

Effects of Sex Hormones on Ocular Blood Flow and Intraocular Pressure in Primary Open-angle Glaucoma: A Review

Patel P (1) , Harris A (1) , Toris C (2) , Tobe L (1) , Lang M (1) , Belamkar A (1) , Ng A (1) , Verticchio Vercellin AC (3,4) , Mathew S (1) , Siesky B (1)

1 Department of Ophthalmology, Eugene and Marilyn Glick Eye Institute, Indiana University School of Medicine, Indianapolis, IN.

2 Department of Ophthalmology and Visual Sciences, Case Western Reserve University School of Medicine, Cleveland, OH.

3 University Eye Clinic, IRCCS (Scientific Institute for Research, Hospitalization and Health Care) , Policlinic San Matteo, Pavia.

4 IRCCS (Scientific Institute for Research, Hospitalization and Health Care) - Bietti Foundation, Rome, Italy.

Primary open-angle glaucoma (POAG) is a multifactorial optic neuropathy characterized by progressive retinal ganglion cell death and visual field loss. Some speculate that sex plays a role in the risk of developing POAG and that the physiological differences between men and women may be attributed to the variable effects of sex hormones on intraocular pressure, ocular blood flow, and/or neuroprotection. Estrogen, in the form of premenopausal status, pregnancy, and postmenopausal hormone therapy is associated with an increase in ocular blood flow, decrease in intraocular pressure and neuroprotective properties.

The vasodilation caused by estrogen and its effects on aqueous humor outflow may contribute. In contrast, although testosterone may have known effects in the cardiovascular and cerebrovascular systems, there is no consensus as to its effects in ocular health or POAG. With a better understanding of sex hormones in POAG, sex hormone-derived preventative and therapeutic considerations in disease management may provide for improved sex-specific patient care.

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