12. Molyneaux PL, Willis-Owen SAG, Cox MJ, James P, Cowman S, Loebinger M, *et al.* Host-microbial interactions in idiopathic pulmonary fibrosis. *Am J Respir Crit Care Med* 2017;195:1640–1650.
13. Molyneaux PL, Fahy WA, Byrne AJ, Braybrooke R, Saunders P, Toshner R, *et al.* CYFRA 21-1 predicts progression in idiopathic pulmonary fibrosis: a prospective longitudinal analysis of the PROFILE cohort. *Am J Respir Crit Care Med* 2022;205:1440–1448.
14. Hu J, Ma L, Nie Y, Chen J, Zheng W, Wang X, *et al.* A microbiota-derived bacteriocin targets the host to confer diarrhea resistance in early-weaned piglets. *Cell Host Microbe* 2018;24:817–832.e8.

Integrating Aerodigestive Investigations in Progressive Pulmonary Fibrosis

Chris Ward[1], Amal Alamer[1,2], Rhys Jones[3], Michelle Lawton[4], Mike Griffin[5], Michael Drinnan[6], Ian Forrest[7], and Joanne Patterson[4]

[1]Translational and Clinical Research Institute, School of Medical Sciences, Newcastle University, Newcastle upon Tyne, United Kingdom; [2]Respiratory Care, Imam Abdulrahman Bin Faisal University, Dammam, Saudi Arabia; [3]Upper Gastrointestinal and General Surgery, South Tees Hospitals NHS Foundation Trust, Middlesbrough, United Kingdom; [4]School of Health Sciences, University of Liverpool, Liverpool, United Kingdom; [5]Royal College of Surgeons of Edinburgh, Edinburgh, Scotland; [6]School of Health and Life Sciences, Teesside University, Middlesbrough, United Kingdom; and [7]Royal Victoria Infirmary, The Newcastle upon Tyne Hospitals NHS Foundation Trust, Newcastle upon Tyne, United Kingdom

ORCID ID: 0000-0002-6954-9611 (C.W.).

To the Editor:

We read with interest the paper by O'Dwyer and colleagues evaluating novel associations between buccal swab oral microbiota, percentage predicted FVC, and death in 511 people with idiopathic pulmonary fibrosis (IPF), from the multicenter CleanUP-IPF study. This suggests an underappreciated role of oral microbiota (1).

The authors showed that increased buccal microbial diversity occurred with lower baseline FVC and increased mortality risk. Interestingly, a greater proportion of *Streptococcus*, mainly composed of *Streptococcus mitis*, was associated with a reduced risk. The authors discussed "the potential for a critical pathogenic oral and pulmonary interconnection for *Streptococcus* in IPF" and that "the data suggest that other unknown factors are also contributing" (1).

In progressive pulmonary fibrosis, including IPF, there is evidence of interrelated esophageal dysregulation (2, 3), gastroesophageal reflux disease (2, 4, 5), and reflux-associated aspiration (2, 4) in patients, who are often elderly. We have also described dysregulated swallowing, including vocal cord penetration in videofluoroscopic assessments (6). We congratulate the authors for providing rare and novel data on oral microbiota in IPF and wonder if they have comments on how this may integrate in an overall consideration of aerodigestive involvement, including the potential for dysphagia in some. ■

Author disclosures are available with the text of this letter at www.atsjournals.org.

Correspondence and requests for reprints should be addressed to Chris Ward, B.Sc., M.Phil., Ph.D., Newcastle University Translational and Clinical Research Institute, Newcastle University, Newcastle upon Tyne NE1 7RU, UK. Email: chris.ward@newcastle.ac.uk.

References

1. O'Dwyer DN, Kim JS, Ma SF, Ranjan P, Das P, Lipinski JH, *et al.* Commensal oral microbiota, disease severity, and mortality in fibrotic lung disease. *Am J Respir Crit Care Med* 2024;209:1101–1110.
2. Jones R, Krishnan A, Zeybel GL, Dookun E, Pearson JP, Simpson AJ, *et al.* Reflux in idiopathic pulmonary fibrosis: treatment informed by an integrated approach. *ERJ Open Res* 2018;4:00051-02018.
3. Rangan V, Borges LF, Lo WK, Gavini S, Bailey M, Hathorn KE, *et al.* Novel advanced impedance metrics on impedance-pH testing predict lung function decline in idiopathic pulmonary fibrosis. *Am J Gastroenterol* 2022;117:405–412.
4. Savarino E, Carbone R, Marabotto E, Furnari M, Sconfienza L, Ghio M, *et al.* Gastro-oesophageal reflux and gastric aspiration in idiopathic pulmonary fibrosis patients. *Eur Respir J* 2013;42:1322–1331.
5. Newton CA, Noth I, Raghu G. Gastro-oesophageal reflux and idiopathic pulmonary fibrosis: sorting the chicken and the egg by genetic link. *Eur Respir J* 2023;62:2301878.
6. Alamer A, Jones R, Drinnan M, Simpson AJ, Griffin M, Patterson JM, *et al.* Oropharyngeal swallowing physiology and safety in patients with idiopathic pulmonary fibrosis: a consecutive descriptive case series. *BMC Pulm Med* 2022;22:422.

Reply to Ward *et al.*: Integrating Aerodigestive Investigations in Progressive Pulmonary Fibrosis

David N. O'Dwyer[1], John S. Kim[2], and Imre Noth[2]

[1]Division of Pulmonary and Critical Care Medicine, University of Michigan, Ann Arbor, Michigan; and [2]Division of Pulmonary and Critical Care Medicine, University of Virginia, Charlottesville, Virginia

ORCID ID: 0000-0003-3214-380X (D.N.O.).

From the Authors:

The oral microbiome consists of complex and distinct host microbial habitats that are known to associate with oral disease (1). Recently,

Supported by the Northern Oesophago-Gastric Fund, Health Education England/National Institute for Health Research, Advanced Clinical and Practitioner Academic Fellowship, Boehringer Ingelheim, and Technology Strategy Board grant KTP008821. Ph.D., project funding from Imam Abdulrahman Bin Faisal University, Saudi Arabia, and Saudi Arabian Cultural Bureau, London.

Originally Published in Press as DOI: 10.1164/rccm.202405-1008LE on June 28, 2024

Supported by NHLBI grants R01 HL162659 (to D.N.O.), K23HL150301 (to J.S.K.), and UH3 HL145266 and R01 HL130796 (to I.N.).

Originally Published in Press as DOI: 10.1164/rccm.202406-1123LE on June 28, 2024