Commentary: Outcomes of preoperative bevacizumab in diabetics with nonclearing vitreous hemorrhage without tractional detachment – A quasi-randomized retrospective study

Several studies are reporting the beneficial effects of intravitreal bevacizumab (IVB) injected before the planned vitrectomy surgeries for vitreous hemorrhage (VH) in eyes with proliferative diabetic retinopathy (PDR).[1,2] The benefits include reducing postoperative recurrent VH, reducing the need for vitrectomy, rapid clearance of VH, and improvement of best-corrected visual acuity.[1,2] The authors of the study published in the recent issue of the Indian Journal of Ophthalmology must be congratulated to show the extended beneficial effects of IVB in this context on reducing diabetic macular edema (DME).[3] The authors have pragmatically included patients with comparable preoperative baseline characteristics like HbA1C, serum creatinine, insulin dependency; all of which have been proved to affect the DME.[4]

There are certain comments on the current study.[3] First, the authors mention that both the groups of patients, i.e., with or without preoperative IVB were postoperatively

found to be comparable with respect to the optical coherence tomography (OCT) biomarkers like an epiretinal membrane, hyperreflective foci, and ellipsoid zone disruption and irregularity. However, certain biomarkers like cystic cavities suggestive of chronic DME and central plaque-like hard exudates have adverse effects on the vision in the eyes irrespective of the thickness of the central retina. These adverse OCT biomarkers need special observation. From the methodology, we can comprehend that it is difficult to observe the biomarkers preoperatively due to the presence of media opacity in the form of VH. The authors were fortunate enough not to get eyes with the abovementioned adverse biomarkers. Researchers conducting future studies on the role of preoperative IVB on DME in eyes undergoing vitrectomy for diabetic VH may need to be vigilant about these adverse OCT biomarkers. The presence of these adverse biomarkers may warrant either exclusion of the patients or standardization of the study groups concerning these biomarkers. These biomarkers are associated with suboptimal vision gain irrespective of the resolution of DME. Second, the follow-up period of the current study is six months. A longer duration of follow-up will give a better idea about the natural history of DME in these eyes. This is particularly important since many studies find the decreased half-life of the intravitreal injections of anti-VEGF drugs in the eyes which have undergone vitrectomy.[5] Third, the authors have included patients in both groups with comparable baseline criteria. However, the addition of some more factors to these criteria would have made the inclusion of the patients in both the groups more standardized and the analysis more robust. These factors include diastolic blood pressure, hyperlipidemia, age at onset of diabetic retinopathy (DR), cardiovascular diseases, and history of smoking, all affecting the DME.[4]

There are many future perspectives to this current study. First, long-term studies on the effects of IVB on reducing DME in the eyes undergoing vitrectomy for VH related to DR should be carried out. These studies can analyze the visual acuity, the number of injections needed for the treatment of DME postvitrectomy, and recurrence of DME in these eyes over an extended period. Second, the roles of preoperative injection of different intravitreal anti-VEGF agents, e.g., pegaptanib, ranibizumab, bevacizumab, aflibercept, conbercept, and steroids like dexamethasone, have been studied in vitrectomy for diabetic tractional retinal detachments.[6,7] Similar studies assessing the role of preoperative injections of other anti-VEGF agents and steroids need to be explored for their effects on DME. To mention, Ahmad M. Mansour *et al*.[8] studied the effects of ziv-aflibercept on VH in eyes with PDR status post pan-retinal photocoagulation and found its beneficial effects for the therapy of VH.

Ashish A Ahuja, Chitaranjan Mishra[1]

Vitreo Retina Consultant at Sadhu Kamal Eye Hospital, Mumbai, Maharashtra, [1]Department of Vitreo-Retina, Aravind Eye Hospital, Madurai, Tamil Nadu, India

Correspondence to: Dr. Ashish A Ahuja, Vitreo Retina Consultant at Sadhu Kamal Eye Hospital, Room 104, 105, Bldg. No. 2, Navjivan Society, Lamington Road, Mumbai Central, Mumbai - 400 008, Maharashtra, India.
E-mail: drashisheye@gmail.com

References

1. Wirkkala J, Bloigu R, Hautala NM. Intravitreal bevacizumab improves the clearance of vitreous haemorrhage and visual outcomes in patients with proliferative diabetic retinopathy. BMJ Open Ophthalmology 2019;4:e000390.
2. Jorge DM, Tavares Neto JEDS, Poli-Neto OB, Scott IU, Jorge R. Intravitreal bevacizumab (IVB) versus IVB in combination with pars plana vitrectomy for vitreous hemorrhage secondary to proliferative diabetic retinopathy: A randomized clinical trial. Int J Retina Vitreous 2021;7:35.
3. Chakraborty D, Maiti A, Kelkar A, Sengupta S, Roy S, Bolisetty M, *et al*. Outcomes of preoperative bevacizumab in diabetics with nonclearing vitreous hemorrhage without tractional detachment – A quasi-randomized retrospective study. Indian J Ophthalmol 2021;69:3283-7..
4. Klein R, Moss SE, Klein BE, Davis MD, DeMets DL. The wisconsin epidemiologic study of diabetic retinopathy. XI. The incidence of macular edema. Ophthalmology 1989;96:1501-10.
5. García-Quintanilla L, Luaces-Rodríguez A, Gil-Martínez M, Mondelo-García C, Maroñas O, Mangas-Sanjuan V, *et al*. Pharmacokinetics of intravitreal anti-VEGF drugs in age-related macular degeneration. Pharmaceutics 2019;11:365.
6. Iyer SSR, Regan KA, Burnham JM, Chen CJ. Surgical management of diabetic tractional retinal detachments. Surv Ophthalmol 2019;64:780-809.
7. Oellers P, Mahmoud TH. Surgery for proliferative diabetic retinopathy: New tips and tricks. J Ophthalmic Vis Res 2016;11:93-9.
8. Mansour AM, Ashraf M, El Jawhari KM, Farah M, Souka A, Sarvaiya C, *et al*. Intravitreal ziv-aflibercept in diabetic vitreous hemorrhage. Int J Retina Vitreous 2020;6:2.

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