3% prevalence. In A.K.Khurana study⁽⁵⁾ higher association in farmers (32%), industrial labourers (28%) In D.Y.Patil hospital study⁽⁴⁾ shows, higher prevalence in out door workers (17.77%). Computer vision syndrome study⁽⁸⁾ show higher prevalence of dry eye in more than 6 hours a day of computer usage.

In our study, we have found that many dry eye patients (**73.97%**) were unaware of dry eye syndrome. This finding gives support to hidden nature of this disease. Thus by our study many of the dry eye syndrome patients were unmasked.

Summary-

Dry eye disease is no longer a trivial eye problem ignored by eye care professionals, underdiagnosed, and undertreated. Recent surveys have shown that more than 30% of patients presenting to ophthalmologists complain of dry eye symptoms. New understanding of the pathogenesis of dry eye disease and emerging options for treatment have led to a broad based interest in improving our approach to patients with dry eye. Dry eye disease is a multifactorial problem that presents with a range of symptoms and that frequently does not correlate with current office based tests for tear dysfunction and ocular surface disease.

It is clearly viewed by patients, however, as a chronic problem associated with a significant loss of quality of life, including chronic eye irritation and fluctuating vision.

The result of this study helps to find out actual prevalence of this disease in the population and it associated factors.

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