

# Efek Pemberian injeksi Intravitreal Bevacizumab dengan Kombinasi Triamsinolon Asetonid terhadap Sensitivitas Retina dan Ketebalan Makula Sentral pada Pasien Edema Makula Diabetik Derajat Sedang-Berat = Efficacy of Intravitreal Bevacizumab Combined with Triamcinolone Acetonide on Retinal Sensitivity and Central Macular Thickness Changes in Patients with Moderate to Severe Diabetic Macular Edema

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## Abstrak

Latar Belakang: Saat ini, injeksi intravitreal anti-VEGF merupakan tatalaksana medikamentosa lini pertama pada DME. Namun monoterapi bevacizumab dinilai kurang efektif dalam mengobati DME derajat sedang-berat, sehingga meningkatkan jumlah re-injeksi. Selain VEGF, mediator inflamasi juga berperan penting dalam pathogenesis DME. Sehingga diperlukan terapi adjuvant pada kasus dengan respon suboptimal.

Tujuan: Mengetahui perbedaan perubahan sensitivitas retina, ketebalan makula sentral (CMT) dan BCVA sesudah dilakukan injeksi intravitreal Bevacizumab dengan kombinasi Triamsinolon Asetonid (TA) dibandingkan dengan monoterapi Bevacizumab pada pasien dengan edema makula diabetik derajat sedang-berat.

Metodologi: Pada studi eksperimental lengan ganda dengan randomisasi blok ini didapatkan sejumlah 28 subjek dengan CMT > 400 mm dibagi menjadi dua kelompok. Subjek pada kelompok intervensi diberikan injeksi kombinasi Bevacizumab 1,25 mg dan TA 2 mg intravitreal, sedangkan subjek kelompok kontrol hanya diberikan injeksi Bevacizumab 1,25 mg. Evaluasi BCVA dan CMT dilakukan pada 1 minggu dan 1 bulan pasca injeksi, evaluasi sensitivitas retina pada 1 bulan pasca injeksi, serta peningkatan TIO dan efek samping.

Hasil: Pasca 1 bulan injeksi didapatkan penurunan CMT yang lebih besar yang bermakna pada kelompok intervensi (-269,1 (170-413) mm vs -133,6 (50-218) mm,  $p < 0,001$ ), begitu juga dengan peningkatan sensitivitas retina yang lebih baik pada kelompok intervensi (2,4 (0,02-7,1) dB vs 1,3 (0,16-3,5) dB,  $p = 0,035$ ). Tidak didapatkan perbedaan bermakna pada luaran BCVA logMAR antar kedua kelompok (0.2 (0-0.5) vs 0.15 (0-0.5)).

Kesimpulan: Terapi kombinasi bevacizumab dan TA ini terbukti efektif dan cost-effective sebagai dalam menurunkan edema makula segera dan memperbaiki sensitivitas retina pada pasien DME derajat sedang-berat dan DME persisten.

.....Backgrounds: Intravitreal bevacizumab (IVB) monotherapy is less effective in treating moderate-to-severe diabetic macular edema (DME), potentially increasing the number of injections and the risk of permanent vision loss. In addition to VEGF, inflammatory mediators also play an important role in the pathogenesis of DME. Therefore, there is a need for additional treatment options for DME cases with suboptimal response to anti-VEGF therapy.

Objectives: To compare the efficacy and safety of the combination of IVB and triamcinolone acetonide (TA) with IVB monotherapy in treating moderate to severe DME.

Methods: In this double-arm randomized controlled trial study, a total of 28 DME patients with central

macular thickness (CMT) >400 mm were assigned into two groups according to the therapeutic method: 1,25 mg of bevacizumab combined with 2 mg of TA as the intervention group and 1,25 mg of IVB as the control group. BCVA and CMT were observed at 1 week and 1 month follow-up, retinal sensitivity was observed at 1 month follow-up, as well as increased IOP and other side effects.

Results: CMT reduction after 1 month were higher in the intervention group with statistically significant different (-269,1 mm vs -133,6 mm,  $p < 0,001$ ) as well as retinal sensitivity improvement also better in the intervention group (2,4 dB vs 1,3 dB,  $p = 0,035$ ). But there was no statistically different in BCVA changes after 1 month follow-up (0,2 vs 0,15,  $p = 0,874$ ) between the groups, even though 35,7% of the intervention group has gained more than 10 BCVA letters. No significant increase in IOP were observed at the end of the follow-up.

Conclusions: It is effective and cost-effective to treat moderate-to-severe or persistent DME by utilizing TA as an adjunct to anti-VEGF.