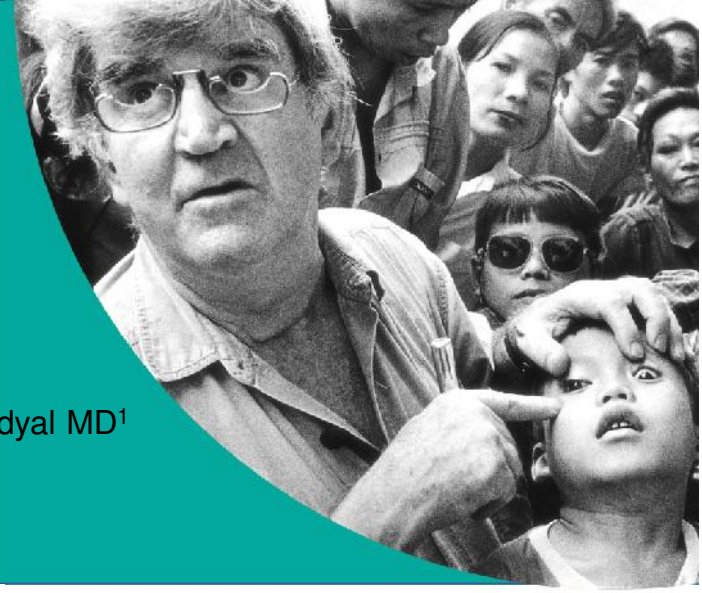
SINGLE VERSUS MULTIPLE SESSION COVENTIONAL PANRETINAL PHOTOCOAGULATIONS IN PROLIFERATIVE DIABETIC RETINOPATHY



Authors: Dr Raba Thapa MD[1], Dr Govinda Paudyal MD[1]
Presenting Author: Cathy Malla[2]
[1] Tilganga Institute of Ophthalmology, Nepal
[2] The Fred Hollows Foundation, Australia

BACKGROUND & AIMS

Background: Proliferative diabetic retinopathy (PDR) is the most common cause of vision loss among patients with diabetes. Timely detection and prompt laser therapy with pan-retinal photocoagulation (PRP) could save the vision from this avoidable sight threatening condition.

Aim: To assess the effect of conventional single session pan-retinal photo-coagulation (SSPRP) and multiple session pan-retinal photo-coagulation (MSPRP) in PDR on central macular thickness (CMT), total macular volume (TMV), best corrected visual acuity (BCVA), patient and doctors comfort during laser therapy, ocular complications and total cost for the treatment among the two groups.

METHODS

This is a hospital based prospective, interventional, comparative case series study conducted at the Tilganga Institute of ophthalmology, Nepal. SSPRP and MSPRP was given in equal number of eyes with early and high risk PDR cases with CMT less than 250 µm.
The SSPRP comprised of 1500 laser spots of 300 µm size, and the MSPRP comprised 500 laser spots of 300 µm size with 0.1 second duration. The effect of SSPRP and MSPRP on CMT, TMV, BCVA, and any ocular complications among the two groups was compared at baseline and follow up visits of day 1, day 7, two weeks, one month, three months, and six months.

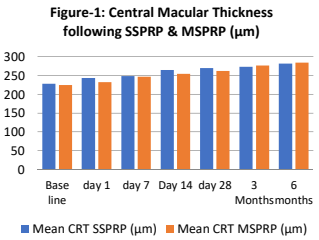
RESULTS

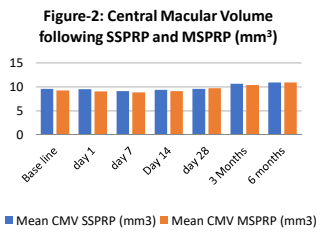
A total of 152 eyes of 104 patients were enrolled in the study. Both eyes were enrolled from 48 patients (46.15%) and only a single eye from 56 patients (53.85%). 76 eyes each had SSPRP and MSPRP.

CMT: The mean CMT at baseline was 228.23 µm in SSPRP and 224 µm in MSPRP. At subsequent follow ups, there was slight increase in CMT at all follow up visits in both session and were found comparable (See Figure 1).

TMV: TMV at base line was 9.59 mm^3 in SSPRP group and 9.23 mm^3 in MSPRP. Overall, there was an improvement in TMV in follow up visits. The TMV was comparable in both SSPRP and MSPRP at six months follow up (See Figure 2).

RESULTS (CONTD)





BCVA: The mean BCVA in Log MAR was 0.22 in SSPRP and 0.26 in MSPRP. In SSPRP, as compared to baseline, the vision slightly deteriorated at all follow up visits. In MSPRP, the BCVA was slightly improved at day 1, day 7 and day 28 follow up but deteriorated at day 14 and 3 months follow up.

No significant differences were found in any of the outcomes among single eye and both eyes involved subjects.

Mild pain was experienced by the majority of patients in both the group. Moderate pain was experienced more with SSPRP group.

The majority of retina specialist rated both SSPRP and MSPRP as being very easy to administer; the proportion was higher with MSPRP than of SSPRP.

Two eyes among the SSPRP developed transient serous retinal detachment, and one eye had shallow anterior chamber that recovered within a week. No such events observed with MSPRP. Average cost for the SSPRP was Rs. 2,388.89 and for MSPRP was Rs. 7,092.89 among the single eye enrolled patients. This included the travel cost, daily expenses , and the laser cost.

CONCLUSIONS

SSPRP with 1500 laser spots and MSPRP with 500 laser spots resulted in no significant differences in CMT, CMV and visual status. Although there was slight discomfort to the patient and doctor during administration, SSPRP is as safe as MSPRP. Two sessions PRP applying 1200-1500 laser spots of 300 micron at a time to achieve full PRP is safe and cost effective treatment modality in treating PDR in resource-limited countries like Nepal. Careful watch and control of underlying risk factors like blood pressure, glycemic and lipid panel control is very important aspect while managing the PDR and macular edema.

Contact: Dr Raba Thapa, MD | Tilganga Institute of Ophthalmology, Kathmandu – Nepal | Email: rabathapa@live.com

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