



ORIGINAL RESEARCH PAPER

Ophthalmology

DRY EYE DISEASE IN POSTMENOPAUSAL WOMEN

KEY WORDS:

Dr. Arul Malar

Staff physician, KKWomens and Children's Hospital, 100 Burkit Timah road, Singapore-229899.

Dr. J. Arumaikannu

MD, DGO, Consultant Gynaecologist, PRG Hospital, Ginge-604202, Villupuram District, Tamil nadu, India.

ABSTRACT

Aim: The aim of this study is to assess the prevalence of dry eyes among postmenopausal women. **Materials And Methods:** All postmenopausal women presented to PRG hospital, Ginge, South India from April 2021 to March 2022 were evaluated for dry eye disease (DED) along with a complete history, ocular examination including visual acuity using Snellen's chart, Slit lamp examination of anterior segment, tear film breakup time (TBUT) and Shirmers test. **Result:** Out of the 77 postmenopausal women, 53 of them had DED. Most of the patients belonged to the age group 56-60 (25.97%) and 61-65 years (23.37%). 22.64% of patients had severe degree of DED. **Conclusion:** DED remains under recognized in the postmenopausal age group. Although it is not life-threatening, it substantially compromises the quality of life. Hence, it is essential for health care workers to include ophthalmological examination as an integral part of evaluation in postmenopausal women.

INTRODUCTION:

DED is a multifactorial disease of tears and ocular surface that results in symptoms of discomfort, visual disturbance, tear film instability with potential damage to the ocular surface. This can cause debilitating symptoms including burning, foreign body sensation and decreased vision, affecting the activities of daily living. Different studies have found a relatively wide range of prevalence and the estimates range from 7% to 33%^{8,11}. Postmenopausal women have higher incidence of DED.

MATERIALS AND METHODS:

This is a hospital based descriptive study where postmenopausal women were evaluated prospectively. The study was carried out at the PRG hospital, Ginge, South India from April 2021 to March 2022. A thorough menopausal and ocular history were obtained. Detailed ocular examination were done, using Snellen chart for visual acuity, the Slit lamp for anterior segment examination and to identify the tear film breakup time (TBUT) and Shirmers test to identify decreased tear production in aqueous deficiency.

Inclusion Criteria :

All postmenopausal women after at least one year of menopause were enrolled in this study

Exclusion Criteria :

1. Ocular and systemic diseases such as diabetes mellitus, systemic lupus erythematosus and Sjogren's syndrome that affect tear secretion and quality, eyelid diseases such as trichiasis, eye lid eversion, ptosis and conjunctival diseases such as acute and chronic infectious conjunctivitis, allergic conjunctivitis and conjunctival calculus were excluded.
2. History of eye trauma within 6 months and
3. History of eye surgery within 6 months, were also excluded from this study

RESULTS :

Total number of postmenopausal women enrolled for this study was 77. Out of which, 53 women had DED. Most of the patients belonged to age group 56-60 years (25.97%) and 61-65 years (23.37%). With respect to the duration of menopause, maximum number of patients (41 % Patients) having DED had a duration of menopause ranging between 5-10 years. About 22.64 % of patients had severe degree of DED. Severe DED correlated with the increasing age and increasing duration of menopause. Majority of patients with DED had symptoms such as dryness, itchiness, redness and foreign body sensation.

Table 1: Frequency of dry eye in postmenopausal women

Age group (years)	Postmenopausal women		Patients with dry eye	
	No	%	No	%
46-50	8	10.38	3	37.5
51-55	16	20.77	10	62.5
56-60	20	25.97	17	85
61-65	18	23.37	15	83.33
>66	15	19.48	8	53.33
Total	77	100	53	68.83

Table 2: Distribution according to types of dry eye disease

Types of DED	No	%
Aqueous deficiency	7	13.20
Tear film deficiency	20	37.73
Mixed	26	49.05

Table3: Distribution according to severity of dry eye disease

Severity of DED	No	%
Mild (episodic)	15	28.30
Moderate (Chronic dry eye)	26	49.05
Severe dry eye	9	16.98
Most severe (disabling dry eye)	3	5.66

