

The Potential Association Between Postmenopausal Hormone Use and Primary Open-Angle Glaucoma

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IMPORTANCE: Retinal ganglion cells are known to express estrogen receptors and prior studies have suggested an association between postmenopausal hormone (PMH) use and decreased intraocular pressure, suggesting that PMH use may decrease the risk for primary open-angle glaucoma (POAG) .

OBJECTIVE: To determine whether the use of 3 different classes of PMH affects the risk for POAG.

DESIGN, SETTING, AND PARTICIPANTS: Retrospective longitudinal cohort analysis of claims data from women 50 years or older enrolled in a US managed-care plan for at least 4 years in which enrollees had at least 2 visits to an eye care provider during the period 2001 through 2009. **EXPOSURE** Postmenopausal hormone medications containing estrogen only, estrogen + progesterone, and estrogen + androgen, as captured from outpatient pharmacy claims over a 4-year period.

MAIN OUTCOMES AND MEASURES: Hazard ratios (HRs) for developing incident POAG.

RESULTS: Of 152 163 eligible enrollees, 2925 (1.9%) developed POAG. After adjustment for confounding factors, each additional month of use of PMH containing estrogen only was associated with a 0.4% reduced risk for POAG (HR, 0.996 \times 95% CI, 0.993-0.999; $P=$.02) . The risk for POAG did not differ with each additional month of use of estrogen + progesterone (HR, 0.994 \times 95% CI, 0.987-1.001]; $P=$.08) or estrogen + androgen (HR, 0.999 \times 95% CI, 0.988-1.011]; $P=$.89) .

CONCLUSIONS AND RELEVANCE: Use of PMH preparations containing estrogen may help reduce the risk for POAG. If prospective studies confirm the findings of this analysis, novel treatments for this sight-threatening condition may follow.

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