

# Glaucoma drug can cause droopy eyelids

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Prostaglandin analogues (PGAs), drugs which lower intraocular pressure, are often the first line of treatment for people with glaucoma, but their use is not without risks. PGAs have long been associated with blurred vision, dryness, changes in eye color and other side effects. Now a new study has found that these drugs also cause upper and lower eyelid drooping and other issues that can interfere with vision. The findings are described in *PLOS ONE*.

Researchers from the Massachusetts Eye and Ear performed multivariable analysis accounting for age, [body mass index](#) (BMI), medical conditions, and other glaucoma medications that could confound the potential association between PGAs and the periocular changes in a large, cross-sectional study that assesses the ocular anatomy of glaucoma patients with masked reviewers using a validated instrument.

"We identified important side effects of PGAs, namely the loss of periorbital fat in the upper and lower lid and the presence of ptosis," said senior author Louis R. Pasquale, M.D., F.A.R.V.O., director of the Glaucoma Service at Mass. Eye and Ear and associate professor of ophthalmology at Harvard Medical School. "The loss of periorbital fat was previously described by us in a small series of unilateral PGA users. In fact, those observations did ultimately lead to a change in drug labeling. These new findings could change labeling for the PGAs, as the upper lid ptosis could aggravate pre-existing visual field loss."

Researchers performed this study to confirm whether [prostaglandin](#)-associated periorbitopathy (PAP) is clearly associated with PGA

application among bilateral users using a validated grading scheme applied by masked observers and confirmed by clinical examination. They performed multivariable analyses to assess whether PAP was independently associated with PGA use or if it was the result of confounding features such as age, ethnicity, BMI or use of other classes of glaucoma medications. They studied 343 patients (186 females and 157 males) over the course of seven months in 2011.

The study showed associations between current bilateral PGA use and deepened upper eyelid sulci, hollowing of the inferior periorbital fat pads, upper eyelid ptosis with levator muscle dysfunction, and lower lid retraction. Their work demonstrated that PAP is fairly common and consists of findings that extend beyond deepening of the upper eyelid sulcus. A full description of the methods and results are in the paper.

"Because PGAs are a first line of treatment for glaucoma, these results provide physicians with one reason to reconsider when they should be added in new patients, particularly those where the aim is to prevent glaucoma such as in ocular hypertension patients or [glaucoma](#) suspects," Dr. Pasquale said.

Mamta Shah, M.D., a medical student from Boston University School of Medicine, led the research.

Provided by Massachusetts Eye and Ear Infirmary

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