Introduction: The United Kingdom Treatment Study (UKGTS) was a randomized placebo-controlled trial, which showed for the first time preservation of the visual field with an intraocular pressure-lowering drug, in newly diagnosed glaucoma patients. The association between diabetes mellitus (DM) and glaucoma has been inconsistently reported and controversy persists. The aim of this work was to assess if there is an association between DM and glaucomatous visual field (VF) deterioration.

Methods: The UKGTS enrolled newly diagnosed open-angle glaucoma patients in ten UK centers (trial registration number ISRCTN96423140). Baseline characteristics included demographic data, medical and family history, intraocular pressure (IOP) and mean defect in VF at baseline, axial length, corneal hysteresis and central thickness (CCT). Blood samples from all patients were collected at baseline and measurements HbA1c were obtained. A post-hoc multivariate Cox regression model was conducted.

Results: A total of 484 patients were considered. The diabetic group (n=223) had a higher mean baseline IOP, thinner CCT, greater corneal hysteresis and an increased waist perimeter than the non-diabetic group. In the adjusted multivariate regression model, there was a non-significant 23% decrease in the risk of progression in the diabetic group (HR=0.77, 95% confidence interval (CI) 0.47-1.25, p=0.29). Subgroup analyses suggested a protective effect of DM in the latanoprost group (HR=0.35, 95% CI 0.13-0.93, p=0.035).

Conclusion: DM was not associated with glaucomatous VF deterioration, in contrast with previous studies. Moreover, our findings suggest that in patients treated with latanoprost, diabetic status may have a protective role in glaucoma progression. This pioneer post-hoc analysis may contribute to further research on the complex association between these two multifactorial diseases.