

Prevalence Of Dry Eye In Postmenopausal Women Measured By Schirmer Test At Tertiary Care Hospital, Gujarat, India.

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ABSTRACT

BACKGROUND: The study was designed to evaluate dry eye in postmenopausal women weather symptomatic or asymptomatic by schirmer test to calculate overall burden of dry eye in postmenopausal women. It also helps to diagnose severity of disease and also helps at which stage it requires treatment. **MATERIAL AND METHOD:** In this prospective study 150 patients after confirmation of menopause from history included. After taking written consent, patients were asked for any ocular symptoms of dry eye by questionnaires and then after making them comfortable schirmer test was done with anaesthetic agent. Prior ethics committee approval was taken. **RESULT:** Study revealed that dry eye is most common problem in postmenopausal women. Overall 35% of postmenopausal women are diagnosed to be suffering from dry eye in our study. Severity of dry eye also increases with increasing age. **CONCLUSION:** Study shows mild asymptomatic dry eye forms the major part of dry eye disease in postmenopausal women population in India. Patients may present with dry eye in absence of any symptoms/complains but ocular examination may reveal signs of dryness and sometimes patient may have only symptoms/complains in absence of any signs of dryness. With early diagnosis and treatment of dry eye in postmenopausal women quality of life can be improved and burdon of blindness due to severe dry eye disease can be reduced.

Key Words: Dry eye, postmenopausal women, schirmer test, prevalence.

INTRODUCTION

Dry eyes defined as “a disorder of the tearfilm due to tear deficiency or excessive tear evaporation which causes damage to interpalpebral ocular surface and is associated with symptoms of ocular discomfort.”¹ Dry eye syndrome also known as keratoconjunctivitis sicca. It is a multifactorial diseases. Varied group of conditions that causes tearfilm disturbances and ocular surface damage.² Few large epidemiological studies have reported higher prevalence of dry eye in old age specially age more then 50 years.³⁻⁵ Several studies have been done to establish relationship between menopause and dry eye.⁷⁻⁹ Despite the gain in knowledge of pathogenic factors for the development of dry eye due to lack of

proper test for evaluation of dry eye remains unclear. There is no doubt that dry eye is that much serious disease that it may affect patient’s quality of life. In daily out patient department approximately 25-30% patients are diagnosed to have mild to moderate dry eye. Dry eye may create problem in patient’s day to day activity and in severe case may cause blindness. It has been proved that oestrogen receptors are present on lacrimal gland, goblet cells of palpebral and bulbar conjunctiva, meibomian glands, lids and other ocular surface. So the hormonal imbalance in postmenopausal phase may cause dysfunction of these structures of the eye which may be responsible for dry eye in postmenopausal women. There are mainly two types of dry eye 1. Aqueous deficiency dry resulting from lacrimal gland dysfunction and 2. evaporative dry eye resulting from excessive evaporation due to meibomian gland dysfunction. Thought in postmenopausal women both types of dry eye or mixed type of dry eye present. Sometimes the dry eye is most commonly overlooked sign. Treatment

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mainly include the lubricant drops which mimics artificial tears for mild to moderate dry eyes. Other modalities of treatment includes sodium hualuronate, low dose steroids as anti-inflammatory therapy for short duration, cyclosporine drops, omega 3 fatty acids and antioxidants, punctual occlusion and tarsorrhaphy as last resort.

MATERIAL AND METHOD

In total 150 patients have participated in study. Patient is explained about study and if she gives consent to take part in study, patient's status of menopause will be confirmed from history. Patients having history of menopause of one year and more will be included up to the age of 65 years in absence of any other causes of absent menstruation. Patient's details were noted namely name, age, age at menopause, history of comorbid conditions like HT, DM, hypothyroidism, arthritis, sjogren's syndrome, lupus etc.,. Patients were also asked for contact lens wear , and any refractive surgery, any skin diseases or any drug allergy. Nasolacrimal drainage system block will be ruled out by sac syringing. Then patient is asked for ocular symptoms of dry eye like eye fatigue, foreignbody sensation, scratchy feeling, burning sensation, dry sensation, discomfort, watering, itching, episodes of blurred vision which gets improved by blinking, redness, light sensitivity , stinging, and stringy discharge, decreased tolerance to any activity that requires sustain visual attention like computer work or reading or watching television. The patient undergoes for objective tests like best corrected visual acuity measurement, slit lamp examination for lid margin, meibomian gland function and any ocular changes related to dry eye. Then after patient become comfortable she undergoes for schirmer test. In this test anaesthetic agent was instilled in both eyes and schirmer strip is applied at the junction of lateral one third and medial two third of lower lid. Patient is allowed to normal blink. After five minutes reading of wetting of strips were noted. This will measure the basal tear production.(John's test)¹⁵

INCLUSION CRITERIA

We have randomly enrolled 150 patients attending our daily OPD with history of menopause at least of one year duration. Women up to the age of 65 years with or without previous history of dry eye and who are agree to participate in study are enrolled.

