

PREVALENCE OF DRY EYE IN POST-MENOPAUSAL WOMENM. R. Pujari¹, Kavita Salagar², Sheetal N. Bagare³**HOW TO CITE THIS ARTICLE:**

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ABSTRACT: Dry eye refers to a heterogeneous group of conditions all characterized by inadequate lubrication of ocular surface. Dry eye is a potentially serious and chronic condition. It may severely limit a person's activity, and in extreme cases cause blindness. Postmenopausal dry eye syndrome has frustrated patients, researchers and clinicians due to the paucity of successful treatment options and difficulty in assessing efficacy of treatment modalities. Hence early detection and treatment is necessary. **AIM:** This study is to assess the prevalence of dry eye in postmenopausal women to prevent complications by early detection and management. **MATERIAL AND METHODS:** In this prospective study, 100 subjects were included in the study. Informed written consent was obtained from all patients. Ethical committee approval was taken. The study was conducted in Basaweshwar teaching and general hospital (MR Medical college) Kalburgi Karnataka between January 2014 to June 2014. Hundred postmenopausal women were categorized based on age of the patients into three groups: Group 1: 45-55 years, Group 2: 55-65 years, Group 3: 65-75 years. They were also classified based on: 1.Occupation, 2.Rural/urban dwelling, 3. Laterality of dry eye. **RESULTS:** In our study, most commonly dry eye manifested in 65-75 years age group(66.6)%, and more commonly seen in rural population(65%), and in people with outdoor occupation in all age group, and bilateral in all age group. **CONCLUSION:** Our study was compared with other studies on dry eye, and results were found to be in comparison with them. Hence dry eye needs to be periodically evaluated and to be treated accordingly. **KEYWORDS:** Dry eye, Post menopause.

INTRODUCTION: The National Eye Institute on Clinical Trials in Dry Eyes defined dry eye as "a disorder of the tear film due to tear deficiency or excessive tear evaporation, which causes damage to the inter-palpebral ocular surface and is associated with symptoms of ocular discomfort"^[1]. It refers to a heterogenous group of conditions all characterized by inadequate lubrication of ocular surface. Although it may sound like a minor annoyance, dry eye is a potentially serious and chronic condition. It may severely limit a person's activity, and in extreme cases, cause blindness. Various studies have shown that postmenopausal dry eye is clearly not limited to aqueous deficiency and inflammatory changes of the ocular surface and lacrimal gland. Oestrogen deficiency may lead to sebaceous gland alteration, so further destabilization of the tear film occurs due to meibomian gland dysfunction. Studies have shown that oestrogen receptor mRNA are present in the lacrimal gland, meibomian gland, lids, palpebral and bulbar conjunctiva, cornea and other anterior ocular surfaces. Their presence in the ocular structures and the observation that dry eye syndrome is prevalent in the menopausal and perimenopausal population implies that tear film function is under a complex hormonal influence. Most common symptoms in patients attaining menopause are hot flushes, mood fluctuations, vaginal dryness, and night sweats.

Dry eye is one of the most commonly overlooked sign of menopause. The hallmark of treatment has been tear replacement therapy. Efforts have focused on artificial lubricants, which mimic the human tear film.

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Criteria for Selection of Patients: Postmenopausal women who had attained menopause at least 1 year ago before visiting our outpatient department with various symptoms of dry eye and later diagnosed to have abnormal tests and signs of dry eye were included in this study. Patients with systemic co morbidities–Hypertension, Diabetes mellitus, Hypothyroidism, autoimmune diseases, local ocular conditions causing dry eye, ocular infections with extensive corneal or conjunctival pathology, contact lens users, patients who underwent ocular surgery in the last 6 months before presentation were excluded from the study.

Patient details were noted namely patient name, age, age at menopause, occupational history, area of dwelling rural/urban, history of co morbid conditions–Hypertension, Diabetes, Hypothyroidism. Ocular symptomatology included ocular fatigue, foreign body sensation, dry sensation, discomfort, watering, itching, temporary blurred vision (improved on blinking), redness and burning/stinging sensation. Laterality of symptoms was noted. Objective tests done were visual acuity, slit lamp examination for assessment of lid margins, corneal and conjunctival surface: Conjunctival and corneal Xerosis, corneal punctate lesions, corneal erosions, tear film meniscus, schirmer's test, tear film break up time. For schirmer's test, a standard Schirmer's strip was placed over the lateral one-third of lower lid after instilling a drop of Pro-paracrine 0.5%. After five minutes, the level of strip wetting (in millimetres) was noted. Tear Film Break up Time Test procedure involves 2% fluorescein strip moistened and placed in the lateral one-third of lower lid in a non-anaesthetised eye and patient was asked to blink only once or twice to avoid pooling of fluorescein, following which the strip was removed. Using the cobalt blue light of the slit lamp, the time lapse between the last blink and the appearance of the first randomly distributed dark discontinuity in the fluorescein-stained tear film is the tear break up time. Values of less than 10 seconds were considered abnormal. Reading less than ten millimetres wetting was considered as positive Schirmer's test. Patients were treated with tear film supplements-eye drops for day time use, eye ointment night time use, they were advised to increase frequency of blink rate. Follow up was done at 1 month and 5 months.

