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## Repeated intravitreal bevacizumab injection with and without macular grid photocoagulation for treatment of diffuse diabetic macular edema

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**Purpose:** To study whether the use of macular grid photocoagulation (MGP) 3 weeks subsequent to the initial intravitreal bevacizumab (IVB) injection for treatment of diffuse diabetic macular edema (DDME), can provide a longer disease – free intervals and reduce the burden of more frequent injections.

**Subjects and Methods:** A prospective randomized study that included 22 patients with bilateral DDME. In each patient, one eye was treated with repeated IVB injections alone (IVB group), while the other eye was treated with repeated IVB injections in addition to MGP once only 3 weeks after the initial IVB injection (combined group). Before each IVB injection and during the follow up visits, all patients received a complete ophthalmic examination. The central macular thickness (CMT) was measured by optical coherence tomography (OCT) at baseline and during the follow up examinations. Fundus fluorescein angiography was performed at baseline and before each IVB injection, to detect and assess macular leakage. All patients were followed up monthly for at least 12 months after the initial IVB injection, and for 3 months after the last IVB injection.

**Results:** By the end of the follow up duration ( $14.2 \pm 1.91$  months), the mean number of injections was significantly lower (P < 0.05) in the combined group (2.36 per eye) than in the IVB group (3.27 per eye). The mean duration between the Injections was significantly longer in the combined group than in the IVB group (P < .05). Within each group, the difference between the mean CMT at the baseline and at the end of the follow up duration was statistically significant (P < 0.05). The change in the mean best corrected visual acuity (BCVA) between the baseline and the end of the follow up period was not statistically significant in both groups (P > 0.05). There was no statistically significant difference between the 2 groups of the study as regards the number of patients who gained, maintained or lost vision (P > 0.05).

**Conclusion:** Repeated intravitreal bevacizumab (IVB) injection could provide a long-term benefit for treatment of DDME. Performing macular grid photocoagulation (MGP) once only 3 weeks subsequent to the initial IVB injection might provide a longer disease – free intervals and reduces the burden of more frequent injections.