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## A study to show prevalence of dry eye disease among postmenopausal women in a second tier Government Hospital in West Bengal, India

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### Abstract

**Background:** Dry eye disease or keratoconjunctivitis sicca refers to a wide variation of disorders which causes a decrease in secretion of tears<sup>1</sup> due to dysfunctional anatomy or increased evaporation of the formed tear film.

**Objective:** The primary purpose of this study is to open establish increased occurrence of DED in Postmenopausal woman in a second tier Government Hospital in WB, India.

**Methodology:** Study design: This is a cross sectional clinical study. Study place: It was conducted in outpatient department of Obstetrics and Gynaecology and outpatient department of ophthalmology in T.L.J.S.G Hospital, Howrah, West Bengal. Period of study: Data collection and analysis time took over a period of 6 months. Sample size: In this study total 500 eyes were selected as a sample size. Schirmer's test was done on selected patients without topical anaesthesia. Thus avoiding any chance of alteration in result. Whatman's Filter Paper No. 41 was used to assess the lateral part of lower eyelid. The filter paper was removed after 5 minutes and the results were taken.

**Results:** \*Menopause and its association with dry eye is a very common problem. In the study total 500 patients were taken among which 182 was found to have dry eye. Thus prevalence is 33.4%. \*Among those 182 woman majority were found to be in age group of person above 65 years. As other factors were in exclusion criteria, so we can highlighted postmenopause as an important factor here.\*Also it was noted that different individuals had different percentage of presenting symptom among which redness & grittiness are often experienced by the patients. There are various studies showing increased prevalence of dry eye in old age person. Several data suggest that gender & sex hormone play a quiet important role in this process.

**Conclusion:** As there is decrease in level of sex hormone after menopause it could possibly cause some physiological changes in lacrimal & meibomian glands thus affecting the mechanism of tear film production. In our study, we establish such a correlation.

**Keywords:** DED, PMW, DES

### Introduction

Dry eye disease or keratoconjunctivitis sicca refers to a wide variation of disorders which causes a decrease in secretion of tears<sup>[1]</sup> due to dysfunctional anatomy or increased evaporation of the formed tear film. The international dry eye work shop<sup>[1]</sup> defines DES as a multifactorial heterogeneous disease of the tear film and ocular surface that result in discomfort, visual acuity disturbance and tear film instability<sup>[3]</sup>. Though it sounds minor, actually it is potent enough to cause moderate to severe ocular discomfort<sup>[4]</sup> along with fatigue eye pain in such an extent that it may hamper a psychological or normal social life of an individual. The prevalence rate of dry eye disease ranges from 7% to 33%<sup>[5,6]</sup>. Postmenopausal women are commonly affected by dry eye disorder<sup>[7,8]</sup>. Sex hormones play an important role in maintenance of normal functioning & integrity of mei bomian gland. In case of Postmenopausal Syndrome as there is decrease in sex hormone level, it causes inflammation and malfunctioning of lacrimal gland<sup>1</sup>. Menopause is associated with alteration in different hormonal secretions in our body as a result of which it can bring changes in some of our ocular structure<sup>[1]</sup>.

### Aims & Objective

The primary purpose of this study is to establish increased occurrence of DED in Postmenopausal woman in an second tier Government Hospital in WB.

## Materials & Methods

### Study design

This is a cross sectional clinical study.

### Study place

It was conducted in outpatient department of Obstetrics and Gynaecology and outpatient department of ophthalmology in T.L.J.S.G Hospital, Howrah, West Bengal, India. Period of study: Data collection and analysis time took over a period of 6 months.

### Sample size

In this study total 500 eyes were selected as a sample size.

### Inclusion criteria

1. Sex – female
2. Age – 45 to 70 yrs.
3. Patient attending OPD in T.L. J.S.G Hospital.
4. Symptoms – Itching, Irritation, dryness, pain, foreign body sensation.

