Reviewer’s report

Title: Vaginal dysbiosis increases risk of preterm fetal membrane rupture, neonatal sepsis and is exacerbated by erythromycin

Version: 0 Date: 06 Nov 2017

Reviewer: Nigel Simpson

Reviewer’s report:

Routine erythromycin administration following PPROM has been an unchallenged mainstay of care since the ORACLE I trial concluded modest but significant benefit existed. Recent progress in our understanding of the pathways contributing to ascending colonisation and intrauterine inflammatory response have, with the advent of sequencing, provided insight into the role of certain community states predisposing to preterm birth. The study builds upon previous work from this group which characterised these relationships, and has examined temporal changes linked with PPROM and the consequences of erythromycin administration on the vaginal microbiota. The methodology was characteristically meticulous and the results helpfully and amply explained. The conclusions are proportionate and justifiably call for reexamination of accepted clinical practice - what we hope to achieve by prescribing erythromycin, if other options might be considered, and indeed whether unfavourable microbiota might be identified and adjusted earlier in pregnancy as a more sensible preventative strategy.

I have no major concerns about the manuscript - short enough for the average reader, but with the additional content sufficiently detailed and open for those who wish to investigate further. I would recommend the consistent treatment of 'data' as plural (p6 line 33; p16 line 55), decapitalising body mass index (p9 lines 47 and 54), clarifying whether progesterone usage or levels were recorded (p9 lines 50 and 57), and correction of 'Unmbilical' to 'Umbilical' in Additional Table 6. I would also recommend the use of more helpful expression in place of the regrettable word 'amniorrhea' which found its way into the manuscript on page 12 (lines 11-27) and returned mercifully briefly on page 19 line 25. I cannot recollect its usage in 30 years of clinical practice. Why not replace with 'membrane rupture', 'liquor loss' etc? (if only to retain each reader's sanity!)

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.

Yes

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

If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I recommend additional statistical review

**Quality of written English**

Please indicate the quality of language in the manuscript:

Acceptable

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