Purpose: To study the presence of systemic diseases in low pressure glaucoma (LPG) and primary open-angle glaucoma (OAG) patients and the specific characteristics of functional and structural damages in those two types of glaucoma.

Methods: All consecutive glaucoma patients diagnosed and treated for a period of 6 months were included. They were evaluated by routine methods, stereoscopic examination of the optic nerve, computer perimetry (Humphrey) and Stratus OCT. The existence of systemic diseases has been studied with emphasis on vascular risk factors, including specialized consultations.

Results: IOP was lower than the statistically defined normal IOP values in 44 (55%) out of 80 studied patients. Within this group we established the presence of specific topographic changes in the optic nerve and ganglion cells / nerve fibers layer. In compliant patients with disease progress and IOP values between 19-20 mm, we found significantly higher prevalence of systemic diseases leading to ischemia: uncontrolled blood pressure, diabetes mellitus, etc. We demonstrate also the subsequent functional differences in the development of damage in optic nerve and visual field in the two groups.

Conclusion: Literature data and our observations explicitly demonstrate the existence of additional risk factors in LPG. Preserving vision and quality of life in patients with LPG depends both on the timely decision for lower IOP target, and on the management of accompanying vascular disorders.