ORIGINAL RESEARCH PAPER

Volume-7 | Issue-2 | February-2018 | PRINT ISSN No 2277 - 8179

INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

PREVELANCE OF DRY EYE IN PATIENTS UNDERGOING CATARACT SURGERY IN TERTIARY EYE CENTER

Ophthalmology

Dr Charu Jain M.S Associate Professor

Dr. Akansha Tripathi* JR *Corresponding Author

Dr KPS Malik M.S Professor and H.O.D

ABSTRACT

AIM:- To find out the prevalence of dry eye in patients undergoing cataract surgery in tertiary eye center .

MATERIALS AND METHODS:-60 patients undergoing cataract surgery were taken from OPD of Subharti Hospital, Meerut. Patients above 45 years of age and who fulfilling our criteria were included in study. TBUT ,Schirmer's , Corneal fluorescein stain test were done. Patients having 2 positive tests out of 3 were labeled as dry eye patients and prevalence was calculated.

OBSERVATIONS AND RESULTS :- Mean age of patients was 58.8±6.92 yrs. Out of 60 patient,11 patients had dry eye therefore prevalence of dry eye was found to be 18.3%.

CONCLUSION:- Dry eye is an under diagnosed and chronic disorder of the ocular surface in the patients undergoing cataract surgery .

KEYWORDS

Dry eye , Schirmer 1 , TBUT (Tear breakup time), Corneal fluorescein

INTRODUCTION:- Dry eye is 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. Between 14% and 33% of the population worldwide suffers from dry eye, making it a significant public health problem[1]. Up to 25% of patients consulting eye care practitioners present with dry eye symptoms[2] , therefore it is one of the most important factors influencing quality of life in elderly patients. The symptoms of dry eye are itching , sandy - gritty sensations , tiredness , pain , redness , pressure and photophobia . A high proportion of cataract patients who are candidates for surgery have dry eye , further there are evidences suggesting aggravation or initiation of dry eye following the cataract surgery [3-5] . Thus in spite of a perfect cataract surgery patients may remain dissatisfied due to symptoms of dry eye . Therefore keeping in mind the association between cataract surgery and dry eye, the principal objective of the study is to determine the prevalence of dry eye in patient undergoing cataract surgery in tertiary eye center.

AIMS AND OBJECTIVES

To find out the prevalence of dry eye in patients undergoing cataract surgery in tertiary eye center.

MATERIALS AND METHODS

In this study, 60 patients undergoing cataract surgery were taken from Outpatient Department of Ophthalmology, Chattrapati Shivaji Subharti Hospital (CSSH), Meerut. Patients above 45 years of age and who fulfilled the inclusion and exclusion criteria of study were included in the study.

Informed consent was taken from all patients before enrolling them in the study. A complete ocular examination including visual acuity, intra ocular pressure, anterior segment slit lamp examination of lid margins , tear meniscus , conjunctiva, cornea and tear film was done. Any fundus pathology was ruled out with the help of slit lamp biomicroscope and indirect ophthalmoscope.

Then Tear Break Up Time (TBUT) ,Schirmer's 1 test , Corneal fluorescein stain test were done. Patients having at least 2 positive tests out of 3 were labeled as dry eye patients.

Inclusion Criteria:

1) Patients equal to and above 45 years undergoing cataract surgery
2) Wetting of Whatman No. 41 filter paper strips < 10 mm after 5 minutes was considered significant (Schirmer I).
3) TBUT < 10 seconds was considered significant.

Exclusion Criteria:

1. Age < 45 years.
2. Cataract secondary to any etiology
3. Pre-existing ocular allergies, glaucoma, disorders of lids, conjunctiva, cornea, sclera and any fundus pathology .
4. Chemical burns, radiation.
5. Use of contact lens.
6. Patients on chronic ocular medications.
7. Patients who have undergone corneal refractive surgery.

Ocular Examination:-

TEAR BREAK UP TIME(TBUT) :-The patient is then asked to blink 3 times after staining it with flourescein strip, and then to look straight ahead without any blink. The tear film is observed using a cobalt blue filter under wide beam illumination at the slit-lamp. The interval between the last blink and the appearance of the first randomly appeared corneal dry spot is measured as TBUT. A value less than 10 seconds is regarded as abnormal.

Grade 1 variable
Grade 2 = 10 sec
Grade 3 = 5 sec
Grade 4 immediate[6].

SCHIRMER'S 1 TEST (S1T) :- The test is performed under natural lighting conditions without topical anesthesia. Schirmer's test strip, is placed in the lower fornix, over the junction of the middle and lateral thirds of the lower eyelid, and left in place for 5 minutes while the eyes are closed. The distance moistened is directly read off the scale on the strip itself. A reading of less than 10 mm is considered abnormal .

Grade 1 variable
Grade 2= 10mm
Grade 3 = 5mm
Grade 4 = 2mm[6].

