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Female? 40ish? Look for OSD

Hormones change. Systemic diseases linked to OSD, like lupus, also could play a role.

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Women compose a large percentage of our patient population and, since they tend to live on average five years longer than men, ultimately constitute the bulk of our Medicare population (55%).¹ As their medical issues become more prevalent with age they often begin spending more time in our offices. This is particularly true with respect to ocular surface disease.

Hormonal changes

Women's unique, age-based hormonal changes do not manifest fully until the average age of 51. But, perimenopause begins around age 38 and some women could experience the onset of dry eye.² Many women begin to notice the onset of contact lens intolerance, the inability to tolerate their eye make-up, burning, redness and foreign body sensation.

Aside from the alteration in female hormones, they also experience a change in testosterone levels. Men start out with more testosterone, but women also produce testosterone through the adrenal gland. Testosterone levels decline in men and women with time; however,

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women pass below the necessary testosterone level to maintain a healthy, productive lacrimal gland. Men usually don't pass below this level, and thus remain asymptomatic.

Systemic disease

Women are more susceptible to various inflammatory and autoimmune disorders associated with dry eye syndrome. The more common conditions include Sjögren's syndrome, systemic lupus erythematosus (SLE), scleroderma, rheumatoid arthritis, thyroid disease, inflammatory conditions (irritable bowel syndrome and Crohn's disease), and dermatologic conditions (such as rosacea and psoriasis).

Sjögren's

Sjögren's syndrome affects more than 4 million Americans; nine out of 10 are women whose average age of onset is in the late 40s.³ In half of all cases, Sjögren's syndrome occurs alone; however, in the remainder, it is associated with other autoimmune conditions, such as rheumatoid arthritis, lupus or scleroderma. Sjögren's can be difficult to diagnose due to the variation in signs and symptoms among patients. Antibody testing (Anti-SSA/B serology) and/or lacrimal gland biopsy have been the diagnostic standards.

Multiple antibodies have been associated with Sjögren's syndrome, including a variety of antibodies and proteins that are also associated with other autoimmune disorders.⁴ But, antibodies against SSA/Ro are only found in approximately 50% of patients, thus the absence of these antibodies does not rule out Sjögren's.⁴ In fact, these antibodies can be found in healthy individuals. Antibodies against SSB/La are also found in 40% to 50% of individuals and can be found in other inflammatory conditions as well (primary biliary cirrhosis and autoimmune hepatitis), so these tests are nonspecific.⁴ The condition is only properly diagnosed when the results of various tests are positive simultaneously and when the patient has subjective symptoms of the disease.⁵

The Sjö test (Nicox) detects Sjögren's syndrome using four traditional biomarkers and three novel, proprietary biomarkers in order to improve sensitivity.⁶ Sjö has demonstrated approximately 89% sensitivity and 78% specificity, according to Nicox.⁶ This allows for early diagnosis and potential treatment before symptoms advance. This test is helpful for those patients who complain of both dry eye and dry mouth and for those with other autoimmune or inflammatory conditions, since Sjögren's syndrome is more common in this group of patients.

Graves'

Although thyroid disease affects both men and women, Graves' disease is 10 times more common in women than men; it usually starts in a woman's 20s to 30s, worsening with age.⁷ Dry eye disease in patients

with thyroid disease is multifactorial. It may be considered an autoimmune complication secondary to Hashimoto's thyroiditis or Graves' disease. Many of these patients experience mechanical lid impairment from exophthalmos, lid retraction and impaired blink, ultimately resulting in exposure keratopathy. Additionally, lacrimal gland dysfunction may occur, resulting in decreased tear production. Several potential mechanisms for lacrimal gland dysfunction include the binding of autoantibodies to TSH (thyrotropin) receptors in the lacrimal gland and the common association between thyroid disease and Sjögren's syndrome.

