



UNIVERSITY OF LEEDS

This is a repository copy of *Survival of Mycobacterium abscessus in artificially generated aerosols*.

White Rose Research Online URL for this paper:  
<http://eprints.whiterose.ac.uk/102060/>

Version: Accepted Version

---

**Proceedings Paper:**

Fletcher, LA, Chen, Y, Whitaker, P et al. (3 more authors) (2016) Survival of Mycobacterium abscessus in artificially generated aerosols. In: Journal of Cystic Fibrosis. 39th European Cystic Fibrosis Conference, 08-11 Jun 2016, Basel, Switzerland. Elsevier , S77-S77.

[https://doi.org/10.1016/S1569-1993\(16\)30340-X](https://doi.org/10.1016/S1569-1993(16)30340-X)

---

© 2016 European Cystic Fibrosis Society. Published by Elsevier B.V. Licensed under the Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International  
<http://creativecommons.org/licenses/by-nc-nd/4.0/>

**Reuse**

Items deposited in White Rose Research Online are protected by copyright, with all rights reserved unless indicated otherwise. They may be downloaded and/or printed for private study, or other acts as permitted by national copyright laws. The publisher or other rights holders may allow further reproduction and re-use of the full text version. This is indicated by the licence information on the White Rose Research Online record for the item.

**Takedown**

If you consider content in White Rose Research Online to be in breach of UK law, please notify us by emailing [eprints@whiterose.ac.uk](mailto:eprints@whiterose.ac.uk) including the URL of the record and the reason for the withdrawal request.



[eprints@whiterose.ac.uk](mailto:eprints@whiterose.ac.uk)  
<https://eprints.whiterose.ac.uk/>

Submitted to 39<sup>th</sup> European Cystic Fibrosis conference, Basel, June 2016

## **Survival of *Mycobacterium abscessus* in artificially generated aerosols**

L.A. Fletcher, Y. Chen, P. Whitaker, D.G. Peckham, M. Denton, I. Clifton

**Objectives:** There is emerging evidence supporting the possibility of airborne routes for transmission for *Pseudomonas aeruginosa* and *Burkholderia cepacia* complex between people with CF. More recently *M. abscessus* has emerged as a potentially important pathogen in people with CF with evidence of accelerated lung function decline [2].

The aim of this study was to determine whether *M. abscessus* could survive within artificially demonstrated aerosols using a previously described laminar airflow model [1].

**Methods:** Five strains of *M. abscessus* isolated from patients with CF and a reference strain were studied. Aerosols were generated using a Collison 3-jet nebuliser, delivered into an airtight pipe of varying lengths and sampled using an Andersen 6-stage impactor as previously described [1].

**Results:** All the strains studied were able to produce viable aerosols of *M. abscessus* which survived 81 s and travelled a distance of 4 m. All the aerosols contained particles which were predominantly less than 2 mm in diameter.

**Conclusion:** This study demonstrates that *M. abscessus* can survive within artificially generated aerosols in particles within the respirable range. Cross-infection of *M. abscessus* between people with CF could potentially occur via an airborne route. The survival of *M. abscessus* within the laminar airflow model was very similar to that of *P. aeruginosa* [1]. These results have important implications for the care

of people with CF and reinforces the need for strict infection control practices to minimise the risk of cross-infection which pathogens such as *M. abscessus*.

### **Reference(s)**

[1] Clifton et al. BMC Microbiol 2008.

[2] Esther et al. J Cyst Fibros 2010.