

CONTEMPORARY TREATMENT STRATEGIES FOR DIABETIC RETINOPATHY

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The conservative treatment of RD was and is one of the contradictory departments of contemporary ophthalmology. It aims to restore the integrity of the vascular wall (the structure and function of the endothelium and the basement membrane of damaged retinal vessels), reduce microthrombosis (improve microcirculation), prevent the development of retinal ischemia areas and the production of vasoproliferative factor, reduce the risk of newly formed vessels and reduction and/or complete elimination of macular edema.

Despite the long history of experimentation and clinical investigations, some preparations still remain of choice and apparently effective, such as: Emoxipine (methylethylperidinol 1%) and Xanthinol Nicotinate / injectable solution 15%.

A new molecule, 2-ethyl-3-hydroxy-6-methylpyridine nicotinate, is under investigation, which includes two pharmacophores: 3-hydroxypyridine and nicotinate. The presence of 3-hydroxypyridine provides a complex of antioxidant and membrane-protective effects. Xanthinol nicotinate dilates peripheral vessels, improves microcirculation in retinal vessels and inhibits platelet aggregation.

Anti-VEGF agents used in ophthalmology include Bevacizumab (Avastin), Ranibizumab (Lucentis), Aflibercept (Trap-Eye), Conbercept, Abicipar Pegol, Faricimab (Vabysmo, the first bispecific monoclonal antibody for intravitreal use that can neutralize VEGF and Ang-2).

A fairly new group are the senolytic drugs, UBX-1325 and UBX-1967, which eliminate senescent cells (cells that resist apoptosis and do not divide but remain metabolically active) without damaging or destroying healthy tissue. Gene therapy, nanotechnology, and digital innovations have made substantial progress in recent decades.

Conclusions: Indisputably all patients with RD require specialized treatment by an ophthalmologist, observation and treatment by an endocrinologist. At the same time, tactics change periodically regarding the indications for vitrectomy, such as vitreous hemorrhages, RDP, EM and tractional macular and/or retinal detachment. The treatment of RD is quite complex, not to mention the fact that the conservative one is not so eloquent and fully studied, because such studies require quite a long time.

The above-mentioned suggest the idea of developing complex methods or/and a conduct and treatment tactic that will allow partial restoration or improvement of visual functions.