

# **Supplementary appendix**

## **Clinical outcomes of theophylline use as add-on therapy in patients with chronic obstructive pulmonary disease: A propensity score matching analysis**

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**Table S1** Distribution of observed and imputed data (using multiple imputation with chained-equations)

| Variables                              | N missing (%) | Observed                                                | Imputed                                                 |
|----------------------------------------|---------------|---------------------------------------------------------|---------------------------------------------------------|
|                                        |               | mean (SD) for continuous or % for categorical variables | mean (SD) for continuous or % for categorical variables |
| Age (years)                            | 0 (0%)        | 70.05 (10.69)                                           | NA                                                      |
| Male                                   | 0 (0%)        | 945 (75.30)                                             | NA                                                      |
| Weight (kg)                            | 0 (0%)        | 51.92 (12.31)                                           | NA                                                      |
| Height (cm)                            | 0 (0%)        | 159.65 (8.19)                                           | NA                                                      |
| Smoking status                         |               |                                                         |                                                         |
| Ex-smoker                              | 9 (0.71%)     | 1,002 (80.42)                                           | 1,011 (80.56)                                           |
| Smoker                                 | 9 (0.71%)     | 56 (4.49)                                               | 56 (4.46)                                               |
| Number of pack-years                   | 55 (4.38%)    | 17.15 (17.96)                                           | 17.42 (17.69)                                           |
| Duration of COPD in years              | 0 (0%)        | 6.45 (7.88)                                             | NA                                                      |
| CAT score                              | 65 (5.18%)    | 7.66 (6.90)                                             | 7.63 (6.87)                                             |
| MMRC score                             | 35 (2.79%)    | 1.29 (1.06)                                             | 1.27 (1.05)                                             |
| Post-predicted %FEV1                   | 284 (22.63%)  | 56.25 (21.20)                                           | 56.96 (14.54)                                           |
| Comorbidity                            |               |                                                         |                                                         |
| Chronic heart failure                  | 0 (0%)        | 144 (11.47)                                             | NA                                                      |
| Pulmonary disease                      | 0 (0%)        | 1255 (100.00)                                           | NA                                                      |
| Liver disease                          | 0 (0%)        | 28 (2.23)                                               | NA                                                      |
| Renal disease                          | 0 (0%)        | 215 (17.13)                                             | NA                                                      |
| Tuberculosis                           | 0 (0%)        | 132 (10.52)                                             | NA                                                      |
| Controller medications                 |               |                                                         |                                                         |
| LABA and ICS                           | 0 (0%)        | 1,255 (100.00)                                          | NA                                                      |
| LAMA                                   | 0 (0%)        | 354 (28.21)                                             | NA                                                      |
| Reliever medications                   |               |                                                         |                                                         |
| SABA                                   | 0 (0%)        | 283 (22.55)                                             | NA                                                      |
| SABA and SAMA                          | 0 (0%)        | 1,148 (91.47)                                           | NA                                                      |
| Concomitant drugs                      |               |                                                         |                                                         |
| Statins                                | 0 (0%)        | 432 (34.42)                                             | NA                                                      |
| ACEI or ARB                            | 0 (0%)        |                                                         | NA                                                      |
| Influenza vaccine                      | 0 (0%)        | 117 (9.32)                                              | NA                                                      |
| Short-course oral corticosteroids used | 0 (0%)        | 539 (42.95)                                             | NA                                                      |
| Mean percentage of compliance          | 0 (0%)        | 92.08 (6.77)                                            | NA                                                      |

SD, standard deviation; CAT, the COPD Assessment Test; mMRC, the modified Medical Research Council; FEV1, forced expiratory volume in 1 second; ICS, inhaled corticosteroids; LABA, long acting beta2-agonists; LAMA, long acting muscarinic antagonists; CCI, Charlson comorbidity index; ACEI, angiotensin-converting enzyme inhibitors; ARB, angiotensin II receptor blocker.

**Figure S1** Association of dose response and overall exacerbations

