

06. COMPARATIVE EFFICACY OF INTRAVITREAL AFLIBERCEPT AND DEXAMETHASONE IMPLANT IN TREATING MACULAR EDEMA ASSOCIATED WITH DIABETIC RETINOPATHY OR RETINAL VEIN OCCLUSION: A META-ANALYSIS AND SYSTEMATIC REVIEW (2836)

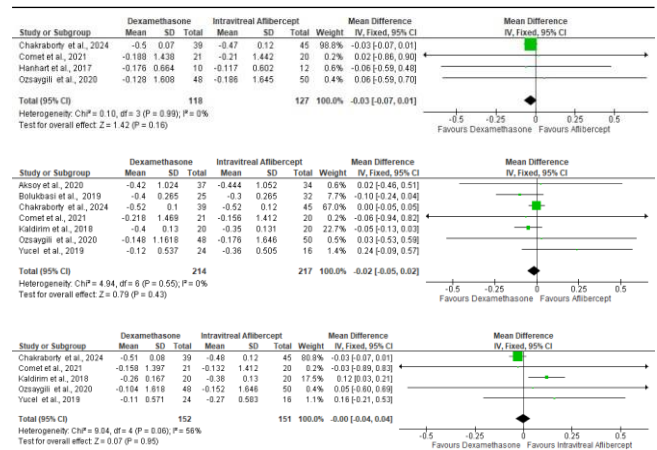
Khaled Moghib¹, Yumna Mahmoud¹, Ayman Hassan¹, Ammar Salah²

1. Fourth-year medical student, Cairo University/ Kasralainy Medical School, Cairo, Egypt
2. Fifth-year medical student. Faculty of Medicine, Al_Azhar Asuit, Egypt

 <https://www.youtube.com/live/fSpXH-3Xy5w?t=6495s>

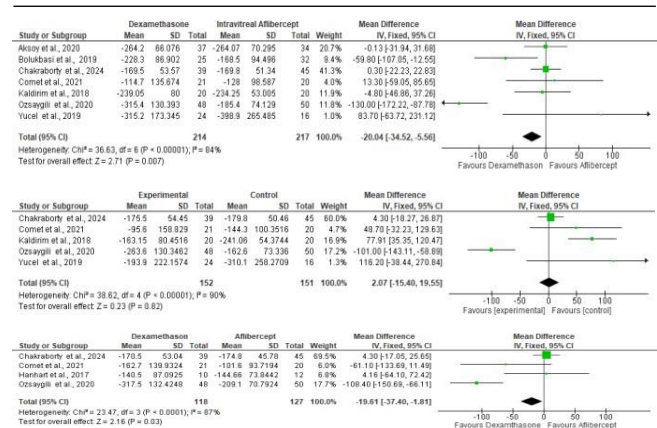
BACKGROUND: Diabetic retinopathy (DR) and retinal vein occlusion (RVO) are common retinal vascular diseases that can lead to visual impairment. Macular edema is a serious complication of both DR and RVO. Anti-VEGF agents like aflibercept and corticosteroids like dexamethasone implant are treatments for ME. We aim to evaluate the comparative efficacy and safety of these two treatments for ME associated with DR or RVO. **METHOD:** The databases used in the study for a literature search include PubMed, Embase and Cochrane Central Register of Controlled Trials searched from inception till August 1, 2024. The aim was to include trials which addressed the efficacy and safety of treatments for macular edema. Data extraction was performed on key outcome variables which included the BCVA, CRT, the number of injections given and the SAE's. The obtained data was subsequently analyzed qualitatively and quantitatively based on the RevMan 5 software program. 3 software for meta-analysis of the included studies. **RESULTS:** We included a total 8 of studies comprising 453 eyes. The underlying causes of macular edema in the included studies were RVO and DR. When comparing the dexamethasone implant group to the aflibercept treatment group, there was no statistically significant difference in BCVA at the 3M (MD: -0.00, 95% CI: -0.04,0.04; P=0.95),6M (MD: -0.02, 95% CI: -0.05, 0.02; P=0.43) and 12M (MD: -0.03, 95% CI: -0.07, 0.01; P=0.16). In terms of central retinal thickness reduction, there was a significant difference between the two groups at 3M (MD: -20.04, 95% CI: -34.52,-5.56; P=0.007), and 12M (MD:19.61, 95% CI: -37.4, -1.81; P=0.03), however, there was no significant result in 6M (MD: 2.07, 95% CI: - 15.4, 19.55; P=0.82). **CONCLUSION:** The meta-analysis revealed that the aflibercept intravitreal injection and dexamethasone implant both significant in improving BCVA and decreasing the CRT of patients with DR and ME. In the initial 3 months of therapy as well as fixed-dose 12 months of therapy, dexamethasone implant was found to provide better vision and reduced CRT than aflibercept. Nevertheless, the dexamethasone implant needed less injection but increased the incidence of elevated intraocular pressure and cataract formation.

Figure 1: Differences in BCVA (logMAR) Changes Between Aflibercept and Dexamethasone Implant Treatment at (A) 3 Months, (B) 6 Months, and (C) 12 Months.



Legend: BCVA: Best-corrected visual acuity; logMAR: Logarithm of the minimum angle of resolution; SD: Standard deviation; CI: Confidence interval.

Figure 2. Differences in CRT Changes Between Aflibercept and Dexamethasone Treatment at (A) 3 Months, (B) 6 Months, and (C) 12 Months.



Legend: CRT: Central retinal thickness; SD: Standard deviation; CI: Confidence interval.

Key Words: Meta-analysis, Diabetic retinopathy, Macular edema, Dexamethasone, Aflibercept, Best-corrected visual acuity, Central retinal thickness.