Reviewer’s report

Title: Molecular evidence of Ureaplasma urealyticum and Ureaplasma parvum colonization in preterm infants during respiratory distress syndrome.

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Reviewer: Robert Schelonka

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General
The manuscript entitled “Molecular evidence of Ureaplasma urealyticum and Ureaplasma parvum colonization in preterm infants during respiratory distress syndrome” by Rosario Cultrera, Silva Seraceni, Rossella Germani, Carlo Contini aims to investigate respiratory tract colonization with mycoplasmas and to prove a possible association between RDS and ureaplasma infection. The study is a prospective, cohort analysis of 50 infants with the respiratory distress syndrome in whom the investigators determined Ureaplasma spp and mycoplasma colonization/infection of the respiratory tract by a rapid test, the Mycoplasma Duo, and by an "in house" polymerase chain reaction (PCR) amplification of ureaplasmal DNA. PCR amplicons were directly sequenced and the DNA sequences were aligned with published genomic sequences of U. urealyticum, U. parvum for subspecies identification. Colonization of the lower respiratory tract by Ureaplasma spp. and particularly by U. parvum in preterm newborns was related to RDS. The authors conclude in the abstract that the routine use of molecular methods could be useful to screen candidate babies to etiologic therapy newborns was related to RDS. The authors further conclude in the body of the manuscript that our findings supported that PCR could be a highly sensitive and specific technique to evidence Ureaplasma and it was able to distinguish U. urealyticum from U. parvum directly in clinical specimens. The routinely use of this technique for NICU patients could have a role in more accurately diagnosing infection by U. parvum and U. urealyticum in newborns at risk to develop RDS.

The investigators should be commended for the careful development and testing of the PCR techniques which appear to be more sensitive than the Mycoplasma Duo test. Complicating the interpretation of the results, however, is the lack of a true "gold standard" technique to which the PCR results can be compared. In addition, the finding of Ureaplasma spp. DNA more frequently in the respiratory secretions of infants with RDS lends support to the idea that infection with these organisms promotes a proinflammatory state in the host. This has been suggested in human neonates and shown experimentally in murine and premature baboon animal models.

The manuscript suffers from multiple spelling and grammatical errors and unclear sentence structure. The interpretation and discussion of the results lacks focus which detracts from the sound, scientific findings. The uncontrolled treatment of infected infants with clarithromycin and sparse data on short and long term respiratory outcomes only further dilutes the focus. It is unclear from this manuscript what the utility of accurate diagnosis of ureaplasmal infection is in newborns, unless specific antimicrobial treatment is contemplated which might modify the course of RDS or the subsequent development of bronchopulmonary dysplasia. If that is the authors' intent, it should be so stated.

What next?: Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Not suitable for publication unless extensively edited

Statistical review: No

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