CORNEAL FLOURESCEIN STAINING :- The Corneal fluorescein staining is evaluated by using fluorescein strip in contact with the lower fornix of the eye. After 3 blinks, the subjects are asked to look straight ahead without any blink. The cornea is assessed under the wide beam cobalt blue light of the biomicroscope. Staining in any part of the cornea is considered abnormal.

The grading was according to NEI grading system adopted in DEWS (2007) [6]

Grade 1= no staining (Score 0-3)
Grade 2=variable (Score 1-8)
Grade3 =central (Score 9-14)
Grade 4 =severe punctate erosion (Score 14-15)

OBSERVATIONS AND RESULTS

- Total No. of patients = 60
- The age group was between 45 to 75 years
- Mean age of patients was 58.8±6.92 yrs
- Majority were males 34 (56.66%) ,therefore male to female ratio is 1.30:1

TABLE 1: GRADING OF DRY EYE ACCORDING TO SCHIRMER'S 1 TEST

Severity of dry eye	Schirmer's Grading	No. of patients	Percentage (%)
Mild	≤10mm (Grade 2)	5	8.33%
Moderate	≤ 5mm(Grade 3)	3	5%
Severe	≤ 2mm(Grade 4)	7	11.66%
Total		15	25%

- Out of 60 patients in our study , Schirmer 1 was positive in 15 (25%) patients

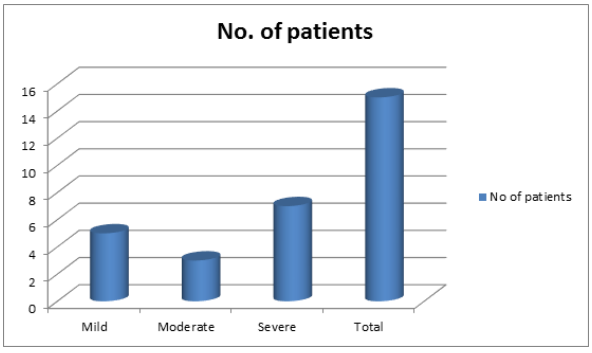


TABLE 2: GRADING OF DRY EYE ACCORDING TO TEAR FILM BREAK UP TIME (TBUT)

Severity of dry eye	TBUT Grading	No. of patients	Percentage %
Mild	≤10 sec (Grade 2)	21	35%
Moderate	≤ 5 sec (Grade 3)	9	15%
Severe	0 sec (Grade 4)	0	0%
Total		30	50%

- Out of 60 patients TBUT was positive

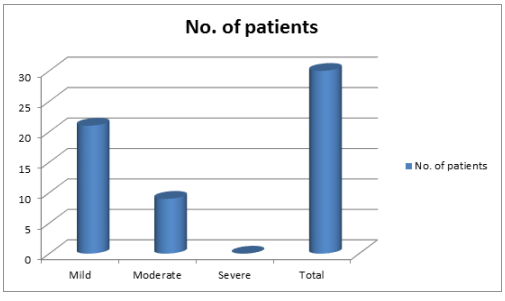
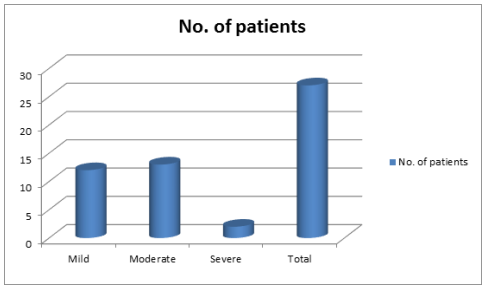


TABLE 3: GRADING OF DRY EYE ACCORING TO CORNEAL FLOURESCEIN STAINING

Grading of dry eye	Corneal Flourescein grading	No. of patients	Percentage %
Mild	Variable (Grade 2)	12	20%
Moderate	Central (Grade 3)	13	21.66%
Severe	Severe punctate erosion (Grade 4)	2	3.33%
Total		27	45%

- Out of total 60 patients corneal fluorescein was positive in 27 patients(45%) .



CALCULATION OF PREVELANCE OF DRY EYE

- Among 60 patients included in our study , 11 had dry eye according to our criteria i.e. at least two test should be positive out of three.
- Therefore the prevalence of dry eye in our study was found to be 18.3%.
- Prevalence of dry eye was seen more in females (11.66%) as compared to males (6.66%).
- Prevalence of dry eye was maximum in the age group between 56-65 (6.66%) and 66-75 years(6.66%).

• DISCUSSION

In the present study the maximum number of patients 50% were in the age groups of 56-65 years. Mean age of the patients in our study was 58.8±6.92 years. Patients aged 56-65 and 66-75 showed a peak with 6.66% prevalence each, which is consistent with findings of Patel SJ et al[7],Brewitt H et al[8], TsengSCG et al[9].This age group is maximally exposed to external environment. The age incidence in our study was also similar to Mc Carty CA et al[10] and Yazdani C[11] who have also postulated the increasing prevalence of dry eye with age.

