**Multi-dimensional assessment of idiopathic pulmonary fibrosis across a wide range of disease severity**

Hana Serajeddini1, Paola Rogliani2, Marco Mura1,3

1Division of Respirology, Western University, London, Ontario, Canada

2Malattie Respiratorie, University of Rome “Tor Vergata”, Rome, Italy

3Division of Respirology, University Health Network, Toronto, Ontario, Canada

**Supplemental Figure 1**.



**Supplemental Figure 1 legend**. Relationship between FVC (% pred) and 6MWD (% pred).

**SUPPLEMENTAL TABLES**

**Supplemental Table 1A**. Stepwise regression analysis: predictors of MRCDS.

|  |  |  |  |
| --- | --- | --- | --- |
|  | **F ratio** | **p value** | **VIF** (with MRCDS) |
| **6MWD** (% pred | 45.6 | <0.0001 | 1.30 |
| **FVC** (% pred) | 19.3 | <0.0001 | 1.14 |
| **DLCO** (% pred) | 16.4 | <0.0001 | 1.20 |

**Supplemental Table 1B**. Stepwise regression analysis: predictors of 6MWD (% pred).

|  |  |  |  |
| --- | --- | --- | --- |
|  | **F ratio** | **p value** | **VIF** (with6MWD % pred) |
| **MRCDS** | 45.6 | <0.0001 | 1.30 |
| **DLCO** (% pred) | 23.5 | <0.0001 | 1.18 |
| **FVC** (% pred) | 11.3 | <0.0009 | 1.17 |

**Supplemental Table 1C**. Stepwise regression analysis (predictors of FVC % pred). DLCO % pred was not retained as a significant predictor.

|  |  |  |  |
| --- | --- | --- | --- |
|  | **F ratio** | **p value** | **VIF** (withFVC % pred) |
| **MRCDS** | 24.9 | <0.0001 | 1.33 |
| **6MWD** (% pred) | 19.2 | <0.0001 | 1.33 |

Abbreviations as in Table 1 and 2.

**Supplemental Table 2**. Multivariate regression analysis, independent predictors (ordinal variables with cutoffs identified by ROC analysis) of 18-month mortality.

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Hazard Ratio** (C.I.) | **p value** | **Chi Square of the model** |
| **Model 1*** **MRCDS >3**
* **6MWD m ≤333**
* **FVC % ≤58**
 | * 1.39 (1.05-1.83)
* 1.71 (1.31-2.25)
* 1.97 (1.50-2.59)
 | * 0.0206
* 0.0001
* < 0.0001
 | 74.2 |
| **Model 1*** **MRCDS >3**
* **6MWD % ≤68**
* **FVC % ≤58**
 | * 1.33 (1.01-1.75)
* 1.92 (1.47-2.52)
* 1.93 (1.47- 2.55)
 | * 0.0450
* < 0.0001
* < 0.0001
 | 80.4 |
| **Model 2*** **MRCDS >3**
* **6MWD % ≤68**
* **DLCO %≤37**
 | * 1.65 (1.21-2.23)
* 2.05 (1.50-2.79)
* 1.22 (0.67-1.66)
 | * 0.0015
* <0.0001
* n.s.
 | 50.9 |

\*VIF seen in table 3 were all very low suggesting independent predictive value of variables. Abbreviations as in Table 1 and 2.

**Supplemental Table 3**. Multivariate regression analysis, independent predictors (continuous variables) of 18-month mortality, in patients stratified according to FVC % pred.

