Short-term Outcomes of Near-Infrared Photobiomodulation for permanent diabetic macular edema

Afsaneh Ebrahimi[1] MD, Masoumeh Ahadi[2] PhD

[1]Ophthalmologist , Eye center in Omid Hospital in Zanjan prcince.

[2] Department of Optometry, Univercity of Shahid Beheshty medical sience, Tehran.

Abstract

Purpose

To assess the efficacy of Photobiomodulation with Near-Infrared radiation for treatment of permanent macular edema in diabetic patients.

Methods

Twelve eyes of 10 patients with permanent macular edema were included in this study. All patients underwent slit lamp examination and assessment of visual acuity, intraocular pressure, and optical coherence tomography(SD-OCT) . Photobiomodulation was performed using portable device (Warp 10, Quantum device) and applied near to the eye for 300s daily for twe monthly. Patients were re-assessed 1, 2, and 4 months after treatment.

Results

The mean visual acuity was .45 ± .29 Snellen and the mean acuity at four months following treatment was .66 ± .34, VA and increased by 1.85±1.2 Snellen lines ($P < 0.001$). The mean central macula thickness was 537 µm primarily and decreased to 520 µm after treatment ($P=0.015$). No adverse events were observed, including blured vision, inflammation and increased intraocular pressure or increased macular edema in any patient.

Conclusion

Photobiomodulation resulted in a decrease in macular thickness and improvement in visual acuity in patients with permanent macular edema which they have no invasive and expencive treatment.