### Exclusion criteria

1. Patient below 45 yrs.
2. Any previous history of corneal disease like injury, burn, ulceration.
3. Any history of exposure keratitis.
4. Previous surgery like keratoplasty, eye lid surgeries.
5. History of trauma.
6. Contact lens wearer.
7. Diabetic
8. On medication of dry eye.

### Test done

1. Visual acuity testing using snellen chart
2. Anterior segment examination.
3. Intraocular pressure measurement.
4. Schirmer test.

### Methods

Schirmer test was done on selected patients without topical anaesthesia. Thus avoiding any chance of alteration in result. Whatmans Filter Paper No. 41 was used to assess the lateral part of lower eyelid. The filter paper was removed after 5 minutes and the results were taken.

### Interpretation

1. <5mm – Pathological
2. 5 – 10 mm – Suspicious
3. > 10 mm – Normal

Among the result on patient with Schirmer value < 5mm was taken.

### Results

**Table 1:** Percentage of Patient with dry eye

Age of patient	Percentage of patient with dry eye	P value
45-50	35	
51 – 55	30	
- 55 – 60	42	0.971
60 – 65	31	
>65	44	

**Table 2:** Symptoms of dry eye

		Never	Sometimes	Often
1	Dryness	18%	68%	4%
2	Grittiness	42%	34%	24%
3	Redness	43%	32%	25%
4	Burning	40%	49%	11%

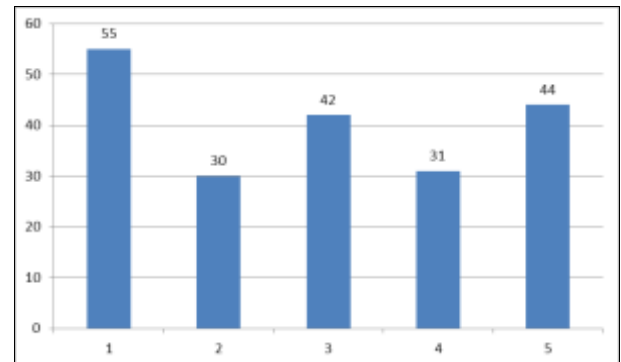
### Type of DED found

Aqueous deficiency – 20.2%

Tear Film deficiency – 18.18%

Mixed – 61.62%

### Prevalence Chart No. of Patient



**Fig 1:** Age

### Discussions

Dry eye is a frequently occurring debilitating and disturbing disease with many causative or risk factors like –

1. Age – more in old age;
2. Sex – common in female;
3. Any history of exposure to trauma;
4. Exposure Keratitis due to any cause;
5. Occupational cause specially among those who are prone to outdoor work in dry weather;
6. Also among professionals using gadgets for long time;

- Menopause and its association with dry eye is a very common problem. In the study total 500 patients were taken among which 182 was found to have dry eye. Thus prevalence is 33.4%.
- Among those 182 woman majority were found to be in age group of person above 65 years. As other factors were in exclusion criteria, so we can highlighted post menopause as an important factor here.
- Also it was noted that different individuals had different percentage of presenting symptom among which redness & grittiness are often experienced by the patients.
- There are various studies showing increased prevalence of dry eye in old age person. Several data suggest that gender & sex hormone play a quiet important role in this process. As there is decrease in level of sex hormone after menopause it could possibly cause some physiological changes in lacrimal & meibomian glands thus effecting the mechanism of tear film production. In our study too we establish such a correlation.

**Limitation:** The only drawback of our study is that we could not assess the exact hormone level in those patients due to some specific constraint factor which would directly correlate the hormone level disfunction with DED. However we could

assume that all patient was postmenopausal so likely having altered sex hormone function.

### Conclusion

As postmenopausal symptom causes various discomfort in a patient, by seeing the prevalence of DED in postmenopausal age group in our study, it should be an inevitable check-up for dry eye disease in these age group. May be such database with create further improvement in approach and symptomatic relief in these patients by proper treatment.

### Conflict of Interest

Not available

### Financial Support

Not available

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