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Menopause, Hormones and the Eye

How frequently do you discuss eye conditions during menopause-related consultations? I would hazard a guess, hardly ever. Consult any recent textbook on menopause for eye-related problems and you are likely to draw a blank. Yet, during the menopause transition the only symptom directly related to ovarian failure, beyond those related to vasomotor responses or vaginal atrophy, is dry eye!¹

It is time for us to focus attention on the eyes. My purpose here is simply to increase your awareness of some of the eye diseases and dilemmas relating to menopause and sex hormones.

The most frequent eye complaint after menopause is a "feeling of dryness" or problems with tearing.² While the problem increases beyond menopause, the pathogenesis is not fully elucidated. Although there is evidence that estrogen and progestogen therapy (EPT) increases lacrimal secretion,³ and that topical estradiol is of value in the treatment of menopausal keratoconjunctivitis sicca,^{4,5} the situation is not completely clear. There is also some evidence that postmenopausal women receiving estrogen therapy (ET) demonstrate a higher prevalence of dry eye,⁶ and there is an escalating body of literature reflecting an association between androgens and lacrimation.⁷ Secretory function appears to decrease with declining androgen levels. In my opinion, this could be a fine topic for a young, enthusiastic ophthalmologic menopausologist interested in applying for one of the NAMS new investigator research grants.

Increased intraocular pressure (IOP) and potential glaucoma are problems that may lead to blindness. IOP drops during the luteal phase of the reproductive cycle, as well as during pregnancy.^{8,9} Some data suggest that IOP increases beyond menopause.¹⁰ Recently, it was reported that EPT reduced IOP. However, since combined therapy was administered, it was not possible to determine whether the estrogen, the progestogen or both were responsible for the effect.³ IOP is yet another parameter that requires annual monitoring beyond age 50. Ideally, this should be part of a routine eye examination.

Variations in corneal thickness have been implicated in relation to hormonal fluctuations during the reproductive cycle and pregnancy, and with oral contraceptive (OC) or hormone therapy (HT [ET or EPT]) use.³ While there is no clear clinical correlate in relation to this, users of hard contact lenses might note problems of eye irritation after commencement of OCs or HT. There seems to be no evidence for any impact on refractive properties of the eye.

The question of retinovascular disease in relation to menopause and HT is murky.

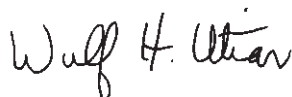
Retinal vein occlusion has an equal incidence in males and females, while the incidence of retinal artery occlusion is higher in males than females, with both peaking in the mid 60s.¹¹ The increased prevalence of venous thromboembolism in users of EPT and OCs is well accepted.

So, what do we do with a patient on ET or EPT who develops retinovascular disease? Prudence suggests a recommendation to discontinue therapy, yet there are observational data demonstrating reduced risk of retinal vein thrombosis in postmenopausal women using exogenous estrogens.¹² It has been suggested that HT not be commenced in women with retinal vein occlusion, but continuing therapy does not appear to be associated with a higher rate of recurrence.¹¹ It would seem to me that a strong indication for HT would need to exist to justify continuing HT under these circumstances.

Animal evidence suggests that estrogen protects against cataract formation,¹³ but there appears to be no sex predilection with aging in humans. However, early evidence suggests estrogen may be protective against cataracts in women.^{14,15}

Finally, estrogen also may play a role in prevention of age-related macular degeneration (AMD). Estrogen-receptor alpha has been demonstrated in the retina and retinal pigment epithelium of young female eyes, but not in eye tissues dissected from men and postmenopausal women.¹⁶ Early menopause has been reported as a risk factor for AMD.¹⁷ Research suggests postmenopausal estrogen use appears to reduce the risk of AMD.¹⁸

There can be no doubt that a strong relationship exists between endogenous and exogenous hormones, menopause and the eye. This relationship adds to the complexity of decision-making concerning the benefit-to-risk ratio of hormone usage after menopause. Few women will discuss their eyes with you, but eye diseases increase with increasing age. At the very least, menopause-related healthcare providers need to draw attention to these potential problems, and apprise women of the need for regular eye examinations.



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