Reviewers report

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

Version: 1  Date: 15 Apr 2019

Reviewer: Jason Crosson

Reviewer's report:

1. Abstract
   a. Methods: The way the groups are described is confusing. I would suggest rewording it something like, "...were divided into a group that received preoperative IVB and a group that did not receive preoperative IVB." To call one group a PPV group is confusing since both groups had PPV.
   b. Results: Similarly, this could be worded better, i.e. "There were 17.4% of eyes in the VH group that did not receive preoperative IVB that later required additional vitrectomy, while only 7.7% of the eyes in the VH group that received preoperative IVB required additional vitrectomy." I would word the sentence about the TRD groups the same way. Instead of "in group TRD without IVB," say, "in the TRD group that did not receive preoperative IVB."

2. Background
   a. Line 7-8. Cryopexy is no longer a "conventional method to treat PDR." I think the authors mean to describe historical methods of PDR treatment. As such, it would be better to say, "Historically, treatment for PDR has included PRP, cryopexy, etc."
   b. Line 21. Should be "have been used widely" rather than "has been used widely."
   c. Line 24. Anti VEGF does not help the actual blood clear faster. Rather, it helps the neovascular vessels regress preventing further bleeding. The VH still has to be cleared by the eye—this may happen faster than otherwise since there will likely be no further active hemorrhage after the injection, but the anti-VEGF does not clear the media. This should be clarified.
   d. Line 38-39. "In recent 10 years" is an unusual way to phrase this. Perhaps the authors mean, "The use of IVB as an adjunct before vitrectomy has been routinely recommended over the last 10 years."
   e. 2nd page of background Line 9-10. What is it about the surgical instruments with small gauge PPV that makes surgery safer? I don't disagree, I just think this needs more description. i.e. smaller, yet more elegantly designed and sturdy.
   f. 2nd page of background Line 17 ish to the end of the paragraph. The purpose is not well described. Isn't the purpose to evaluate the reoperation rate in patients with VH and TRD when preop IVB is given and when it is not given? The way it's worded makes it sound like the authors are trying compare "reoperation of preoperative IVB in VH patients compared with TRD patients without preop IVB." This should be reworded. For example: "The purpose of this study was to evaluate the reoperation rate in patients with VH or TRD in patients that received preoperative IVB versus those who did not receive preoperative IVB."
g. I would also delete the last sentence of the background.

3. Methods
   a. Line 53. I like "IVB+PPV group." I would call the "PPV group", "PPV alone group," or "PPV without IVB." I would make this change throughout the paper.
   b. The timing of when the Avastins were given (median time before PPV etc.) are given later. This should be included in the methods section when the injection technique is described.

4. Results
   a. Line 25 (1st sentence). Should be "We reviewed 1080 patients with VH who had underwent…"
   b. Line 56 under primary outcomes. The numbers here are different than in the abstract. Here it says 71.8% of patients with VH who had preop IVB had no reoperation vs. 69.7% of VH patients who did not have preop IVB. The p value is not significant. In the abstract the numbers for the same group are 17.4 % of the VH without preop IVB that required another PPV vs. 7.7% of eyes in the VH group with preop IVB. The p value is 0.025. Which is it? What is the actual result?
   c. Line 6. I don't think a repeated anti-VEGF treatment should be included as a reoperation.

5. Discussion
   a. Line 20. The Discussion talks about the use of endotamponades. The numbers for each group should be listed in the results. What % of patients needed SO in each group? Gas?
   b. Line 15 on 3rd page of the Discussion: anti VEGF does not promote absorption of VH—it prevents more bleeding.

General comments: I like the idea of this study. It is an extremely relevant topic. Does IVB lower re-op rates in VH and/or TRD patients? This is a great question. I think several points need clarification. Why do the authors include glaucoma surgeries and anti-VEGF injections as re-operations? Glaucoma (unless it is NVG) is not VEGF mediated and anti-VEGF injections are not operations. Also, the fact that you had to use SO and remove it later may be completely unrelated to the use of IVB. The TRD or the VH may have just been associated with worse neovascular traction in that case (where SO endotamponade and later removal was required). It is impossible to account for the initial severity of the pathology in a retrospective review and this needs to be mentioned in the discussion as a limitation. The most important question to me is how many patients needed reop for recurrent VH, recurrent RD/TRD, and perhaps NVG. Reoperations to remove oil, or inject anti-VEGF or treat glaucoma seem less relevant. This should be more clearly highlighted in the paper.

I also think the authors should hypothesize in the paper a bit more about why the TRD group with preop IVB has more re-operations.

As it stands, the authors suggest that we should consider IVB for VH cases but maybe not TRD's, but the numbers contradict each other in places (if I am reading it correctly—could be me!), and, in addition, the main point of the study is not fully developed in the discussion. If the above suggestions are implemented, the numbers clarified, the limitations flushed out a bit, and the main purpose more clearly nailed down—this could be a very helpful paper.
Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.
Yes

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

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.
No

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