Supplementary Table 4. Separate effect of prophylactic application of NIV or HFNO on extubation failure across mROX-stratified risk groups

Variable	No. of patients Extubation failure/total (%)	Adjusted OR (95% CI)	*p* value
mROX < 11.12			
Without NIV or HFNO	25/40 (62.5)	Reference	
Prophylactic NIV	6/10 (60.0)	1.06 (0.19–5.90)	0.948
Prophylactic HFNO	51/67 (76.1)	2.33 (0.91–5.99)	0.079
11.12 ≤ mROX < 17.55			
Without NIV or HFNO	25/107 (23.4)	Reference	
Prophylactic NIV	3/17 (17.6)	0.71 (0.16–3.03)	0.646
Prophylactic HFNO	12/99 (12.1)	0.38 (0.17–0.85)	0.018
mROX ≥ 17.55			
Without NIV or HFNO	19/140 (13.6)	Reference	
Prophylactic NIV	6/19 (31.6)	3.01 (0.92–9.77)	0.067
Prophylactic HFNO	13/107 (12.1)	1.05 (0.47–2.34)	0.907

ORs were calculated using logistic regression and adjusted for clinical factors: age, body mass index, duration of mechanical ventilation, sequential organ failure assessment score, moderate or deep sedation, and hemoglobin level. Prophylactic NIV was defined as the application of noninvasive ventilation within 30 minutes after extubation, regardless of subsequent HFNO use. Prophylactic HFNO was defined as the use of HFNO alone within 30 minutes post-extubation, without concurrent NIV. Patients who did not receive either modality within 30 minutes were categorized as the no prophylactic support group. When both NIV and HFNC were applied within 30 minutes, the patient was classified into the prophylactic NIV group, given its greater ventilatory impact.

NIV, non-invasive ventilation; HFNO, high-flow nasal oxygen; mROX, modified ROX index; OR, odds ratio; CI, confidence interval.