Metformin use associated with reduced risk of developing open-angle glaucoma

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Taking the medication metformin hydrochloride was associated with reduced risk of developing the sight-threatening disease open-angle glaucoma in people with diabetes, according to a study published online by *JAMA Ophthalmology*.

Medications that mimic caloric restriction such as metformin can reduce the risk of some late age-onset disease. It is unknown whether these caloric mimetic drugs affect the risk of age-associated eye diseases such as macular degeneration, diabetic retinopathy, cataract or glaucoma.

Researcher Julia E. Richards, Ph.D., of the University of Michigan, Ann Arbor, and co-authors examined metformin use and the risk of open-angle glaucoma (OAG) using data from a large U.S. managed care network from 2001 through 2010.

Of 150,016 patients with diabetes, 5,893 (3.9 percent) developed OAG. Throughout the study period, 60,214 patients (40.1 percent) filled at least one metformin prescription; 46,505 (31 percent) filled at least one sulfonylurea prescription; 35,707 (23.8 percent) filled at least one thiazolidinedione prescription; 3,663 (2.4 percent) filled at least one meglitinide prescription; and 33,948 (22.6 percent) filled at least one insulin prescription. Some patients filled prescriptions for multiple medications.

Study results indicate that patients prescribed the highest amount of metformin (greater than 1,110 grams in two years) had a 25 percent

reduced risk of OAG risk compared with those who took no metformin. Every one-gram increase in metformin was associated with a 0.16 percent reduction in OAG risk, which means that taking a standard dose of 2 grams of metformin per day for two years would result in a 20.8 percent reduction in risk of OAG.

'Although the impact of metformin on risk is known for some traits such as cardiovascular disease, diabetes and some specific cancers, this study points out the importance of understanding the potential impact of CR (caloric restriction) mimetic drugs on the risk of developing other medical conditions that affect older persons. It will also be important to elucidate the mechanisms of metformin action, at both the molecular and clinical level, in the ocular tissues involved in OAG pathology,' the study concludes.

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