LASER IN THE TREATMENT OF DIABETIC MACULAR EDEMA

The macula is about 5.5 mm in diameter. It is located temporal to the optic disc. The central part of the macula (the fovea) is 1.5 mm in diameter.

The fovea is surrounded by the parafoveal region which is 0.5mm in width the peripheal zone of the macular region (the perifovea) is 1.5 mm in width.

Macular edema is defined as any retinal thickening with or without partial loss of transparency within at least one disc area of the centre of the macula.

The macular edema is either focal edema with focal areas of leakage as microanurysms, or diffuse with diffuse leaking areas.

The main pathological factors contributing to macular edema are loss of integrity of blood retinal barrier, I.R.M.A, tissue hyperglycaemia which causes osmotic disruption and other factors.

The prevalence of macular edema increase with overall severity of diabetic retinopathy, duration of diabetes mellitus and higher glycosylated haemoglobin level.

The most important diagnostic examinations and investigations are: fundus biomicroscopy, fundus photography and fluoresceine angigraphy.

The selected cases were treated with focal laser photocoagulation for focal macular edema and modified grid for diffuse cases of macular edema using argon green laser.

The prognosis was better in cases with early focal macular edema than in cases with diffuse macular edema. Also, cases with initial visual acuity better than 6/18 gave better results than those cases with lesser visual acuity.

Field changes in the form of central and paracentral scotomas are important complications in treated cases.

These field changes are less in cases treated with focal laser photocoagulation than in cases of diffuse macular edema treated with modified grid photocoagulation.

So in our study we found that:

Argon green laser treatment in the form of focal laser photocoagulation in cases of focal macular edema, grid or modified grid laser photocoagulation in cases of diffuse macular edema are best ways of treatment in cases of clinicaly significant macular edema.

We found also that incidence and severity of macular edema are related to many factors as:

Age of patients; younger patient gives better results on treatment.

Duration of diabetes, the longer the duration of diabetes the more is the incidence of macular edema and the worse is the results of treatment.

Type of diabetes; whether insulin dependent or-non-insulin dependent, the incidence of macular edema increased in cases of insulin dependent diabetics and the results were better in cases of-non-insulin dependent diabetices.

Also we found that visual results of treatment in the form of visual improvement, stabilization or deterioration are better in cases of focal than diffuse macular edema.

Also the patients of visual acuity $\geq$ 6/18 gave better results than patients with visual acuity < 6/18.

The field changes in the form of central and paracentral scotomas is a significant complication in cases of macular edema treated with argon laser. This complication decreased in cases of mild focal macular edema treated with focal laser photocoagultion. Field changes are well manifest in sever cases of diffuse macular edema which are treated agressively with grid or modified grid laser photocaoagulation.