### Table S1: Laboratory Test Results in ACO, Asthma and COPD patients

|                     | ACO (n = 749) | COPD (n = 971) | ASTHMA (n = 283) | (N = 2003) |
|---------------------|---------------|----------------|------------------|------------|
| **Blood eosinophil count (109/L)** |               |                |                  |            |
| n                   | 205           | 261            | 81               | 547        |
| Mean (SD)           | 0.27 (0.27)   | 0.19 (0.17)    | 0.31 (0.32)      | 0.24 (0.24) |
| Median              | 0.20          | 0.10           | 0.20             | 0.20       |
| Range               | (0.00, 1.50)  | (0.00, 0.90)   | (0.00, 1.90)     | (0.00, 1.90) |
| **Classification**  |               |                |                  |            |
| <0.3                | 134 (65.40%)  | 210 (80.50%)   | 46 (56.80%)      | 390 (71.30%) |
| ≥0.3                | 71 (34.60%)   | 51 (19.50%)    | 35 (43.20%)      | 157 (28.70%) |
| **Nitric oxide exhaled (ppb)** |           |                |                  |            |
| n                   | 236           | 229            | 133              | 598        |
| Mean (SD)           | 38.1 (31.91)  | 25.7 (20.61)   | 59.9 (53.69)     | 38.2 (36.96) |
| Median              | 27.50         | 19.00          | 40.00            | 26.00      |
| Range               | (4.00, 206.00)| (4.00, 191.00) | (6.00, 300.00)   | (4.00, 300.00) |
| **Serum immunoglobulin E (IU/mL)** |           |                |                  |            |
| n                   | 75            | 58             | 46               | 179        |
| Mean (SD)           | 331.62 (538.38)| 200.05 (424.75)| 269.644         | 273.06     |
|                     |               |                | (421.01)         | (475.68)   |
## Induced sputum cytology

### Percentage of eosinophils (%)

|   | n  | 16  | 28  | 7   | 51  |
|---|----|-----|-----|-----|-----|
| Median | 129.12 | 49.43 | 94.475 | 75.97 |
| Range  | (3.56, 2835.00) | (3.84, 2393.00) | (6.60, 2500.00) | (3.56, 2835.00) |

### Percentage of neutrophils (%)

|   | n  | 16  | 28  | 7   | 51  |
|---|----|-----|-----|-----|-----|
| Median | 11.43 (14.74) | 2.97 (2.95) | 13.73 (13.18) | 7.10 (10.60) |
| Median | 2.97 (2.95) | 2.97 (2.95) | 13.73 (13.18) | 7.10 (10.60) |
| Range  | (0.00, 55.80) | (0.00, 10.40) | (2.00, 40.50) | (0.00, 55.80) |
| Range  | (4.00, 86.00) | (11.00, 96.00) | (18.00, 63.20) | (4.00, 96.00) |
Table S2: The initial diagnosis of different respiratory conditions

| Previous diagnosis          | ACO (n = 749), n (%) | COPD (n = 971), n (%) | Asthma (n = 283), n (%) | Total (N=2003), n (%) |
|-----------------------------|----------------------|-----------------------|------------------------|-----------------------|
| ACO                         | 45 (6.00)            | 0 (0)                 | 0 (0)                  | 45 (2.20)             |
| COPD                        | 282 (37.70)          | 703 (72.40)           | 3 (1.10)               | 988 (49.30)           |
| Asthma                      | 489 (65.30)          | 52 (5.40)             | 271 (95.80)            | 812 (40.50)           |
| Chronic bronchitis          | 190 (25.40)          | 289 (29.80)           | 18 (6.40)              | 497 (24.80)           |
| Emphysema                   | 131 (17.50)          | 226 (23.30)           | 7 (2.50)               | 364 (18.20)           |
| Chronic bronchitis with emphysema | 27 (3.60)           | 99 (10.20)            | 0 (0)                  | 126 (6.30)            |