Rheumatoid arthritis

More than 70% of rheumatoid arthritis patients suffer from dry eye, but only about 12% of patients are undergoing treatment for their dry eye condition.^{8,9} The incidence of rheumatoid arthritis is two to three times higher in women as compared to men, and is most commonly diagnosed in a woman's 60s.¹⁰ Given the high prevalence of the association between rheumatoid and dry eye, referrals between ophthalmologists and rheumatologists who care for these patients should be standard for routine evaluation and potential treatment.

Rosacea

Ocular surface disease, particularly common in patients with rosacea, is characterized by chronic blepharitis and meibomian gland dysfunction. Rosacea, already more common in women than in men, becomes more prevalent during menopause, perhaps due to the trigger from underlying hormonal alterations. While more common in women, rosacea is generally more severe in men; they have more skin changes and nasal disfigurement (rhinophyma). Women more commonly experience the ocular complaints associated with evaporative dry eye and the flushing and bumps on their cheeks, chin and forehead. Women with rosacea often become intolerant to cosmetics. Once again, communication and routine referral between dermatologists and ophthalmologists can help facilitate earlier access to appropriate treatment in a timely manner.

OSD in Women program

The authors of this article will moderate a program on OSD in women at ASCRS 2016. The details:

- **PROGRAM:** Ocular Surface Disease in Women
- **FOCUS:** A Program for Ophthalmologists
- **DATE:** Friday, May 6, 2016
- **TIME:** 5:30 p.m. Reception, 6:30 p.m. Panel Discussion
- **PANEL:** Kendall Donaldson, MD, MS (*moderator*)

Alice Epitropoulos, MD

Cynthia Matossian, MD

Marguerite McDonald, MD

- **LOCATION:** New Orleans Marriott Downtown at the Convention Center
859 Convention Center Boulevard, New Orleans, La.

For more information and to register for the program,
visit OphthalmologyManagement.com/OcularSurfaceProgram

Other conditions commonly associated with women that are associated with dry eye include scleroderma and psoriasis.

Diagnostic and treatment strategies

We are fortunate to practice in a time of rapidly advancing technology in the field of ocular surface disease diagnosis and treatment. Dry eye disease tends to be a chronic condition associated with many of the classic features of chronic disease including depression, frustration and learned helplessness. Patients often need to be re-engaged and motivated to become active participants in their treatment regimen. Investing the time to develop a supportive partnership in treatment is essential; however as physicians, our time is a precious commodity already stretched to its limits. Physician extenders such as specialized technicians, nurses, or physician assistants can help us invest the needed time to create a supportive partnership to ensure successful treatment for these patients.

Additionally, objective assessments, such as tear osmolarity (TearLab) can help us diagnose and quantitate the disease at initial presentation. Tear osmolarity provides us with an objective measure to track response to treatment and to illustrate disease severity and treatment progress to our patients. In conjunction with tear osmolarity, we can also measure ocular surface inflammation through the detection of inflammatory mediators, such as MMP-9 (InflammaDry, RPS).

Traditional treatments for dry eye, such as artificial tears, cyclosporine (Restasis, Allergan) and punctal plugs have targeted aqueous production. However, new data show the importance of concentrating on the lid margin component of ocular surface disease to treat patients. Fortunately, a variety of treatments are available to treat evaporative dry eye beyond the traditional warm compresses, including manual expression and thermal pulsation systems (LipiFlow, TearScience).

Conclusion

Dry eye is a pervasive disease among our patients; many go undiagnosed or incompletely treated. Women comprise the bulk of our dry eye population due to various systemic diseases and normal, gender-related hormonal changes. We need to focus on this group of patients, raising awareness through patient and physician education so that we treat the

condition earlier to ensure better response.

Fortunately, with today's diagnostic and treatment repertoire, we can provide our patients with a rapidly expanding array of treatment options to help customize their care and provide the best outcomes. Collaborations between ophthalmologists and rheumatologists, dermatologists and generalists who treat these patients may provide the optimal means to achieve early diagnosis and effective treatment. **OM**

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