

**Supplemental Digital Content, containing 3 tables. The Supplemental Digital Content was not copyedited by *Archives of Pathology & Laboratory Medicine*.**

**Supplementary Table 1.** Association of histopathologic findings of autopsy lungs with clinical parameters in patients treated with ECMO (n=83)

	Sex		Age	Weight, kilograms	ECMO		ECMO Duration, days	Hospital Stay Duration, days	APACHE II
	Females	Males			VA	VV			
Acute bronchopneumonia	<i>P</i> Value .56		.47	.76	.07		.78	<b>.04</b>	.76
Present	15 (57.7)	29 (50.9)	54.5 (39.25-64.75)	78.5 (72.0-92.0)	31 (47.7)	13 (72.2)	6.0 (3.0-9.0)	18.0 (10.0-31.75)	27.0 (21.0-31.0)
Absent	11 (42.3)	28 (49.1)	59.0 (47.0-64.0)	80.0 (72.0-95.0)	34 (52.3)	5 (27.8)	6.0 (2.0-15.0)	9.0 (5.0-19.0)	25.0 (20.0-30.0)
Interstitial oedema	<i>P</i> Value .80		<b>.02</b>	.70	.37		.08	.86	.42
Present	12 (46.2)	28 (49.1)	52.0 (37.5-60.75)	80.0 (72.25-94.25)	33 (50.8)	7 (38.9)	5.5 (1.25-9.0)	15.5 (6.25-29.5)	27.0 (20.0-32.0)
Absent	14 (53.8)	29 (50.9)	61.0 (51.0-65.0)	77.75 (71.38-92.88)	32 (49.2)	11 (61.1)	6.0 (3.0-15.0)	13.0 (8.0-24.0)	25.0 (21.0-30.0)
Diffuse alveolar damage (DAD) hyaline membrane formation	<i>P</i> Value .64		.19	.64	<b>.03</b>		<b>.02</b>	<b>.01</b>	.70
Present	11 (42.3)	21 (36.8)	51.0 (37.25-65.0)	80.0 (71.5-92.0)	21 (32.3)	11 (61.1)	8.5 (2.5-14.75)	18.5 (10.5-32.75)	27.0 (20.25-30.75)
Absent	15 (57.7)	36 (63.2)	58.0 (49.0-64.0)	78.5 (73.0-95.0)	44 (67.7)	7 (38.9)	4.0 (2.0-9.0)	11.0 (5.0-19.0)	26.0 (20.0-30.0)
Lung abscesses	<i>P</i> Value .21		.15	.12	.39		.95	.55	.74
Present	6 (23.1)	7 (12.3)	51.0 (34.5-63.0)	75.0 (63.0-81.0)	9 (13.8)	4 (22.2)	6.0 (2.0-12.0)	13.0 (7.0-18.0)	25.0 (20.5-29.5)
Absent	20 (76.9)	5 (87.7)	58.0 (43.0-65.0)	80.0 (72.0-95.0)	56 (86.2)	14 (77.8)	6.0 (2.75-10.0)	15.5 (6.75-30.25)	27.0 (20.0-31.25)
Hemorrhagic infarct with recent and recanalizing thromboemboli	<i>P</i> Value .27		.76	.37	.55		.74	.31	.15
Present	11 (42.3)	17 (29.8)	57.5 (46.0-63.75)	76.0 (68.5-99.63)	23 (35.4)	5 (27.8)	6.0 (2.25-10.0)	13.5 (6.25-19.0)	24.5 (19.25-28.75)
Absent	15 (57.7)	40 (70.2)	56.0 (41.0-65.0)	80.0 (72.0-92.5)	42 (64.6)	13 (72.2)	6.0 (2.0-12.0)	16.0 (7.0-32.0)	27.0 (20.0-32.0)
Pulmonary haemorrhage	<i>P</i> Value <b>.03</b>		.25	.27	.36		<b>.03</b>	.07	.75
Present	12 (46.2)	13 (22.8)	55.0 (37.0-62.0)	75.0 (66.25-93.25)	18 (27.7)	7 (38.9)	3.0 (1.5-8.0)	11.0 (4.0-18.5)	25.0 (20.5-30.0)
Absent	14 (53.8)	44 (77.2)	58.0 (42.75-65.0)	80.0 (73.5-93.5)	47 (72.3)	11 (61.1)	7.0 (3.0-12.5)	16.5 (7.75-29.5)	27.0 (20.0-31.25)
Fibrosis of interlobular partitions	<i>P</i> Value .67		.90	.37	.23		.16	<b>.03</b>	.41
Present	4 (15.4)	11 (19.3)	58.0 (42.0-65.0)	87.0 (66.13-102.75)	10 (15.4)	5 (27.8)	10.0 (4.0-15.0)	28.0 (10.0-40.0)	27.0 (22.0-32.0)
Absent	22 (84.6)	46 (80.7)	57.0 (40.0-64.0)	77.75 (72.0-92.0)	55 (84.6)	13 (72.2)	5.5 (2.0-9.75)	13.5 (6.0-21.75)	25.5 (20.0-30.0)

