Reviewer's report

Title: Prognostic factors for corneal graft recovery after severe corneal graft rejection following penetrating keratoplasty

Version: 2 Date: 3 December 2012

Reviewer: Marianne O Price

Reviewer's report:

This is a well written paper that analyzes prognostic factors for recovery and maintenance of transparency after severe corneal graft rejection following PKP.

Minor Essential Revisions

1. Please explain in detail in Methods what your standard steroid treatment was after PKP to prevent graft rejection. Also please explain in detail what your steroid regimen was after diagnosis of a rejection episode and before initiation of systemic steroids.

2. At least 36 statistical tests were run on the data. Therefore an adjustment to the P-value needs to be made for the multiple comparisons, for example a Bonferroni correction.

3. It is noted that patient age was significantly lower in the cases that recovered graft transparency, yet in Methods it was stated that patients over the age of 70 received half as much steroid dosing. Therefore, patient age was confounded with steroid dosing. This should be made clear in the Abstract, Results and Discussion.

4. Please report the number of cases in this study that had glaucoma. Pre-existing glaucoma has been found to be a risk factor for PKP failure as a result of graft rejection (Risk factors for various causes of failure in initial corneal grafts. Arch Ophthalmol 2003;121:1087-92). Of the 15 patients who developed increased intraocular pressure, please report how many had pre-existing glaucoma vs. how many newly developed steroid responsive glaucoma following the initiation of the systemic steroid treatment.

5. Please clarify throughout the paper (including in the Abstract) that the time from diagnosis of rejection to “treatment” means the time from diagnosis of rejection to initiation of treatment with systemic steroids because the patients were presumably treated with topical steroids as soon as rejection was diagnosed.

6. Most of the paper is very clear and easy to understand with the exception of the last paragraph on page 12 continuing onto page 13. Please clarify if the sentence about “believed to be comparably mild cases” is referring to the Musch study. In the following sentence, should it say “cell loss” instead of “ECD” may have been underestimated? And in which study?
Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:
I do not have any competing interests.