

Spontaneous breathing during ECMO in acute respiratory failure

Stefania Crotti¹, Nicola Bottino¹, Giulia Maria Ruggeri², Elena Spinelli², Daniela Tubiolo¹,
Alfredo Lissoni¹, Alessandro Protti¹, Luciano Gattinoni³.

Institutional affiliations

From: ¹ Dipartimento di Anestesia, Rianimazione ed Emergenza Urgenza, Fondazione IRCCS Ca' Granda, Ospedale Maggiore Policlinico, Milan, Italy. ² Dipartimento di Fisiopatologia Medico-Chirurgica e dei Trapianti, Fondazione IRCCS Ca' Granda, Ospedale Maggiore Policlinico, Università degli Studi di Milano, Milan, Italy. ³ Dpt Anesthesia and Intensive Care, Georg-August-Universität, Göttingen, Germany.

Online supplementary material – Table 2S

Table 2S. Main characteristics of patients who underwent spontaneous breathing test, as recorded before ECMO start

	BRIDGE n=9	COPD n=6	ARDS n=8	p-value
Age, years	40±8	73±6	49±18	< 0.001
Body mass index, Kg/m ²	20.1±4.1	25.3±4.5	24.6±4.5	0.056
Referred, n (%)	2/9 (22)	0/6 (0)	3/8 (37)	0.242
Arterial pH	7.267±0.102	7.215±0.079	7.290±0.091	0.344
Arterial pCO ₂ , mmHg	83±20	71±21	61±20	0.111
Arterial pO ₂ /FiO ₂ , mmHg	154±62	267±154	86±22	0.011 ^{oa}
Positive end-expiratory pressure, cmH ₂ O	7±3	9±4	14±2	< 0.001
Mechanical ventilation, n (%)	0/9 (0)	4/6 (67)	6/8 (75)	0.003
Length of mechanical ventilation, days	0.0±0.0	1.7±2.7	1.1±1.2	0.006 ^o
Vasoactive drugs, n (%)	1/9 (11)	5/6 (83)	4/8 (50)	0.020
Arterial lactate, mmol/L	0.9±0.2	3.2±3.5	1.6±1.3	0.301 ^{oc}
White blood cells, 10 ³ /mm ³	18.08±5.47	14.66±4.16	13.73±7.76	0.392 ^b
C-reactive protein, mg/dL	5±4	7±4	25±5	< 0.001 ^d
SOFA score (without respiratory subscore)	0 [0-0]	3 [2-4]	1.5 [0-4]	0.017 ^a

Data are reported as mean±SD, median [IQR] or proportions. They were compared between groups (primary diagnosis) with one-way ANOVA, one-way ANOVA on ranks (°) or Freeman-Halton extension of the Fisher exact test.

^a One missing value; ^b three missing values; ^c five missing values; ^d six missing values.

pCO₂: carbon dioxide tension; pO₂: oxygen tension; FiO₂: fraction of inspiratory oxygen; SOFA: sequential organ failure assessment. “Referred” means “transferred from other hospital”.

Data are reported as mean±SD, median [IQR] or proportions. They were compared between groups (primary diagnosis) with one-way ANOVA (Bonferroni method for post-hoc multiple comparisons), one-way ANOVA on ranks (°) (Dunn method) or Freeman-Halton extension of the Fisher exact test.

§ p<0.05 compared with BRIDGE to LTX;

* p<0.05 compared with AECOPD.

^a One missing value; ^b three missing values; ^c five missing values; ^d six missing values.

pCO₂: carbon dioxide tension; pO₂: oxygen tension; FiO₂: fraction of inspiratory oxygen; SOFA: sequential organ failure assessment. “Referred” means “transferred from other hospital”.