

# **Obstructive sleep apnoea and related comorbidities in incident idiopathic pulmonary fibrosis**

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## **Online Supplementary Material**

### **Methods:**

**Characteristics of subjects not included in the study:** among the 60 subjects eligible for the study, 49 agreed to participate and signed informed consent, and 11 refused to participate. However, 4 subjects withdrew consent before undergoing overnight polysomnography. Finally, 45 subjects were included in the study and 15 were not. Demographic and pulmonary function testing (PFT) characteristics were comparable in the study population and in the group of not included subjects, except that not included subjects were slightly older than included subjects ( $73.5 \pm 13.5$  versus  $68.8 \pm 8.7$  yrs,  $p=0.02$ ).

**Rules for scoring respiratory events.** Respiratory events were scored by board-certified sleep medicine physicians according to the American Academy of Sleep Medicine 2007 guidelines [27]. Briefly, an obstructive apnoea was defined as a cessation of airflow ( $\geq 90\%$  compared with baseline) lasting at least 10 s in which there was persistence of respiratory efforts. Hypopnoea was defined as a decrease in airflow of 50% to 90% lasting at least 10 s with either an  $O_2$  desaturation  $\geq 3\%$  and/or and EEG arousal. OSA was defined as an AHI  $>$

5 events per hour of sleep. OSA was considered mild if AHI was  $\geq 5/h$  but  $< 15/h$ , moderate if AHI was  $\geq 15/h$  but  $< 30/h$ , and severe if AHI was  $\geq 30/h$ .

**Supplementary Table E1.** Demographic and PFT characteristics of subjects explored by HRCT.

Characteristics	No OSA or mild OSA (AHI<15) [n = 12]	Moderate OSA (15≤AHI<30) [n = 8]	Severe OSA (AHI≥30) [n = 14]	<i>p</i> value
Age yrs	65.8 ± 8.6	72.7 ± 7.9	68.9 ± 9	0.22
Male/Female	9/3	7/1	14/0	0.14
BMI kg.m <sup>-2</sup>	28.7 ± 2.2	27.2 ± 4.1	28.3 ± 4	0.65
Smoking status n (%)				0.05
Never smoker	3 (25%)	5 (62.5%)	1 (7.1%)	
Former smoker	5 (41.7%)	2 (25%)	10 (71.4%)	
Current smoker	4 (33.3%)	1 (12.5%)	3 (21.4%)	
AHI events.h <sup>-1</sup>	9.7 ± 4.1	22.5 ± 3.9	61.9 ± 28.4	<b>&lt; 0.0001</b>
ODI events.h <sup>-1</sup>	4.8 ± 5.2	10.1 ± 4.4	52.7 ± 39.6	<b>0.0003</b>
FVC %	71.8 ± 17.9	65 ± 20.2	70.3 ± 13.2	0.66
DLCO %	48 ± 23.8	41.8 ± 18.3	41.2 ± 16.9	0.66

Data are given as means ± SD, or number and %. BMI, body mass index; AHI, apnoea-hypopnoea index; ODI, oxygen desaturation index (≥3%); FVC, forced vital capacity; DLCO, diffusion capacity of carbon monoxide.

**Supplementary Table E2.** Demographic and PFT characteristics of subjects with blood sampling.

Characteristics	No OSA or mild OSA (AHI<15) [n = 13]	Moderate OSA (15≤AHI<30) [n = 5]	Severe OSA (AHI≥30) [n = 11]	<i>p</i> value
Age yrs	66.5 ± 8.7	71 ± 8.1	71.7 ± 10.2	0.36
Male/Female	10/3	4/1	11/0	0.24
BMI kg.m <sup>-2</sup>	28.5 ± 0.9	26.9 ± 2.2	28 ± 4.2	0.96
Smoking status n (%)				0.05
Never smoker	3 (13%)	4 (80%)	1 (9.1%)	
Former smoker	6 (46.1%)	1 (20%)	7 (63.6%)	
Current smoker	4 (30.8%)	0 (0%)	3 (27.3%)	
AHI events.h <sup>-1</sup>	9.9 ± 4.1	24.4 ± 2.4	56.6 ± 17.6	<b>&lt; 0.0001</b>
ODI events.h <sup>-1</sup>	5 ± 5.2	10.9 ± 5.7	40 ± 20.7	<b>&lt; 0.0001</b>
FVC %	72.6 ± 17.4	75.8 ± 11.2	79.6 ± 22.4	0.66
DLCO %	47.7 ± 22.8	48.3 ± 20	43.1 ± 18.8	0.84

Data are given as means ± SD, or number and %. BMI, body mass index; AHI, apnoea-hypopnoea index; ODI, oxygen desaturation index (≥3%); FVC, forced vital capacity; DLCO, diffusion capacity of carbon monoxide.

**Legend of supplementary Figure S1.** Scatter plots of AHI with BMI (A), age (B), FVC (C), TLC (D), FEV<sub>1</sub> (E) and DLCO (F). Each data point represents one study subject (n=45). Regression lines (black lines) and Pearson correlation coefficients are indicated.

Supplementary Fig S1

