

Table S1. STRAf Genotyping Multiplex PCRs and Corresponding Primer Sets [16]

Multiplex PCR Name	Sequence (5' to 3')	
	Forward	Reverse
M2	STRAf-2A	6FAM-AAGGGTTATGGCCATTAGGG
	STRAf-2B	VIC-TATTGGATCTGCTCCCAAGC
	STRAf-2C	NED-TCGGAGTAGTTGCAGGAAGG
M3	STRAf-3A	6FAM-GCTTCGTAGAGCGGAATCAC
	STRAf-3B	VIC-CAACTTGGTGTGTCAGCGAAGA
	STRAf-3C	NED-GGTTACATGGCTTGGAGCAT
M4	STRAf-4A	6FAM-TTGTTGGCCGCTTTTACTTC
	STRAf-4B	VIC-CGTAGTGACCTGAGCCTTCA
	STRAf-4C	NED-CATATTGGGAAACCCACTCG

Table S2. Bacterial and Viral Co-Infections

Type of Infection	Pre- <i>Aspergillus</i> Isolation ¹ N: 52 (%)	Post- <i>Aspergillus</i> isolation ² N: 52 (%)	p- value ³	Pre- and post- <i>Aspergillus</i> isolation episodes in LT-recipients N: 78 (%) ⁴	Pre- and post- <i>Aspergillus</i> isolation episodes in non-LT recipients N: 26 (%) ⁴	p- value ⁵
Bacterial						
<i>Pseudomonas</i> <i>spp.</i>	15 (28.8)	13 (25.0)	0.66	12 (15.4)	16 (61.5)	<0.01
<i>S. aureus</i>	7 (13.5)	11 (21.2)	0.30	16 (20.5)	3 (11.5)	0.31
Other gram positive ⁶	1 (1.9)	5 (9.6)	0.09	5 (6.4)	1 (3.8)	0.62
Other gram negative ⁷	7 (13.5)	6 (11.5)	0.76	11 (14.1)	2 (7.7)	0.40
Viral						
CMV	0 (0.0)	5 (9.6)	0.06	5 (6.4)	0 (0.0)	0.33
RVI ⁸	2 (3.8)	5 (9.6)	0.24	6 (7.7)	1 (3.8)	0.19

¹Defined as isolation of another organism in the 90 days prior to the index *A. fumigatus* isolation.

²Defined as isolation of another organism in the 90 days post the index *A. fumigatus* isolation. ³P-value for difference between pre-*A. fumigatus* and post-*A. fumigatus* isolation of another organism.

⁴Represents the time-periods of 90 days pre- plus the 90 days post-*Aspergillus fumigatus* isolation.

⁵P-value for difference between lung transplant and non-lung transplant chronic respiratory disease patients. ⁶Other gram-positive organisms: Pre-*Aspergillus fumigatus* isolation: *Staphylococcus cohnii* (n=1). Post-*Aspergillus fumigatus* isolation: *Enterococcus faecium* (n=3), *S. epidermidis* (n=1), *Streptococcus pneumoniae* (n=1). ⁷Other gram-negative organisms: Pre-*Aspergillus fumigatus* isolation: *Enterobacter aerogenes* (n=2), *Stenotrophomonas spp.* (n=2), *Serratia marcescens* (n=2), *Klebsiella pneumoniae* (n=1). Post-*Aspergillus fumigatus* isolation: *Stenotrophomonas spp.* (n=2), *Acinetobacter spp.* (n=2), *Klebsiella pneumoniae* (n=1), *Sphingomonas paucimobilis* (n=1). ⁸Respiratory viruses: Pre-*Aspergillus fumigatus* isolation: Influenza A (n=1), Picornavirus (n=1). Post-*Aspergillus fumigatus* isolation: Picornavirus (n=4), Human metapneumovirus (n=1). CMV, cytomegalovirus; RVI, respiratory virus infection; *S. aureus*, *Staphylococcus aureus*.

Table S3. Discriminatory Power for Each STRAf Marker and Their Combinations.