EXCLUSION CRITERIA

Patients with age more then 65 years were excluded. Patients with comorbid conditions like HT, DM, Hypothyroidism, arthritis will be excluded. Patients with autoimmune diseases like sjogren's syndrome, lupus, gout, etc., will be excluded from study. Having history of contact lens wear, any refractive surgery, any ocular surgery within past six months, any skin diseases, Nasolacrimal drainage block, drug allergy will not be enrolled in study. Patients who refuses to take part in study or who are physically handicap are not allowed to take part in study.

RESULT

Our study shows that 35% of postmenopausal women attending daily OPD suffer from dry eye. This figure may be high as in mild cases it may not be noticed by patients. As seen in table-1 burden of dry eye increases with increase in age. In the early stage of menopause it was 14.28% of postmenopausal women are suffering from dry eye. While at the age of around 61-65 years 60.60% females are suffering from dry eye. As seen in Table-3 out of schirmer positive patients 38.46% does not have any symptoms of dry eye. So detailed evaluation of dry eye is necessary in OPD as this patients may progress and turn to symptoms positive. And as seen in Table-4 out of total patients examined 38% are symptoms positive while only 35% are schirmer positive. Studies from different region of India also shows significant high level of dry eye diseases in postmenopausal women as seen in Table-2. In delhi it has been recorded

27%, in West Bengal it is 51.9%, in Rajsthan it is 22.8% and in Karnataka it has recorded 60% females of postmenopausal phase are suffering from dry eye.¹⁰⁻¹⁴

CONCLUSION

Anterior exposed part of the eye is covered by tearfilm. It acts as first refractive media of the eye. Tear film acts as lubricating for the ocular surface to provide smooth movement of lids over anterior ocular surface, provides nutrition to the cornea which is avascular structure, flushes the debris and foreignbody and it has antibacterial property also. 25% of patients attending daily OPD are of dry eye. Postmenopausal dry eye has now evolved as significant problem in recent years as prevalence of same is very high and it is difficult to treat condition in late stages. Reason being hormonal changes, underdiagnosis of mild to moderate cases and poor compliance of patients in this age group, other environmental factors and poor nutrition in India. Patients attending gynaecological OPD for postmenopausal symptoms should be screened and advised to go for ocular examination for dry eye as it is easy to treat in early stage and blinding late stage can be prevented. But only schirmer test is not enough to diagnose the dry eye. It can diagnose only aqueous deficiency dry eye. While in menopause both aqueous deficiency and evaporative dry eye plays a role. Anther drawback of our study is we have applied schirmer test for five minute that will give underestimation of dry eye. Instead we can apply it for one minute and multiply the wetting measurement three times and that will account for wetting of tear strip for five minutes. (modified schirmer -1).¹⁵ That may give more accurate results. In India other environmental factors like sunlight exposure, air pollution, low humidity etc., and undernutrition also plays a part in dry eye that can not be

excluded. Symptoms of the dry eye may overlap with the symptoms of the other ocular diseases and so dry eye may be under diagnosed. Other objective tests for dry eye like tear film break up time, corneal staining, tear film assessment, conjunctival staining should also required to be included for dry eye evaluation. One more factor i.e. measurement of hormone level in blood may add in diagnosing correlation between menopause and dry eye.⁶

CONFLICT OF INTEREST:NONE

Table1: Percentage of dry eye patients in our study

Age	No. of patients	Out of this dry eye patients(schirmer test positive)	% of dry eye
40-45	28	4	14.28%
46-50	32	6	18.75%
51-55	32	9	28.12%
56-60	25	13	52%
61-65	33	20	60.60%

Table2: Comparison with different region of India

Different region of India	% of dry eye in postmenopausal women
Gujrat	35%
Delhi	27%
West Bengal	51.9%
Rajsthan	22.8%
Karnataka	60%

Table3: Distribution of symptoms in schirmer positive patients

Total no. of dry eye patient	Symptoms present	Symptoms absent
52	32(61.53%)	20(38.46%)

Table4: Distribution of symptoms in total no. of patients

Total no. of patient	Symptoms present	Symptoms absent
150	57(38%)	93(62%)

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