

## **Online Supplement**

### ***Aspergillus fumigatus* during stable state and exacerbations of chronic obstructive pulmonary disease**

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**Table E1;** Identification and incidence of non *A. fumigatus* filamentous fungi cultured from the sputum of patients with COPD at stable state or during an exacerbation event. Isolates were either the only filamentous fungi cultured (mono), grew in co-culture with *A. fumigatus* (co-Af), or in co-culture with other filamentous fungi listed but not *A. fumigatus* (co-other).

Genus	Species/taxonomic identifier	Stable			Exacerbation		
		Mono	co-Af	co-other	Mono	co-Af	co-other
<i>Aspergillus</i>	<i>A. niger</i>	7	5	1	5	4	
	<i>A. terreus</i>		1	1			
	<i>A. hiratsukae</i>	1					
	section Nidulantes (species undetermined)	2	2		2	2	
	section Flavi (species undetermined)	1					
	species undetermined	2	2	1	1		
<i>Penicillium</i>	<i>P. capsulatum</i> ,	1					
	<i>P. diversum</i>	1					
	<i>P. piceum</i>	6	3	1	3	1	
	species undetermined	1	2		1	1	
<i>Paecilomyces</i>	species undetermined	1	2				
<i>Fusarium</i>	<i>F. dimerum</i>	1					
<i>Rhizopus</i>	<i>R. arrhizus</i>	1					
Zygomycete	genus & species undetermined		3				
<i>Lichtheimia</i>	<i>L. ramosa</i>					1	
<i>Hyphodontia</i>	<i>H. palmae</i>	1					
	mould, not further classified	3					

**Table E2;** Change in airway physiology, and health status in patients with COPD that acquire or do not acquire a fungus, in patients with bacteria associated exacerbation

<b>Bacteria associated exacerbations</b>					
	Acquisition of <i>Aspergillus fumigatus</i>	No <i>Aspergillus fumigatus</i> detected at either visit	<i>Aspergillus</i> <i>fumigatus</i> detected at both visits	Loss of <i>Aspergillus</i> <i>fumigatus</i>	p-value
$\Delta$ FEV <sub>1</sub> , L	-0.15 (-0.38 to 0.08)	-0.17 (-0.25 to -0.09)	-0.32 (-0.69 to 0.06)	-0.19 (-0.31 to -0.08)	0.69
$\Delta$ FEV <sub>1</sub> % predicted	-14 (-35 to 8)	-14 (-20 to -8)	-20 (-37 to -4)	-14 (-23 to -5)	0.83
$\Delta$ CRQ <sub>total</sub>	-0.9 (-1.9 to 0.0)	-0.8 (-1.1 to -0.4)	-0.4 (-1.0 to 0.2)	-0.6 (-1.1 to -0.1)	0.66
$\Delta$ VAS <sub>cough</sub>	39 (29 to 50)	23 (10 to 36)	15 (0 to 31)	20 (-1 to 41)	0.68
$\Delta$ VAS <sub>dyspnoea</sub>	35 (19 to 51)	17 (6 to 27)	7 (-12 to 27)	18 (6 to 30)	0.37
$\Delta$ VAS <sub>sputum production</sub>	22 (-10 to 53)	21 (9 to 34)	21 (9 to 33)	23 (10 to 35)	0.99
$\Delta$ VAS <sub>sputum purulence</sub>	28 (-25 to 82)	30 (17 to 43)	28 (9 to 47)	28 (11 to 44)	0.99

Data presented as mean change (95% confidence interval) unless stated. ¶ geometric mean (95% confidence interval).  $\Delta$  change from baseline.; FEV<sub>1</sub> Forced expiratory volume in 1 second; CRQ Chronic respiratory health questionnaire; VAS Visual analogue scale;

**Table E3;** Change in airway physiology, health status and airway inflammation in patients with COPD that acquire or do not acquire a fungus, in exacerbations not associated with bacteria

<b>Non bacteria associated exacerbations</b>					
	Acquisition of <i>Aspergillus</i> <i>fumigatus</i>	No <i>Aspergillus</i> <i>fumigatus</i> detected at either visit	<i>Aspergillus</i> <i>fumigatus</i> detected at both visits	Loss of <i>Aspergillus</i> <i>fumigatus</i>	p-value
Δ FEV <sub>1</sub>	-0.06 (-0.18 to 0.04)	-0.30 (-0.43 to -0.17)	-0.26 (-0.71 to 0.19)	-0.11 (-0.25 to 0.02)	0.31
Δ FEV <sub>1</sub> % predicted	-4 (-13 to 7)	-20 (-28 to -12)	-18 (-45 to 10)	-14 (-36 to 7)	0.40
Δ CRQ <sub>total</sub>	-0.8 (-1.8 to 0.1)	-0.7 (-1.1 to -0.3)	-1.0 (-2.1 to 0.2)	-0.8 (-1.3 to -0.3)	0.94
Δ VAS <sub>cough</sub>	36 (18 to 54)	25 (13 to 37)	35 (-14 to 83)	28 (-2 to 58)	0.80
Δ VAS <sub>dyspnoea</sub>	23 (2 to 44)	26 (16 to 35)	39 (-39 to 116)	23 (13 to 33)	0.87
Δ VAS <sub>sputum production</sub>	11 (-22 to 43)	11 (2 to 24)	66 (58 to 74)	36 (3 to 69)	0.13
Δ VAS <sub>sputum purulence</sub>	40 (10 to 71)	5 (-9 to 19)	4 (-7 to 99)	21 (-2 to 44)	0.15

Data presented as mean (standard error of the mean) unless stated. ‡ median (interquartile range); ¶ geometric mean (95% confidence interval). Δ change from baseline; FEV<sub>1</sub> Forced expiratory volume in 1 second; CRQ Chronic respiratory health questionnaire; VAS Visual analogue score; † post bronchodilator