

## **Spontaneous breathing during ECMO in acute respiratory failure**

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**Table 3S.** Main characteristics and clinical course of the 8 ARDS patients who underwent spontaneous breathing during ECMO.

Pt #	Sex	Age (years)	Cause of ARDS	Underlying disease	Parameters before ECMO				Referred	ECMO duration (days)	IMV duration (days)	SB-ECMO duration (days)	Responder (Yes/No)	Definitive weaning from IMV on ECMO (Yes/No)	ICU stay (days)	Outcome
					FiO <sub>2</sub>	PaO <sub>2</sub> /FiO <sub>2</sub> (mmHg)	PEEP (cmH <sub>2</sub> O)	MV (l/min)								
1	M	72	Pneumonia (unidentified organism)	Lung resection for neoplasia	1	72	12	NA*	No	15	18	4	No	No	26	Dead
2	M	39	Pneumonia (RSV)	None	0,6	117	15	9,4	No	7	3	6	No	Yes	11	Alive discharged from H
3	M	67	Pneumonia (Pneumocistis Carinii)	Pemfigo (immunosoppression)	0,8	86	15	19,6	No	11	2	10	No	Yes	21	Alive discharged from H
4	M	35	Pneumonia (unidentified organism)	Diabetes Type 1	0,9	56	10	6	Yes	4	2	3	Yes	Yes	10	Alive discharged from H
5	F	29	Pneumonia (RSV)	BLTx	0,75	101	15	22§	No	6	0	6	Yes	NA	16	Alive discharged from H
6	F	39	Pneumonia (MSSA)	None	0,70	96	15	8,3	No	6	20	2	Yes	No	22	Alive discharged from H
7	M	58	Pneumonia (unidentified organism)	None	0,8	100	15	10,6	Yes	30	30	4	Yes	No	34	Dead
8	M	47	Pneumonia (H1N1 influenza)	Diabetes Type 2	1	60	17	9,8	Yes	13	31	1	No	No	35	Alive discharged from H

Ventilator setting and P/F before ECMO initiation are reported.

In patient #1 ECMO-SB approach was attempted from the very beginning, as he was started on ECMO while spontaneously breathing; however he subsequently required intubation and mechanical ventilation and eventually died; \* patient on Helmet CPAP. Three Patient (#2, 3, 4) could be extubated during the early phase of ARDS (first 96 hours from the intubation) and successfully managed with SB-ECMO until recovery (“definitive weaning from IMV on ECMO”). Patient # 5 was never intubated and maintained spontaneous breathing on ECMO, with a rapid resolution of respiratory failure and a relatively short ECMO run (6 days); § patient on NIV. Four patients (#1, 6, 7, 8) failed weaning from IMV while on ECMO and needed IMV resumption between 1 and 4 days after the extubation attempt; they then were weaned from ECMO (no major complications) while on IMV (#1,6,8), except patient #7 who died on ECMO and IMV (cerebral hemorrhage).

IMV: intermittent mechanical ventilation; SB: spontaneous breathing; RSV: Respiratory Syncytial Virus; MSSA: Methicilline-sensitive Staphylococcus aureus; MV: minute ventilation; BLTx: bilateral lung transplant; H: hospital.