The study comprised of 34 (56.66%) males and 26 (43.33%) females .Prevalence was more in females(11.66%) as compared to males (6.66%) in our study similar to studies by McCarty CA et al[10], Yazdani C[11] ,Schaumberg DA et al[12] who found a higher prevalence of dry eye in females especially postmenopausal or of premenopausal age. This preponderance may be due to the fact that females work both inside the house and outside in the fields in the North Indian region so they are more exposed both to the kitchen smoke, dust and outside environmental factors. Similar results were seen by Gupta N et al[13], SK Gupta et al[14],Sahai A et al [15].

Past studies suggest that dry eye prevalence ranges from 6.7% to 46.2%. The dry eye prevalence in our study was 18.3% which falls within this range. Our results are similar to studies done by AJ lee et al[17] in Indonesia (27.5%) .Our results are also consistent with the studies which are done in India eg Basak et al[18] who found prevalence of 26% in West Bengal and Gupta N et al[13] found prevalence in New Delhi to be 29.25%.However the study done by Chandra R et al[16] showed higher prevalence of 48.5%.

CONCLUSION

Dry eye is an under diagnosed disease and a chronic disorder of the ocular surface that substantially affect the quality of life of an individual. Its manifestations appear or are aggravated following cataract surgery in most patients. Overall prevalence of dry eye in our area in the patients undergoing cataract surgery came to be 18.3% which is comparable with other studies. Prevalence of dry eye increased with increasing age and was seen more in females as compared to males.

BIBLIOGRAPHY

1. The epidemiology of dry eye disease :Report of the Epidemiology Subcommitee of the International Dry eye Work Shop. Ocul Surf 2007;5:93-107.
2. Moss S,Klein R , Klein B . Prevelance of and risk factors for dry eye syndrome. Arch Opthalmol 2000;118:1264-8.
3. Hardten D R. Dry eye disease in patients after cataract surgery. Cornea 2008;27(7): 855.
4. Ram J, Gupta A, Brar G et al. Outcomes of phacoemulsification in patients with dry eye. J.CataractRefract.Surg2002 ;28(8): 1386-9.
5. Ram J, Sharma A, Pandav S et al. Cataract surgery in patients with dry eyes. J.CataractRefract.Surg 1998; 24(8):1119-24.
6. The definition and classification of dry eye disease: report of the Definition and Classification Subcommittee of the International Dry Eye WorkShop (2007). Ocul Surf2007;5(2):75–92.
7. Patel SJ, Lundy DC. Ocular manifestations of autoimmune disease. Am FamPhysician 2002; 66(6):991-8.
8. Brewitt H, Sistani F. Dry eye disease : The scale of problem. Survey Ophthalmology 2001;45(2):S199-202.
9. TsengSCG. Topical tretinoin treatment for dry eye disorders. In: Smolin G &Friedianender MH, editors.The dry eye. International Ophthalmology Clinical 1987; 27 (1): 47-53
10. McCarty C. A, Bansal A. K ,Livingston P. M et al. The epidemiology of dry eye in Melbourne, Australia. Ophthalmology 1998;105(6): 1114-9.
11. Yazdani C, Mc Laughlin T, Smeeding JE et al. Prevalence of treated dry eye disease in a managed care population. ClinTher 2001; 23:1672-82
12. Schaumberg D. A, Dana R, Buring J. E et al . Prevalence of dry eye disease among US men: estimates from the physicians' health studies. Archives of Ophthalmology2009;127(6):763–8.
13. Gupta N, Prasad I, Jain R et al. Estimating the prevalence of dry eye among Indian patients attending a tertiary ophthalmology clinic.Ann Trop Med Parasitol 2010 Apr;104(3):247-55.
14. Gupta SK, Gupta V, Joshi S et al. Subclinically dry eyes in urban Delhi: an impact of air pollution. Ophthalmologica 2002; 216: 368-71.
15. Sahai A, Malik P .Dry Eye. Prevalence and Attributable Risk Factors in a Hospital-Based Population. Indian J Ophthalmol 2005;53:87-91.
16. Chandra M.R,Reddy G, Kumar P.K et al. Dry Eye Syndrome: Undiagnosed Entity. Journal of Evolution of Medical and Dental Sciences 2015;4(3):433-41.

17. A J Lee, J Lee, S-M Saw et al .Prevalence and risk factors associated with dry eye symptoms: a population based study in Indonesia. Br J Ophthalmol 2002 Dec; 86(12): 1347–51.
18. Basak SK, Pal PP, Basak S et al.Prevalence of dry eye diseases in hospital-based population in West Bengal, Eastern India.J Indian Med Assoc 2012 Nov;110(11):789-94.