

## Infrared Micropulse Photocoagulation (MIP) in diabetic macular edema (DME)

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### **Purpose:**

To demonstrate the possibilities of suvisible endpoint therapy using 810 nm MIP in treatment of DME. To present this new tool which minimize neural retinal damage in the treatment of ME.

### **Methods:**

MIP is used in our clinic to treat DME in patients for a significant decrease in visual acuity. Examination SLO protocol includes Infrared (IR), Red-free (RF) and Autofluorescence (AF) images acquisition and Fluorescein Angiography. We have analyzed data from 116 (82 patients) consecutive eyes diagnosed with DME between May 2002 and March 2004. ETDRS visual acuity, fundusoscopic evaluation, SLO HRA and OCT examinations were performed. All patients with proliferative DR or with macular ischemia were excluded.

### **Results:**

Majority of patients had stabilization or improvement of VA after one MIP. Mean interval for MIP retreatment if required was 4 months. Patients with no efficiency of MIP mainly had incomplete posterior vitreous detachment (PVD) occurring or systemic diabetic deterioration during MIP procedure. Specific features on SLO RF, IR and AF pictures were associated with precise corresponding anatomical appearances of ME improvement. Estimation of ME decrease was more difficult with Angiography, except if previous macular big cysts. OCT allowed a precise follow-up and remained the most useful examination. Patients with tractional ME were led to surgery. Follow-up was possible with non-injection SLO images and OCT examinations. No evidence of scars or atrophic areas were observed after MIP, except sometimes with AF SLO pictures. No pain during MIP treatment was noticed. No scotoma after MIP was observed.

### **Conclusion:**

Subthreshold MIP seems efficient in managing DME. It provides a new tool for this disease, apparently without any complication. The main difficulty remains the choice of MIP parameters, with a risk of undertreatment at the beginning. Further studies should precise the real possibilities of this new laser concept.

