Reviewer’s report

Title: Molecular characterization, biofilm analysis and experimental biofouling study of Fusarium isolates from recent cases of fungal keratitis in New York State

Version: 1 Date: 6 December 2006

Reviewer: Philip A Thomas

Reviewer’s report:

General
Comments for Authors

BMC Ophthalmology

Title of manuscript: Molecular characterisation, biofilm analysis, and experimental biofouling study of Fusarium isolates from recent cases of fungal keratitis in New York State.

Authors: Dyavaiah et al.

The manuscript by Dyavaiah et al. is an interesting and generally well-written description of experiments performed on some isolates of Fusarium solani and Fusarium oxysporum isolated from patients in the Northeastern US during the recent outbreak of contact lens-associated Fusarium keratitis. The inferred research question, which the study proposes to answer, is whether the Fusarium isolates somehow had special properties that nullified the use of ReNu with Moisture Loc. The methods are appropriate and well-described, and have been described in sufficient detail to allow others to replicate the work. The data are sound. The manuscript adheres to the relevant standards for reporting and data deposition. A noteworthy observation made is that the much-maligned contact lens solution, ReNu with MoistureLoc, does exhibit anti-Fusarium activity (even when the solution used is several months old), provided the manufacturer’s instructions are complied with. The discussion and conclusions are well-balanced and adequately supported by the data. In fact, the authors have been cautious in indicating that there is still much that we do not know about the actual factors that led to the outbreak. The title describes the aim of the study. The abstract accurately describes the salient observations made. I believe the manuscript has important information that readers of the journal would find relevant. However, I also believe that the manuscript would be strengthened by performing some revisions.

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Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

No relevant controls were used. Controls would have helped to highlight unique characteristics of the strains of Fusarium solani and Fusarium oxysporum isolated from patients involved in this outbreak. The controls used could have been Fusarium strains isolated from corneal infections, but not isolated during this outbreak (maybe isolates from trauma-associated Fusarium keratitis from other centers), as well as Fusarium isolates from other, non-ocular infections. In addition, a comparison with an important non-Fusarium corneal fungal pathogen, for example Aspergillus fumigatus, might have yielded additional, interesting information.

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Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

Minor essential revisions
Page No. Line No. Comment
3 1st paragraph, line 4 Add 'the' between 'by' and 'yeast'
3 1st paragraph, line 7 Rephrase the beginning of the sentence to "There had been no report until the beginning of 2006…….".
February' and not as written.

"Additional unopened bottles…. local pharmacies". Were these bottles procured before or after the worldwide recall of this product? If after, how were stocks available in the local pharmacies?

"A previous report….." Please cite the report.

"Moisture Loc solutions, purchased from local pharmacies". Same comment as for page 4, lines 9 & 10.

"Experimental biofouling: "A previous report….." Please cite the report.

"Moisture Loc solutions, purchased from local pharmacies". Same comment as for page 4, lines 9 & 10.

Experimental biofouling: "A previous report….." Please cite the report.

"Moisture Loc solutions, purchased from local pharmacies". Same comment as for page 4, lines 9 & 10.

Results

"the supernatant but and not….." Remove 'but' or 'and'

Last line F. oxysporum and not as spelt.

"Different batches of Moisture Loc, procured from local…..". Same comment as for pg. 4, lines 9 & 10.

"….. as long as recommended…..". Add 'the' between 'as' and 'recommended'

"….. the conclusions of many other…..". But only 2 reports are cited!

"inoculated F. solani…..". Please add "with" between 'inoculated' and 'F. solani'

"recovered few colonies of…..". Please add 'a' between 'recovered' and 'few'.

It might be appropriate to rephrase this sentence thus: "These results suggest that at least some occurrences of keratitis could have resulted from temporary contamination….."

"O'Brien", and not as written; add issue number, if you want to make this reference consistent with other references (which have issue numbers)

This reference is not written in the correct format.

Are the authors' names correct and complete? What about issue number?

Add issue number

"O' Donnell" and not as written.

The journal title should be abbreviated.

Write authors' names in correct format.

Reword as "Fusarium colonies were recovered on …"
Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions

Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: No

Declaration of competing interests:
I declare that I have no competing interests