DISCUSSION

Dry eye disease (DED) is not a disease entity, but a symptom complex occurring as sequelae of deficiency or abnormality of the tear film. DED affects the general performance and the quality of life. Prevalence of dry eye in the general population in India varies from 18.4% to 54.3%. The prevalence of DED in postmenopausal women in India is 52%. According to Titaly Js at all¹ the prevalence of DED in North India is 32% and based on symptoms 81% had severe DED. According to Rao Donthineni et al² the incidence of DED in south India is reported to be 1.46%. The prevalence of DED is high in Indian postmenopausal women. The prevalence in various states of India is as follows; West Bengal (51.9%), Delhi (27%) and in Karnataka 60%³⁻⁷. The prevalence of DED in post menopausal women in our study was found to be 68.83%. Our study also showed that 7 patients (13.20%) had aqueous deficiency type of dry eye, 20 patients (37.73%) had tear film instability type of dry eye and 26 patients (49.05%) had mixed type of dry eye.

According to the severity of dry eye, winter et al reported 21.6% of cases with tear deficiency type of dry eye and 45.3% of cases with mixed type of dry eye^{8,9}. In our study, 9 cases (16.98%) showed severe DED, 26 cases (49.05%) showed

moderate DED and 15 cases (28.30%) were with mild symptoms. Greater prevalence of dry eye in postmenopausal women suggests that sex hormones play a role in DED in postmenopausal women. Cynthia et al¹⁰ attributed that deficiency in Oestrogen can lead to reduction in tear production and also cause meibomian gland dysfunction. This indicates that checking the sex hormone levels in postmenopausal women with DED may give insights on hormone replacement therapy, for future management of DED.

CONCLUSION:

DED remains under recognized in the post menopausal age group. Although it is not a life-threatening disorder, it will definitely compromise the quality of life. Alteration of sex hormones plays an important role in the pathophysiology of DED in menopausal women. Often, simple measures such as lubrications may provide immense relief. Only in severe cases, anti-inflammatory, immunomodulatory and rarely surgical interventions are required. Hence, it is essential for health care workers to include ophthalmological evaluation as an integral part of evaluation in postmenopausal women. This will have a substantial impact on improving visual function, daily activities, social and physical functioning, work place productivity and the quality of life.

REFERENCES:

1. Tityal Js, Falera C, Kaur M, Sharma M, Sharma N. Prevalence and risk factor of dry eye disease in north India: Outer surface disease index-based cross-sectional hospital study. *Indian j ophthalmol*, 2018;66:207-11.
2. Rao Donthineni P, kammari P, Shanbag SS, Singh VS, Das VA, Basu S. Incidence, demographics, types and risk factors of dry eye disease in India: Electronic medical records driven big data analytics report/ *Ocul surf*. 2019;17:250-6.
3. Punjari MR, Kavita S, Sheetal N Bagare. Prevalence of dry eye in postmenopausal women. *JEMDS* 2015;4(75):13005-13010.
4. Majumdar M, Khandelwal R, Gangwani T. Comparison of dry eye in postmenopausal women with and without symptoms of dry eye. *JEMDS* 2014; 3(57):129633-12938.
5. Basak SK, Pal PP, Basak S, Bandopadhyay A, Chaudhuri S, Sar S. Prevalence of dry eye disease in hospital based population in West Bengal; Eastern India. *J Indi Med Assoc* 2012; 110(11):789-794
6. Gupta N, Prashad I, Jain R et al. Estimating the prevalence of dry eye among Indian patients attending tertiary ophthalmology clinic. *Ann trop med paracitol*. 2010;104(3):247-255.
7. Sahi A, Malik P. Prevalence and attributable risk factors in a hospital based population. *Indian j ophthalmology* 2005;53(2):87-91
8. Lin PY, Tsai SY, Cheng Cy, Liu JH, Hsu WM. Prevalence of dry eye among elderly Chinese population in Taiwan. The shihpat eye study. *Ophthalmol* 2003;110:1096-101.
9. Versura P, Emilo C campos, Menopause and dry eye. A possible relationship. *Gynecol endocrinol* 2005;20(5):289-298
10. Cynthia Matossian MD, FACS, Marguerite McDonald, MD, FACS, Kendall E. Donaldson MD, MS, Kelly K. Nichols, OD, MPH, PhD Sarah MacIver, OD and Preeya K. Gupta, MD. *Journal of women's health (Larchmt)*. 2019 Apr 1;28(4): 502-514.
11. Mc Carty CA, Bansal AK, Livingston PM, Stanislavsky YL, Taylor HR. The epidemiology of dry eye in Melbourne, Australia. *Ophthalmology* 1998;105: 1114-9.