RESULTS:

Age group	Number of post menopausal women	Number of patients with dry eye	Percentage (%)
45-55 years	14	7	50
55-65 years	50	29	58
65-75 years	36	24	66.6
Total	100	60	60

Table 1: % of dry eye in post-menopausal women

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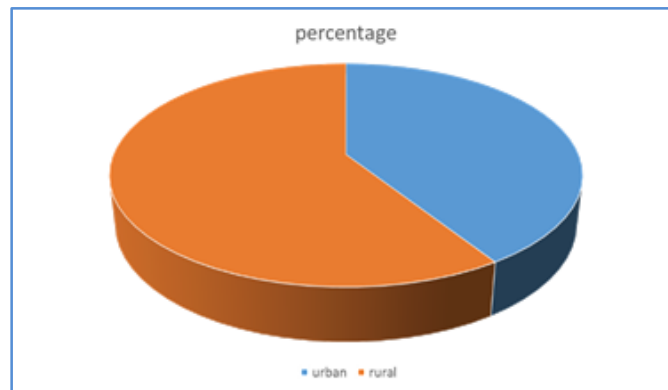


Table 2

Rural population: $39/60=65\%$ **Urban population:** $21/60=35\%$.
Correlation between rural and urban population.

Age group (years)	Number of Patients with Dry eye	Outdoor occupation	Indoor occupation	Percentage of outdoor with dry eye(%)	Percentage of indoor with dry eye(%)
45-55	7	5	2	71.4	28.51
55-65	29	20	9	68.95	31.03
65-75	24	13	11	54.16	45.83
Total	60	38	22	63.3	36.6

Table 3: Effects of occupation

Age group(yrs)	Number of dry eye patients	Bilateral involvement	Unilateral involvement	B/L (%)	U/L(%)
45-55	7	5	2	71.42	28.57
55-65	29	22	7	75.86	24.13
65-75	24	19	5	79.16	20.83
total	60	46	14	76.66	23.33

Table 4: Laterality

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A total of 100 patients were evaluated. Prevalence of dry eye in postmenopausal women in the district of Gulbarga is found to be 60%. Its prevalence also increased as the age increased, which could be attributed to hormonal changes after menopause. It's found to be more common in rural population than urban population (65%). Patients with outdoor occupation, being exposed to the dry hot climate to a greater extent have a higher prevalence of about 63.3%.

DISCUSSION: Exposed part of the ocular globe i.e. the cornea and conjunctiva is covered by a thin fluid, the pre ocular tear film. Functions are to maintain uniform corneal surface, lubrication of ocular surface, flushing debris and foreign bodies, nutrition, anti-bacterial function. Normal volume is 5-10 microliter. Normal production is 1-2 microliter/minute. 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. It is accompanied by increased osmolality of the tear film and inflammation of the ocular surface.^[2] Dry eye disease causes a great discomfort to an individual in terms of daily routine activities and is a rising public health issue.

The common symptoms include foreign body sensation, grittiness, fatigue on reading and watching television, burning sensation, photophobia, blurred vision, fluctuating acuity, reflex tearing (due to increased mucin production), decreased tearing in response to irritation, emotions, ocular pain, symptoms worsen in evening/heat/low humidity. These affect the patient's general performance and quality of life. The corneal complications like punctate epithelial defects, dry spots, mucus plaques, corneal inflammation, infiltration, vascularization, marginal furrows or central corneal crater, thinning, perforation, corneal melting are difficult to treat and often unresponsive to treatment. Irregularities in the corneal surface lead to poor wetting.^[3,4] Slit lamp examination is a very useful in the diagnosis.

The prevalence of dry eye in general population varies from 10.8% to 57.1%^[5] according to previous studies. Women are 1.5 times more prone to dry eye than men, most cases seen after menopause.^[6,7,8] Studies indicated that old age and female sex are established risk factors of Dry eye disease.^[9,10]

Prevalence of dry eye in post-menopausal women in our study was found to be 60%. Other risk factors are air pollution, low humidity, high temperature, sunlight exposure.^[11] Patients with outdoor occupation were found to have a higher prevalence of about 63.3%. Bilateral involvement was found to be more common than unilateral involvement. Dry eye, if left untreated, can lead to increased risk of ocular infection and visual impairment. Thus, early detection of dry eye disease in individuals at risk becomes important to arrest progression and complications that affect corneal transparency and vision loss. Patients with a clinical diagnosis of mild dry eyes may benefit from behavioural and environmental modification which causes preservation of existing tears by reducing evaporation, such as learning to take breaks while reading, lowering the computer monitors to decrease lid aperture, use of protective glasses with side pieces in outdoor setting and humidification of the environment.^[12,13]

Tear film substitutes such as cellulose derivatives [e.g. hydroxyl propyl methyl cellulose (HPMC), carboxyl methyl cellulose], polyvinyl derivatives (e.g. polyvinyl alcohol), chondroitin sulphate, and sodium hyaluronate the mainstay of treatment for mild to moderate dry eye.^[14] Artificial tears provide temporary improvement in symptoms of eye irritation, blurred vision and visual contrast sensitivity.^[15] Anti-inflammatory therapy is considered to be the causative therapeutic approach in the treatment of dry eye, since its objective is to interrupt the inflammatory cascade.^[16,17] Severe cases require surgical management like punctal occlusion and tarsorrhaphy.

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Postmenopausal dry eye syndrome has gained importance in the recent years in that the prevalence of the condition is found to be significantly high and once the disease evolves, it is fairly difficult to treat. The reason being physiological hormonal changes during menopause and poor compliance of patients in this age group. Hence, patients presenting to Gynaecology OPD with postmenopausal complaints should also be screened for ocular complaints and referred to ophthalmology OPD to assist early detection and avoid debility and possible blindness due to above mentioned complications.

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