**Supplementary Material**

**Never-smokers with occupational COPD have better exercise capacities and ventilatory efficiency than matched smokers with COPD**

Thibaud Soumagne, Alicia Guillien, Nicolas Roche, Jean-Charles Dalphin, Bruno Degano

**Supplemental Material S1** Cardiovascular comorbidities and use of medication among subjects with COPD

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Never-smokers** | |  |  | **Ever-smokers** | |  | **Never vs  ever smokers with COPD  p value** |
|  | **COPD** | **Controls** | **p value** |  | **COPD** | **Controls** | **p value** |
|  | **(n=22)** | **(n=22)** |  | **(n=22)** | **(n=22)** |
| **Comorbidities** |  |  |  |  |  |  |  |  |
| High blood pressure, n (%) | 2 (9) | 3 (14) | NS |  | 7 (32) | 5 (23) | NS | NS |
| Diabetes, n (%) | 0 | 0 | - |  | 3 (14) | 1 (5) | NS | NS |
| Dyslipidaemia, n (%) | 2 (9) | 3 (14) | NS |  | 10 (45) | 7 (32) | NS | <0.05 |
| Osteoporosis, n (%) | 0 | 0 | - |  | 2 (9) | 0 | NS | NS |
| Obstructive sleep apnoea syndrome, n (%) | 2 (9) | 1 (5) | NS |  | 4 (18) | 1 (5) | NS | NS |
| Gastroesophageal reflux, n (%) | 0 | 0 | - |  | 2 (9) | 0 | NS | NS |
|  |  |  |  |  |  |  |  |  |
| **Use of pulmonary medication\*, n (%)** | 1 (5) | 0 | NS |  | 1 (5) | 0 | NS | NS |
| Short-acting 2 agonists, n (%) | 0 | 0 | - |  | 0 | 0 | - | - |
| Long-acting 2 agonists (LABA), n (%) | 0 | 0 | - |  | 1 (5) | 0 | NS | NS |
| Combined LABA and inhaled corticosteroids, n (%) | 0 | 0 | - |  | 0 | 0 | - | - |
| Short-acting anticholinergics, n (%) | 1 (5) | 0 | NS |  | 0 | 0 | - | NS |
| Long-acting anticholinergics, n (%) | 0 | 0 | - |  | 1 (5) | 0 | NS | NS |
| Theophylline, n (%) | 0 | 0 | - |  | 0 | 0 | - | - |
| Inhaled corticosteroids, n (%) | 0 | 0 | - |  | 0 | 0 | - | - |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Supplemental Material S2** Measurement at ventilatory threshold | | | | | | | | | | |
|  | **Never-smokers** | | |  |  | **Ever-smokers** | | |  | **Never vs  ever-smokers**  **with COPD  p value** |
| **COPD** |  | **Controls** | **p value** |  | **COPD** |  | **Controls** | **p value** |
| **(n=22)** |  | **(n=22)** |  | **(n=22)** |  | **(n=22)** |
| Work rate, watts | 103.4±23.6 |  | 118.9±28.4 | 0.06 |  | 82.5±23.1 |  | 102.3±26.4 | **<0.05** | **<0.01** |
| (% predicted) | 53±12 |  | 62±10 | **<0.01** |  | 44±11 |  | 55±14 | **<0.05** | **<0.05** |
| HR, beat/min | 122.6±12.1 |  | 126.2±13.0 | NS |  | 119.6±12.1 |  | 125.3±13.4 | NS | NS |
| (% predicted maximum) | 75±9 |  | 78±8 | NS |  | 74±8 |  | 78±9 | NS | NS |
| V’O2, L/min | 1.43±0.34 |  | 1.66±0.35 | **<0.05** |  | 1.22±0.26 |  | 1.46±0.37 | **<0.05** | **<0.05** |
| (% predicted) | 63±14 |  | 74±12 | **<0.01** |  | 56±12 |  | 66±17 | **<0.05** | NS |
| RER | 0.97±0.05 |  | 0.97±0.06 | NS |  | 0.96±0.08 |  | 0.96±0.06 | NS | NS |
| O2 pulse, mL O2/beat | 11.6±2.3 |  | 13.2±2.7 | **<0.05** |  | 10.2±1.9 |  | 11.7±2.9 | **<0.05** | **<0.05** |
| f, breaths/min | 22.8±5.4 |  | 22.7±3.9 | NS |  | 23.8±2.9 |  | 21.2±3.7 | **<0.05** | NS |
| V’E, L/min | 42.8±10.6 |  | 47.1±9.2 | NS |  | 38.2±6.0 |  | 42.7±10.7 | NS | NS |
| (% estimated MVV) | 50.9±18.1 |  | 38.6±8.0 | **<0.01** |  | 45.3±8.8 |  | 35.1 ±9.8 | **<0.001** | NS |
| VE/V’CO2 | 31.1±4.5 |  | 29.5±3.3 | NS |  | 33.5±4.4 |  | 30.7±3.4 | **<0.05** | NS |
| VT, L | 1.91±0.42 |  | 2.11±0.38 | NS |  | 1.64±0.34 |  | 2.03±0.36 | **<0.001** | **<0.05** |
| Dyspnea, Borg scale | 2.6±2.0 |  | 3.9±2.0 | NS |  | 3.2±0.9 |  | 3.5±1.2 | NS | NS |
| Leg discomfort, Borg scale | 3.3±1.8 |  | 4.5±1.9 | NS |  | 3.5±1.4 |  | 4.1±1.8 | NS | NS |

HR, heart rate; MVV, maximal voluntary ventilation; RER, respiratory exchange ratio; V’E, minute ventilation; V’O2, oxygen uptake; V’E/V’CO2, ventilatory equivalents for carbon dioxide; VT, tidal volume