

## Supplements

**Table S1. Grouping according to the Rome severity classification.**

Severity	Criteria for assessing AECOPD severity
<b>Severe</b>	ABG demonstrates hypercapnia and acidosis (PaCO <sub>2</sub> >45 mmHg and pH <7.35)
<b>Moderate</b>	a. ABG demonstrates hypoxemia (PaO <sub>2</sub> ≤60 mmHg), hypercapnia (PaCO <sub>2</sub> >45 mmHg) or both, but no acidosis (pH >7.35) b. At least 3 of the 5 variables are eligible: <ul style="list-style-type: none"> <li>• Dyspnea VAS ≥5</li> <li>• RR ≥24 breaths/min</li> <li>• HR ≥95 bpm</li> <li>• Resting SaO<sub>2</sub> &lt;92%*</li> <li>• CRP ≥10 mg/L</li> </ul>
<b>Mild (default)</b>	<ul style="list-style-type: none"> <li>• Dyspnea VAS &lt;5</li> <li>• RR &lt;24 breaths/min</li> <li>• HR &lt;95 bpm</li> <li>• Resting SaO<sub>2</sub> ≥ 92%</li> <li>• CRP &lt;10 mg/L</li> </ul>

**Notes:** Arterial blood gas analysis results are obtained from the stable stage of the patients who breathing ambient air or the usual oxygen prescription

**Abbreviations:** AECOPD, acute exacerbation of chronic obstructive pulmonary disease; ABG, arterial blood gases; PaCO<sub>2</sub>, arterial carbon dioxide tension; pH, hydrogen ion concentration; PO<sub>2</sub>, arterial oxygen tension; VAS, visual analog scale; RR, respiratory rate; HR, heart rate; CRP, C-reactive protein; SaO<sub>2</sub>, Arterial Oxygen Saturation.

**Table S2. Between-group differences of criteria for determining AECOPD severity according to the Rome classification.**

multiple comparisons	Mild-Moderate	Mild-Severe	Moderate-Severe	P value*
Dyspnea (VAS >5)	<b>&lt;0.001</b>	<b>&lt;0.001</b>	<b>&lt;0.001</b>	<b>&lt;0.001</b>
RR (breath/min)	<b>&lt;0.001</b>	<b>&lt;0.001</b>	1.000	<b>&lt;0.001</b>
HR (bpm)	<b>&lt;0.001</b>	<b>&lt;0.001</b>	1.000	<b>&lt;0.001</b>
SaO <sub>2</sub> (%)	<b>&lt;0.001</b>	<b>&lt;0.001</b>	1.000	<b>&lt;0.001</b>
CRP (mg/L)	<b>&lt;0.001</b>	<b>&lt;0.001</b>	<b>&lt;0.001</b>	<b>&lt;0.001</b>
PaO <sub>2</sub> (mmHg)	<b>&lt;0.001</b>	0.108	<b>&lt;0.001</b>	<b>&lt;0.001</b>
PaCO <sub>2</sub> (mmHg)	<b>&lt;0.001</b>	<b>&lt;0.001</b>	<b>&lt;0.001</b>	<b>&lt;0.001</b>

**Notes:** \*Those with P value < 0.05 were highlighted using the bold font. Dunn's test with a Bonferroni correction for multiple comparisons was applied.

**Abbreviations:** AECOPD, acute exacerbation of chronic obstructive pulmonary disease; RR, respiration rate; HR, heart rate; bpm, beats per minute; SaO<sub>2</sub>, Arterial Oxygen Saturation; CRP, C-reactive protein; PaO<sub>2</sub>, the partial pressure of oxygen; PaCO<sub>2</sub>: the partial pressure of carbon dioxide.