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Hazard Ratio** (C.I.) | **p value** | **Chi Square of the model** |
| **FVC <57% pred** (n=206)* **MRCDS**
* **6MWD** (m)
* **FVC** (% pred)
 | * 1.08 (0.88-1.33)
* 0.99 (0.99-0.99)
* 0.98 (0.96-0.99)
 | * n.s.
* <0.0001
* 0.0282
 |  47.8 |
| **FVC ≥57% pred**(n=231)* **MRCDS**
* **6MWD** (m)
* **FVC** (% pred)
 | * 1.80 (1.42-2.30)
* 0.99 (0.99-0.99)
* 0.98 (0.96-0.99)
 | * <0.0001
* 0.0005
* 0.0018
 |  67.2 |

**Supplemental Table 4.** Univariate regression analysis. Predictors of 18-month mortality, considering LTx as competing event.

|  |  |  |
| --- | --- | --- |
| **Variables** | **Hazard Ratio** (C.I.) | **p value** |
| **Age****Age ≤70** | 1.04 (1.02-1.06)0.63 (0.42-0.95) | <0.00010.0260 |
| **BMI****BMI ≤28** | 0.96 (0.92-1.01)1.28 (0.86-1.90) | n.s.n.s. |
| **MRCDS** **MRCDS >3** | 2.18 (1.70-2.78)4.01 (2.74-6.02) | <0.0001<0.0001 |
| **6MWD m** **6MWD m ≤333** | 0.99 (0.99-1.00)3.99 (2.52-6.30) | <0.0001<0.0001 |
| **6MWD** % pred**6MWD ≤68** % pred | 0.97 (0.97-0.98) 3.12 (2.04-4.79) | <0.0001<0.0001 |
| **FVC** % pred **FVC ≤58** % pred |  0.99 (0.98-1.00)1.40 (0.95-2.07) | <0.0001n.s. |
| **DLCO** % pred**DLCO ≤37** % pred | 0.95 (0.94-0.97)4.47 (2.76-7.24) | <0.0001<0.0001 |

 n.s. = not significant. Abbreviations as in Table 1.

**Supplemental Table 5A**. Multivariate regression analysis, independent predictors (continuous variables) of 18-month mortality, considering LTx as competing event.

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Hazard Ratio** (C.I.) | **p value** | **Chi Square** **of the model** |
| **Model 1*** **MRCDS**
* **6MWD** (m)
* **FVC** (% pred)
 | * 1.60 (1.19-2.14)
* 0.99 (0.99-1.00)
* 1.00 (0.99-1.01)
 | * 0.002
* <0.001
* n.s.
 | 57.3 |
| **Model 2*** **MRCDS**
* **6MWD** (% pred)
* **FVC** (% pred)
 | * 1.70 (1.27-2.29)
* 0.98 (0.97-0.99)
* 1.01 (1.00-1.02)
 | * <0.001
* <0.001
* n.s.
 | 50.1 |
| **Model 3*** **MRCDS**
* **6MWD** (% pred)
* **DLCO** (% pred)
 | * 1.84 (1.33-2.54)
* 0.99 (0.98-1.00)
* 0.98 (0.97-1.00)
 | * <0.001
* 0.011
* 0.060
 | 55.3 |

n.s. = not significant. Abbreviations as in Table 1.

**Supplemental Table 5B**. Multivariate regression analysis, independent predictors (ordinal variables with cutoffs identified by ROC analysis) of 18-month mortality, considering LTx as competing event.

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Hazard Ratio** (C.I.) | **p value** | **Chi Square** **of the model** |
| **Model 1*** **MRCDS >3**
* **6MWD m ≤333**
* **FVC % ≤58**
 | * 2.72 (1.75-4.21)
* 2.88 (1.75-4.74)
* 0.81 (0.52-1.26)
 | * <0.0001
* <0.0001
* n.s.
 | 51.1 |
| **Model 2*** **MRCDS >3**
* **6MWD % ≤68**
* **FVC % ≤58**
 | * 2.91 (1.87-4.52)
* 2.23 (1.37-3.65)
* 0.79 (0.50-1.26)
 | * <0.0001
* 0.001
* n.s.
 | 46.2 |
| **Model 3*** **MRCDS >3**
* **6MWD % ≤68**
* **DLCO % ≤37**
 | * 2.83 (1.75-4.59)
* 1.52 (0.91-2.55)
* 2.43 (1.39-4.22)
 | * <0.0001
* n.s.
* 0.002
 | 57.6 |

Abbreviations as in Table 1.