**Supplemental Table 1.** Demographics and baseline assessments of entire cohort (N=1221)

|  |  |
| --- | --- |
| Mean age (SD) | 64.21 (8.43) |
| Female sex, n (%) | 603 (49.4) |
| Non-white race, n (%) | 17 (1.4) |
| BMI, mean (SD) | 29.79 (6.11) |
| Smoking intensity, pack years, mean (SD) | 44.32 (26.24) |
| Current smoker, n (%) | 360 (29.5) |
| **Comorbidities, n (%)** |  |
| Chronic bronchitis | 160 (13.1) |
| Asthma | 117 (9.6) |
| CHF | 26 (2.1) |
| Rheumatoid arthritis | 45 (3.7) |
| **Quantitative CT Assessments, mean (SD)** |  |
| % Emphysema | 6.26 (7.96) |
| % Gas trapping | 18.31 (15.95) |
| Subsegmental wall area % | 62.95 (2.01) |
| FRC, % predicted, mean (SD) | 97.39 (23.83) |
| TLC, % predicted, mean (SD) | 112.30 (14.66) |
| **COPDGene Imaging Center Visual Assessments, n (%)** | |
| Any emphysema | 737 (60.4) |
| Centrilobular emphysema | 673 (55.1) |
| Paraseptal emphysema | 459 (37.6) |
| **Spirometric Indices and Patterns** |  |
| FEV1, % predicted, mean (SD) | 83.09 (21.81) |
| FVC, % predicted, mean (SD) | 90.71 (15.39) |
| **GOLD Stage** | |
| Non-smoker (control) | 36 (3.0) |
| PRISm | 116 (9.5) |
| GOLD 0 (control) | 599 (49.2) |
| GOLD 1 | 120 (9.9) |
| GOLD 2 | 239 (19.6) |
| GOLD 3 | 83 (6.8) |
| GOLD 4 | 24 (2.0) |

**Abbreviations:** BMI, body mass index; CHF, congestive heart failure; COPDGene, Genetic Epidemiology of COPD study; CT, computed tomography; FEV1, forced expiratory volume in 1 second; FRC, functional residual capacity; FVC, forced vital capacity; GOLD, Global Initiative for Chronic Obstructive Lung Disease; PRISm, preserved ratio impaired spirometry; SD, standard deviation; TLC, total lung capacity

**Supplemental Table 2A.** Comparing COPDGene radiologist readings with QCT

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | COPDGene Radiologists | |  |
|  |  | No emphysema | Emphysema | Total | |
| QCT | No emphysema | 351 | 407 | 758 | |
| (≥5% LAA -950) | Emphysema | 133 | 330 | 463 | |
|  | Total | 484 | 737 | 1221 | |

**Abbreviations:** COPDGene, Genetic Epidemiology of COPD study; CT, computed tomography; LAA-950, low attenuation area ≤-950 Hounsfield units; QCT, quantitative computed tomography

**Notes:**

% concordance: Observed 0.56, Expected 0.48

Kappa estimate: 0.16 (0.11,0.21)

McNemar's Chi-squared test with continuity correction = 138.02, p <.0001

**Supplemental Table 2B.** Comparing emphysema assessments between University of Iowa and COPDGene radiologists

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | No emphysema | Emphysema | Total |
| COPDGene Radiologists | No emphysema | 468 | 80 | 548 |
| University of Iowa Radiologists | Emphysema | 168 | 505 | 673 |
|  | Total | 636 | 585 | 1221 |

**Abbreviation:** COPDGene, Genetic Epidemiology of COPD study

**Notes:**

% concordance: Observed 0.80, Expected 0.50

Kappa estimate: 0.60 (0.54,0.65)

McNemar's Chi-squared test with continuity correction = 30.52, p <.0001

**Supplemental Table 2C.** Comparing paraseptal emphysema assessments between University of Iowa and COPDGene radiologists

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | University of Iowa Radiologists | |  |
|  |  | No paraseptal emphysema | Paraseptal emphysema | Total |
| COPDGene Radiologists | No paraseptal emphysema | 5 | 15 | 20 |
| Paraseptal emphysema | 3 | 157 | 160 |
|  | Total | 8 | 172 | 180 |

**Abbreviation:** COPDGene, Genetic Epidemiology of COPD study

**Notes:**

% concordance: Observed 0.90, Expected 0.85

Kappa estimate: 0.31 (0.18,0.44)

McNemar's Chi-squared test with continuity correction = 6.72, p = 0.01