Reviewer’s report

Title: Reoperation Following Vitrectomy for Diabetic Vitreous Hemorrhage With versus Without Preoperative Intravitreal Bevacizumab

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Reviewer: Marc Biarnés

Reviewer's report:

Summary

The authors present a comparison between a consecutive case series of patients with vitreous hemorrhage secondary to proliferative diabetic retinopathy (PDR) treated with preoperative intravitreal bevacizumab (IVB) vs those who were not in terms of need for reoperation. The results suggest that IVB decreases the rate of reoperations in eyes without previous tractional retinal detachment (TRD), but not in those with previous TRD.

Comments:

The manuscript is interesting, addresses a relevant question and is well written. On the other hand, many results are reported and the main outcome is difficult to find within them all. It is unclear why the first stratification factor is the presence of TRD and not the IVB, which is the aim of the authors according to the title; the inclusion of 6 groups and further multiple comparisons makes it difficult for the reader to follow the analysis; I think the paper would benefit from organization of the results into primary and secondary analysis or a reduction of the results reported to deliver a more succinct message.

From the methodological standpoint, probably the most limiting factor is that treatment assignment was not randomized. The analysis should also incorporate methods that account for the correlation between eyes in patients that contribute with both eyes to the analysis.

Specific comments:

- The Abstract should clarify that "B scan" refers to ultrasonography, not to OCT
- Please, clarify if patients included were type I diabetes mellitus, II or both.
- I would strongly suggest that the authors would use less tables and more Kaplan-Meyer graphs to summarize most of the results. The narrative description of the results, with six groups and comparisons between them, makes it difficult to follow the line of reasoning.
- The fact that almost the same number of patients was excluded because of a follow-up less than
180 days as those finally included (293 vs 362, respectively) is a potential source of bias and should be explained further. At a minimum, the baseline features of those with incomplete follow-up should be compared to those included to explore potential reasons for missingness.

- Authors should try to provide an explanation of the criteria used to select one surgical approach or another, so that readers can understand the framework in which comparisons are made.
- Tables could show data overall and by each of the 6 groups, with comparisons of relevant baseline features across subgroups to identify potential confounders. They should also include SD, not range (as specified by the authors in Methods) and would benefit from showing percentages of a given category (for example, females) instead of showing n in each category, which is not so clear. In Table 1, I miss the duration of symptoms and/or time from the diagnosis of VH; would they be available?
- In addition, the use of odds/hazard ratio where appropriate, with 95% CI and p-values, could allow more easy comparisons between groups.
- Authors could add one or two representative images of cases pre and post-treatment.
- From the perspective of the analysis, one or two eyes of the same patient could be included (approximately 80 patients contributed with both eyes to the study). This needs to be addressed by statistical methods that adequately handle this (McNemar tests, GEE or, if not possible, random selection of a single eye from each patient). GEE would have the advantage of multivariable adjustment, which would be an advantage in the setting of an observational study. Using propensity scores would also be an alternative, but limited sample size within subgroups may make this approach unfeasible.
- The Kaplan-Meyer Fig 4 conveys the information stated in the title, but only for those without TRD. I would suggest a similar analyses overall and for those with and without (as it shown) TRD, which would include the hazard ratios, 95% CI and p-values. In addition, the sample size remaining in each 6-month period (for example) would improve the Figures.
- The authors may consider reducing the Discussion section.

**Are the methods appropriate and well described?**
If not, please specify what is required in your comments to the authors.

No

**Does the work include the necessary controls?**
If not, please specify which controls are required in your comments to the authors.

Unable to assess

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