Marker Combination	Number of Genotypes	<i>D-Value</i>¹
M2	39	0.9869
M3	43	0.992
M4	35	0.9819
M2+M3	45	0.9942
M2+M4	43	0.9927
M3+M4	44	0.9935
M2+M3+M4	45	0.9942

¹D-value calculated using Simpson's Diversity Index

Table S4. Clinical Outcomes 6- and 12-months post-*Aspergillus fumigatus* Isolation.

Infection type/responses to therapy	Overall N: 52 (%)	Lung Transplant N: 39 (%)	Non-Lung transplant CRD N: 13 (%)	p-value ¹	1 Nov 2006-31 Mar 2009 N: 25 (%)	1 Nov 2015- 30 Jun 2017 N: 27 (%)	p-value ²
Colonisation							
6-Months³							
Responses to therapy							
Eradication	30 (57.6)	19 (48.7)	11 (84.6)	0.023	18 (72.0)	12 (44.4)	0.15
Persistence	2 (3.8)	2 (5.1)	0 (0.0)	1	0 (0.0)	2 (7.4)	0.49
Recurrence	1 (1.9)	0 (0.0)	1 (7.7)	0.25	1 (4.0)	0 (0.0)	1
Progression to invasive fungal disease	0 (0.0)	0 (0.0)	0 (0.0)	1	0 (0.0)	0 (0.0)	1
All-cause mortality	4 (7.7)	3 (7.7)	1 (7.7)	1	2 (8.0)	2 (7.4)	1
12-Months⁴							
Responses to therapy							
Eradication	28 (53.8)	17 (43.6)	11 (84.6)	0.012	17 (68.0)	11 (40.7)	0.058
Persistence	2 (3.8)	2 (5.1)	0 (0.0)	1	0 (0.0)	2 (7.4)	0.49
Recurrence	3 (5.8)	2 (5.1)	1 (7.7)	1	2 (8.0)	1 (3.7)	0.60
Progression to invasive fungal disease	0 (0.0)	0 (0.0)	0 (0.0)	1	0 (0.0)	0 (0.0)	1
All-cause mortality	4 (7.7)	3 (7.7)	1 (7.7)	1	2 (8.0)	2 (7.4)	1
Invasive Aspergillosis⁵							
6-Months³							
Responses to therapy							
Complete response	7 (13.5)	7 (17.9)	0 (0.0)	-	1 (4.0)	6 (22.2)	0.10
Partial response	1 (1.9)	1 (2.6)	0 (0.0)	-	0 (0.0)	1 (3.7)	1
Stable disease	2 (3.8)	2 (5.2)	0 (0.0)	-	1 (4.0)	0 (0.0)	0.48
Progressive disease	1 (1.9)	1 (2.6)	0 (0.0)	-	0 (0.0)	1 (3.7)	1
All-cause mortality	5 (9.6)	5 (12.8)	0 (0.0)	-	3 (12.0)	3 (11.1)	1

12-Months⁴**Responses to therapy**

Complete response	7 (13.5)	7 (17.9)	0 (0.0)	-	1 (4.0)	6 (22.2)	0.10
Partial response	1 (1.9)	1 (2.6)	0 (0.0)	-	0 (0.0)	1 (3.7)	1
Stable disease	1 (1.9)	1 (2.6)	0 (0.0)	-	0 (0.0)	1 (3.7)	1
Progressive disease	0 (0.0)	0 (0.0)	0 (0.0)	-	0 (0.0)	0 (0.0)	1
All-cause mortality	7 (13.5)	7 (17.9)	0 (0.0)	-	4 (16.0)	3 (11.1)	0.69

¹P-value is for difference between lung transplant and non-lung transplant chronic respiratory disease.²P-value is for difference between 1 Nov 2006-31 Mar 2009 and 1 Nov 2015-30 Jun 2017 cohorts.³6-months post-*Aspergillus fumigatus* isolation. ⁴12-months post-*Aspergillus fumigatus* isolation. ⁵Tracheobronchitis and bronchial anastomotic infections classified under invasive aspergillosis [39].