

1.0 INTRODUCTION

Diabetes is a condition that results from the body's inability to cope normally with sugar and other carbohydrates in the diet due to the lack of insulin, a hormone secreted in the pancreas.

Diabetes affects the function of the heart, the kidneys and the retina. The disease process which affects the blood vessels of the retina is called Diabetic Retinopathy.

2.0 WHAT HAPPENS TO THE RETINA IN DIABETIC RETINOPATHY

Depending on the severity, Diabetic Retinopathy is graded as:

NPDR - Non-Proliferative Diabetic Retinopathy

In the early stages, the blood vessels in the retina are slightly affected. They may bulge (microaneurysm) and may leak blood (hemorrhages) or fluid (exudates). There may be collection of fluid in portions of the retina that is responsible for central vision (macula). This is called Macular Edema. This may have to be treated with Laser Photocoagulation or intravitreal injections.

PDR – Proliferative Diabetic Retinopathy

As the disease progresses, there is deficient oxygen supply to the retina which is known as hypoxia. Hypoxia is a stimulus to new vessel formation in the retina which results in Proliferative Diabetic Retinopathy.

These new vessels are fragile and bleed very easily. Excessive bleeding in the eye leads to Vitreous Hemorrhage which leads to severe drop in vision.

Recurrent bleeding will cause the formation of scar tissue which pulls the retina from its position and causes loss of vision. This is called Retinal Detachment.

3.0 CERTAIN FACTS ABOUT DIABETIC RETINOPATHY

Diabetic Retinopathy is a major cause of irreversible blindness in old age.

The longer the duration of diabetes, the greater is the severity of retinopathy. The duration matters.

Hypertension, Renal Disease, Anemia, Hyperlipidemia, Obesity, Smoking have an adverse effect on Diabetic Retinopathy.

4.0 DIAGNOSIS

Diagnosis of Diabetic Retinopathy is by slit lamp biomicroscopy with 78D lens. Fundus Fluorescein Angiography (FFA) and Optical Coherence Tomography (OCT) aid in the assessment of severity and extent of the disease. FFA involves a test whereby a dye is injected into the vein in the arm and the inundation of the dye in the retina is assessed by taking multiple pictures of the retina. The extent of hypoxia, macular edema and new vessels in the retina are studied and the need for laser treatment is assessed and planned for.

OCT is a new modality of imaging the retina. It is non invasive and aids in the assessment of macular edema. Whether the patient needs intravitreal injections or laser photocoagulation, is decided upon after studying the findings in OCT and FFA.

5.0 MANAGEMENT

Laser photocoagulation is the mainstay in the management of Diabetic Retinopathy. Depending upon the stage of Diabetic Retinopathy and the extent of Diabetic Retinopathy, the Laser Treatment could be minimal or extensive (Pan Retinal). Macular edema without vitreo retinal traction can be treated with intravitreal injections.

Intravitreal injections are given in the eye under local anaesthesia. The visual improvement can be dramatic but repeated injections need to be given.

Advanced Diabetic Eye Disease comprising of vitreous hemorrhage, retinal detachment requires surgical intervention. (Vitrectomy) and endolaser photocoagulation.

6.0 IMPORTANT POINTS TO REMEMBER

Early diagnosis of Diabetic Retinopathy is vital. Early diagnosis would go a long way in preventing the complications of the disease.

Once diagnosed to have diabetes, an annual retinal check is mandatory.

Once diagnosed to have Diabetic Retinopathy, depending upon the severity, retinal check is required once in six months or three months.

Most sight threatening conditions of the retina can be managed by laser treatment if it is given early enough.

Patients with Diabetic Retinopathy can lead a normal life if it is adequately treated.