Reviewer’s report

Title: Antibacterial resistance in ophthalmic infections: a multi-centre analysis across UK care settings

Version: 0 Date: 29 May 2019

Reviewer: Rod James

Reviewer’s report:

Thank you for the opportunity to review this well structured article.

This study reviews microbiological specimens submitted to a centralised laboratory and matched detected resistance profiles with current empiric prescribing guidelines.

The study provides good evidence of the increased rates of resistance detected in the isolates obtained for a large proportion of microbiological specimens over 6 years and the requirement to monitor the resistance patterns in local pathogens regularly.

The authors have very clearly outlined the limitations of their study design.

Due to the study design and risk of ascertainment bias for the collection of this type of microbiology data (as highlighted by the authors), where specimens are more likely to be collected if there is empiric treatment failure or more severe disease, inferences should be taken with caution.

Any recommendation to changing the empiric prescribing guidelines would be premature without greater understanding of the numbers of patients presenting with ophthalmic infections that do not progress to having a specimen sent to the microbiology laboratory.

These data are particular important for the primary and secondary care settings where there may be a high proportion of patients presenting who are treated successfully without microbiological sampling. Can the authors provide any insights to the prevalence of ophthalmic infection presentations to these various settings over this study period.

These data from the tertiary care setting may be more complete, as there may be a higher proportion of specimens sent upon presentation with an ophthalmic infection. As Pseudomonas was isolated in such a high proportion of specimens from these tertiary care facilities, not recommending a antimicrobial with anti-Pseudomonal activity for treatment guidelines in this setting is unusual. Can the authors explain why there was no discussion regarding this recommendation.

The recommendation of removing fusidic acid form the empirical prescribing guidelines for children, due to the high proportion of haemophilus detected in this population, would also of more likely value from this study and highlights the need for further investigation into this.
**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.

Unable to assess

**Are the conclusions drawn adequately supported by the data shown?**
If not, please explain in your comments to the authors.

No

**Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?**
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I am able to assess the statistics

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