

**Effectiveness of preliminary laser coagulation of retina in vitreoretinal surgery of proliferative diabetic retinopathy**

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**Relevance.** Diabetic retinopathy is the main cause of irreversible blindness amongst people of working age.

**The objective** of this study was optimization of prophylactic activities on prevention of complications of vitreoretinal surgery at proliferative diabetic retinopathy (PDR).

**Materials and methods of research.** There have been examined 80 patients (100 eyes) with diabetes mellitus (DM) of I and II type, complicated with PDR.

All patients were divided into 2 clinical groups. Group I comprised 58 (58 eyes) patients with prior panretinal laser coagulation (PLC+) in the III and early IV stages of PDR. and Group II consisted of 42 (42 eyes) patients without previous laser coagulation (PLC-). All patients underwent a full ophthalmological examination. Long-term results were evaluated after 3, 6, 9 and 12 months.

**Results and its discussion.** Overall, the success of vitreoretinal surgery (restoration of the anatomical structure of the organ - elimination of hemophthalmia and retinal detachment) was in 83.3% (35 eyes) in the PLC- group and 94.8% (55 eyes) in the PLC+ group (differences between the groups -  $P < 0.05$ ).

In the course of our studies it was revealed that the previous laser coagulation of the retina in the eyes with proliferative diabetic retinopathy changes the frequency of the indications for vitreoretinal intervention. In the eyes with the previous laser coagulation, there was no combined retinal detachment, there were reliably less frequent shallow detachments of macula and not resorbing hemorrhages. Patients retain a higher visual function, which is known to be a prognostically favorable factor in the functional outcome of the surgery. Another positive predictive effect is the lower incidence of intraocular hypertension in the eyes with the previous PLC. Also, the previous PLC can reduce the time of surgery and reduce the risk of intraoperative hemorrhages. Reduction of the surgery time is associated with a lower volume of intravitreal hemorrhages, less severity of traction, lower demand for using silicone oil and a lower need for intraoperative laser coagulation of retina (due to coagulates).

**Conclusions.** A significantly positive effect of the preliminary laser coagulation of the retina in the eyes with PDR was revealed even in the conditions of the arising of indications for vitreoretinal surgery. A tendency to reduction of the need for using silicone oil in the eyes with a preliminary laser coagulation of retina has been found.

**Key words:** proliferative diabetic retinopathy, panretinal laser coagulation, vitreo-retinal surgery, silicone oil tamponade.

**Professional Biography**

Кхера Акшей is a head of the surgical department in Ophthalmology Clinic “Vedanta medical”. He graduated Tashkent State Medical institute in 1998. From 1999 to 2001 he was resident in Department of eye diseases in Tashkent State Medical institute. From 2002 to 2010 he worked as ophthalmologist in clinic «KO’Z-TIB SERVIS». Then, from 2011 to 2015 he worked as head of the clinic in «ORION MEDICITY». He has more than 50 publications. In 2018 he successfully protected his dissertation on PhD - degree, the name of his work is “Improvement of methods of vitreoretinal surgery in patients with proliferative diabetic retinopathy and cataract”. Doctor Akshey Khera is an expert in vitreoretinal surgery, diabetic retinopathy and retinal detachment.



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