

## Diabetic retinopathy

Diabetic retinopathy is the main cause of blindness. Diabetic retinopathy (DR) is a microvascular complication related to diabetes. It affects 1 in 3 patients. DR develops over time (10-15 years) and is associated with high blood glucose.

There are 2 types of DR: non-proliferative (NPDR) and proliferative diabetic retinopathy (PDR).

Patients with NPDR are asymptomatic, but in cases of PDR symptoms such as loss of visual acuity, distortion, floaters, blurred vision may appear.

PRD is characterized by the presence of neovascularization that may lead to preretinal and vitreous hemorrhages, fibrovascular proliferation with secondary tractional retinal detachment.

The exam of the retina may identify the following signs of DR:

- microaneurysms- red dots in the superficial retinal layers;
- intraretinal microvascular abnormalities (IRMA);
- dot and blot hemorrhages in the inner nuclear and outer plexiform layers of the retina;
- flame-shaped hemorrhages in superficial nerve fiber layer;
- cotton-wool spots secondary to the nerve fiber layer infarctions;
- hard exudates due to the leakage of lipids and protein;
- venous beading;
- macular oedema.

For patients with diabetes a complete ophthalmological exam is mandatory. Fluorescein angiography is useful in the diagnose of microaneurysms, neovascularization, ischemic areas. Optical coherence tomography identifies retinal oedema and vitreomacular traction. B-scan ultrasonography highlights vitreous hemorrhages, fibrovascular traction.

The management of diabetic retinopathy consists in controlling the glucose blood levels, pharmacologic treatment, laser photocoagulation and surgery procedures.

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### Cooperation beyond borders.

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Intravitreal injection with triamcinolone, bevacizumab or ranibizumab are useful in reducing retinal oedema and neovascularization.

Laser photocoagulation is used in cases of NPDR associated with clinically significant macular edema. Patients with PDR undergo panretinal photocoagulation (PRP).

Vitrectomy is performed in long-standing vitreous haemorrhage and retinal detachment (tractional, combined tractional and rhegmatogenous retinal detachment).