**SUPPLEMENTAL METHODS**

*CAT Score Correction*

To impute the missing values for the CAT questionnaire “chest wheeze” response, we carried out a two-step imputation. First, we utilized the Subpopulations and Intermediate Outcome Measures in COPD Study (SPIROMICS) cohort1 to develop a proportional odds model for the missing response involving the other seven responses, including interaction terms. In brief, SPIROMICS is a United States multicenter study designed to identify COPD subpopulations and to validate intermediate outcome measures. Participants (aged 40–80 years, enrolled between Nov 12, 2010, and July 31, 2015) include healthy never smokers and current or former smokers of more than 20 pack-years with or without air flow obstruction (defined as postbronchodilator FEV1:FVC ratio of ≥0·70). Second, we fit the selected model for the missing response to the combined (SPIROMICS and TRAP) data, and obtained the predicted values for the missing response. Third, in the TRAP data, we randomly imputed the missing “chest wheeze” response based on the expected values for each participant 20 times, computing the average complete CAT scores across the 20 imputed datasets.

**REFERENCES**

1. Couper D, LaVange LM, Han M, Barr RG, Bleecker E, Hoffman EA, et al. Design of the Subpopulations and Intermediate Outcomes in COPD Study (SPIROMICS). Thorax. 2014;69(5):491-4.

**Supplemental Table 1. Characteristics of TB patients with Chronic Lung Disease**

|  |  |  |  |
| --- | --- | --- | --- |
| **Parameter** | **Without CLD**  **(n=151)** | **With CLD**  **(n=24)** | **P-value** |
| **TB Status** |  |  |  |
| Confirmed TB | 124 (82) | 14 (58) | <0.01 |
| Unconfirmed TB | 27 (18) | 10 (42) |  |
| **Spirometry1**  **% predicted (Q1,Q3)** |  |  |  |
| FEV1 | 90 (76, 103) | 66 (54, 79) | <0.0001 |
| FVC | 92 (83, 103) | 73 (61, 78) | <0.0001 |
| FEV1/FVC | 96 (91, 102) | 96 (82, 106) | 1.0 |
| **Spirometry LLN (%)** |  |  |  |
| Normal | 99 (72) | 5 (22) |  |
| Isolated reduced FVC | 20 (14) | 12 (52) | <0.0001 |
| Obstruction2 | 20 (14) | 6 (26) |  |
| Moderate | 12 (60) | 4 (66) |  |
| Severe | 2 (10) | 2 (33) |  |
| **CAT Score** |  |  |  |
| Absolute Scores (Q1,Q3) | 7 (4-11) | 16 (10-17) | <0.0001 |
| < 10 (n, %) | 111 (74) | 6 (25) |  |
| ≥ 10, < 15 (n, %) | 25 (16) | 4 (17) | <0.0001 |
| ≥ 15, < 20 (n, %) | 13 (9) | 11 (45) |  |
| ≥ 20 (n, %) | 2 (1) | 3 (13) |  |
| **Exacerbations (prior 12 months)** |  |  |  |
| Number of exacerbations (Q1,Q3) | 1 (1-1) | 2 (1-3) | <0.0001 |
| No exacerbations | 30 (20) | 1 (4) |  |
| One exacerbation | 97 (64) | 9 (38) | <0.0001 |
| Two exacerbations | 19 (13) | 6 (25) |  |
| Three or more exacerbations | 5 (3) | 8 (33) |  |
| **Shuttle walk distance** |  |  |  |
| Absolute distance, median meters (Q1,Q3) | 840 (660, 1050) | 630 (440, 775) | <0.001 |
| Percent of predicted (Q1,Q3) | 87 (70, 100) | 68 (49, 87) | <0.01 |
| ISWT below LLN (%) | 35 (23) | 11 (46) | 0.02 |
| Oxygen saturation ≥ 88% (%) | 24 (16) | 11 (46) | <0.01 |
| **VO2 Max, less than LLN (%)4** | 16 (11) | 9 (38) | <0.001 |
| **X-ray field score (%)5** |  |  |  |
| Normal | 20 (21) | 0 (0) |  |
| 1-25% abnormal | 47 (49) | 7 (33) | <0.01 |
| 26-50% abnormal | 21 (22) | 8 (38) |  |
| 51-75% abnormal | 7 (7) | 5 (24) |  |
| 76-100% abnormal | 0 (0) | 1 (5) |  |
| **Major depression (%)6** | 17 (11) | 5 (21) | 0.19 |
| **Post-traumatic stress disorder (%)7** | 5 (3) | 2 (8) | 0.24 |

FEV1, forced expiratory volume (one second); FVC, forced vital capacity; LLN, lower limit of normal, CAT, COPD Assessment Test; VO2Max, peak oxygen uptake

1 A total of 162 out of 175 participants completed spirometry

2 Moderate obstruction: 50% ≤ predicted FEV1 < 80%; severe obstruction: 30% ≤ predicted FEV1 < 50%,

4VO2 Max (normal) = 268.6 + (age \* -21.1) + (weight 9.2) + (height/100 \* 1101.1) + (sex \* 535.6)

5Totals based on those who performed CXR (n=116)

6Depression is defined as CESD score > 16

7PTSD is defined as PCL score > 30

**Supplemental Table 2. Radiographic Characteristics of study population**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Radiographic Characteristic** | **Confirmed**  **(n=93)** | **Unconfirmed**  **(n=23)** |  | **P-value** |
| **X-ray field score (%)** |  |  |  |  |
| Normal | 14 (15) | 6 (26) |  |  |
| 1-25% abnormal | 44 (47) | 10 (44) |  |  |
| 26-50% abnormal | 27 (29) | 2 (9) |  | 0.06 |
| 51-75% abnormal | 7 (8) | 5 (22) |  |  |
| 76-100% abnormal | 1 (1) | 0 (0) |  |  |
|  |  |  |  |  |
| **Lung Patterns (%)** |  |  |  |  |
| Any abnormality | 82 (88) | 18 (78) |  | 0.31 |
| Chronic Pattern1 | 79 (85) | 17 (74) |  | 0.21 |
| Ring/Tramline Opacities | 78 (84) | 17 (74) |  | 0.27 |
| Non-cavitating Nodules | 67 (72) | 14 (61) |  | 0.30 |
| Volume Loss (any) | 66 (71) | 11 (49) |  | 0.05 |
| Paucity of Vessels | 46 (49) | 9 (39) |  | 0.37 |
| Cavitating Nodules | 18 (19) | 6 (26) |  | 0.48 |
| Consolidation | 18 (19) | 5 (22) |  | 0.78 |
| Ground Glass Opacifications | 5 (5) | 3 (13) |  | 0.19 |
| Pleural Effusion | 4 (4) | 3 (13) |  | 0.12 |
| Pleural Calcification | 6 (6) | 2 (9) |  | 0.67 |
| Fibrosis | 0 (0) | 1 (4) |  | 0.20 |
| Mass | 2 (2) | 1 (4) |  | 0.49 |

Totals based on those who performed CXR (n=116)

1 Chronic Patterns of radiographic abnormalities = ring/tramline opacities, pleural calcification, fibrosis, mild or severe volume loss, hyper-expansion