Aging female patients present new clinical challenges and opportunities

Ophthalmology has a role in detecting diseases of the eye - and the rest of the body

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in Chicago

As the French say: “Vive la Differance.” Yet, as obvious as are the biological differences between female and male, until recently they were often, even systematically, ignored in medical research. For example, from 1977 to 1986 women of childbearing age were actually banned from Phase 1 clinical trials in the United States. “Men and women were seen to be biologically equivalent,” says Eve J. Higginbotham MD, professor and chair at the Department of Ophthalmology, University of Maryland School of Medicine Baltimore, addressing a session at the annual meeting of the American Academy of Ophthalmology dedicated to women’s health issues.

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That’s a problem because it just isn’t true. Childbearing, hormone changes and other unique features of female biology have profound medical implications for everything from disease rates to pathology progression to treatment response. And since women on average live longer than men, as the population ages it also becomes increasingly female.

The bottom line: understanding how female biology affects the eyes is increasingly important for ophthalmologists to effectively treat patients. It can help physicians detect, diagnose and treat not only eye diseases, but also systemic diseases that present with visual symptoms.

Even though the study of female ophthalmology was delayed by wrong-headed research assumptions in the past, much valuable research has been done, Dr Higginbotham told the session.

Nuclear and cortical cataracts and vascular AMD are more common in women. The birth weight of babies, age of onset of menopause and the use of hormone replacement therapy have also been shown to be significant predictors for glaucoma and other eye diseases, she points out.

In addition, diseases such as rheumatoid arthritis (RA), which are more common among women, may present as ophthalmic complaints, says Janine A. Smith, MD Deputy Clinical Director of the National Eye Institute in Bethesda, Maryland, US. “Perforation, corneal involvement, cataracts, glaucoma, optic nerve disease and detached retina are complications that can result from RA. They require systemic immune therapy to treat.”

Visual disturbances may also be early signs of broader neurological problems, including degenerative, cerebrovascular, inflammatory and neoplastic disease. Early diagnosis is critical to reduce morbidity and mortality. As age increases, the risk of all these conditions rises, emphasised Lynn K. Gordon MD, PhD, assistant professor of ophthalmology at the University of California at Los Angeles School of Medicine.

Dry eye is also more prevalent in older women than men, with implications for treatment of the disease itself and for choosing refractive surgery techniques, she notes.

Taking the older female patient history
Many female-specific risk factors for eye disease can be identified while taking the patient history, Dr Higginbotham says. She suggests exploring the following questions:

• Age of onset of menopause - women who undergo menopause before age 45 are at higher risk for glaucoma.

• Use of hormone replacement therapy - oestrogen may play a role in perfusion of the optic nerve, putting patients receiving HRT at higher risk.

• Birth weights of babies - women who have delivered high birth-weight babies, those over 3.6 kg, are at higher risk for diabetes and may be at higher risk for the progression of glaucoma.

• In addition, female sex by itself is a significant factor in the progression of low-tension glaucoma, Dr Higginbotham says.

Ocular inflammation and systemic autoimmune disease
Inflammatory conditions such as scleritis, episcleritis, nodular episcleritis and uveitis, and peripheral ulcerative keratitis are not only more common in women, they may be signs of an underlying rheumatoid arthritis or other systemic condition, Dr Smith says. If so, systemic autoimmune treatment is required. She recommends looking for the following:

• Scleritis with severe pain — while pain and tenderness are hallmarks of scleritis, RA-related scleritis tends to be more severe and painful.

• Dry eye and mouth — may be caused by Sjogren’s syndrome, an autoimmune disorder that attacks the lacrimal and salivary glands. Sjogren’s may also appear in conjunction with RA or other autoimmune disorders.

• Presence of arthritis — arthritis in conjunction with inflammation of the eye and surrounding tissues could indicate RA or even Wegener’s granulomatosis.

• Uveitis — may be associated with a variety of autoimmune diseases including HLA-B-related arthritis, even though this condition is more common in men.

Systemic lupus erythematosus and sarcoidosis are also now being seen in older women, though both are more commonly seen in younger populations, Dr Smith says.

“Ocular inflammation suggests risk for a wide range of conditions,” she stressed.

Ocular signs of neurological disease
Often, older patients experience vague visual distortions and other visual impairments that may be early signs of neurological disease, Dr Gordon notes.

“Don’t assume it is because of a cataract or mild AMD. Ask if it could be a subtle double vision, an optic neuropathy, or a visual perceptual problem secondary to a greater neurological problem.”

Sudden or transient loss of vision could be a sign of a transient ischemic attack. Identifying and promptly treating TIA is key to preventing strokes, which are the third leading cause of mortality among women, and the risk increases with age.

Nonetheless, about 1/3 of patients with TIA symptoms are not referred for neurological testing Dr Gordon says.

Alzheimer’s disease, HIV-related dementia and other degenerative neurological conditions may present as visual disturbances resulting from a loss of the ability to manipulate visual information. Other symptoms of dementia include memory loss, language deterioration, poor judgment, restlessness and mood swings.

The incidence of dementia is increasing, with the risk of Alzheimer’s doubling every five years past age 65, Gordon says. "Double vision could indicate neoplastic brain cancers. Impaired vision, visual hallucinations and difficulty reading can also be associated with neurological problems, Dr Gordon notes. “Tuberculosis, HIV, and vasculitis are all very important and their prevalence increases with age.”

Dry eye and refractive surgery
Dry eye is about three times more common in women than men and its incidence increases at menopause. Refractive surgeons operating on women over the age of 40 should also be aware that LASIK surgery can provoke dry-eye, and it is much more likely to last longer in older women already prone to the condition, says Marguerite McDonald MD, clinical professor of ophthalmology at Tulane University, New Orleans.

“LASIK causes dry eye, but the outcomes are much worse if you go in with dry eye,” Dr McDonald theorises that post-LASIK dry eye may result from severing corneal nerve endings when the flap is cut, and destroying nerve bases during ablation. Dr McDonald’s research suggests that conductive keratoplasty may be a better option for treating hyperopia and presbyopia. LASEK may be better for treating myopia because it eliminates damage induced by cutting a flap, Dr McDonald says.

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These comments reflect just how far ophthalmology has come in recognising and accommodating the needs of females, particularly aging women. However, much remains to be discovered about how female biology affects the eye, Dr Higginbotham says.

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