The aim of this work is study the violations in the proteolysis system in patients with type 2 diabetes mellitus and diabetic retinopathy (DR).

Materials and methods
We studied the levels of matrix metalloproteinase-9 (MMP-9) and tissue inhibitor of matrix metalloproteinase-1 (TIMP-1) in the blood and in the intraocular liquid of patients with type 2 diabetes by immunofermental method (Bender Medsystems, Austria) for 154 patients (163 eyes), from them 112 patients (121 eye) with the diabetes mellitus 2 type made basic group and 42 patients (42 eyes) without diabetes corresponding age and sex made control group. For statistical analysis used the biostatistical methods Statistica 7.0 (StatSoft Inc., 2004).

Results and discussion
It was found the changes in proteolysis system in patients with DR and type 2 diabetes. We have established that the level of MMP-9 and TIMP-1 in the blood and in the intraocular liquid increased in patients with type 2 diabetes without signs of DR and with any stage of DR compared to the levels of these parameters in patients without diabetes. It was found that the levels of MMP-9 in the intraocular liquid and type 2 diabetes duration affected the probability of developing diabetic macular edema (DME). At the level of MMP-9≥105 ng/ml and type 2 diabetes duration ≥10 years, the probability of developing DME was 100%. As a result of the construction of predictive models it was found that the level of MMP-9 in the intraocular liquid, stage of DR at the beginning of observation and type 2 diabetes duration had influence on the probability of the development of proliferative DR over 4 years of follow-up. If the level of MMP-9≥100 ng/ml, type 2 diabetes duration ≥10 years and absence of DR at the beginning of observation were observed the probability of developing proliferative diabetic retinopathy would compose 85.9%.

Conclusions
Thus, the MMP-9 level in intraocular liquid for the patients of type 2 diabetes mellitus, initial degree of diabetic retinopathy weight, and also remoteness of diabetes mellitus were statistically meaningful risk factors of diabetic retinopathy progress during 4th years of supervision.