Values are No. (%) for categorical variables and medians (interquartile ranges; IQR) for quantitative variables. Bold indicates significant ( $P < .05$ ), otherwise statistically non-significant ( $P \geq .05$ ). Abbreviations: ECMO, extracorporeal membrane oxygenation; VA, venoarterial; VV, venovenous; APACHE II, Acute Physiology and Chronic Health Evaluation II.

**Supplementary Table 2.** Univariate and multivariate regression models for predictors of various histopathologic findings in patients treated with ECMO (n=83)

	Acute broncho pneumonia		Interstitial oedema		Diffuse alveolar damage (DAD) with hyaline membrane formation		Lung abscesses		Hemorrhagic infarct with recent and recanalizing thrombo emboli		Pulmonary hemorrhage		Fibrosis of interlobular partitions	
	Uni variate	Multi variate	Uni variate	Multi variate	Uni variate	Multi variate	Uni variate	Multi variate	Uni variate	Multi variate	Uni variate	Multi variate	Uni variate	Multi variate
<i>P</i> value	.56	.96	.80	.49	.63	.77	.21	.29	.26	.33	<b>.03</b>	<b>.03</b>	.66	.70
Sex (male vs female)	0.76 (0.30-1.94)	1.02 (0.35-2.96)	1.13 (0.44-2.85)	1.44 (0.50-4.14)	0.80 (0.31-2.05)	0.86 (0.29-2.51)	0.47 (0.14-1.56)	0.50 (0.14-1.81)	0.58 (0.22-1.52)	0.59 (0.21-1.67)	<b>0.34 (0.13-0.93)</b>	<b>0.32 (0.11-0.92)</b>	1.32 (0.38-4.60)	1.29 (0.33-5.01)
<i>P</i> value	<b>.02</b>	<b>.02</b>	<b>.007</b>	<b>.004</b>	.21	.21	.18	.27	.49	.25	.68	.95	.85	.68
Age (≥57 vs <57 years)	<b>0.34 (0.14-0.84)</b>	<b>0.33 (0.12-0.89)</b>	<b>0.29 (0.12-0.72)</b>	<b>0.23 (0.09-0.62)</b>	0.57 (0.23-1.39)	0.53 (0.19-1.44)	0.44 (0.13-1.49)	0.49 (0.14-1.77)	1.39 (0.55-3.49)	1.79 (0.66-4.86)	0.82 (0.32-2.10)	1.03 (0.37-2.90)	0.90 (0.29-2.77)	0.78 (0.23-2.64)
<i>P</i> value	.07	<b>.03</b>	.37	.45	0.3	.03	.39	.72	.54	.37	.36	.30	.23	.20
ECMO type (VV vs VA)	2.85 (0.91-8.92)	<b>4.07 (1.10-15.07)</b>	0.62 (0.21-1.79)	0.64 (0.20-2.05)	<b>3.29 (1.12-9.70)</b>	<b>3.61 (1.11-11.77)</b>	1.78 (0.48-6.62)	1.30 (0.31-5.52)	0.70 (0.22-2.22)	0.57 (0.17-1.95)	1.66 (0.56-4.95)	1.87 (0.56-6.25)	2.12 (0.62-7.25)	2.30 (0.63-8.44)
<i>P</i> value	.88	.01	.59	.36	<b>.02</b>	.31	.50	.28	.94	.51	.12	.31	.24	.70
ECMO Duration (≥6 vs <6)	0.94 (0.40-2.23)	0.36 (0.11-1.22)	0.79 (0.33-1.88)	0.61 (0.20-1.79)	<b>2.90 (1.44-7.35)</b>	1.77 (0.59-5.32)	1.51 (0.45-5.08)	2.19 (0.52-9.33)	1.03 (0.42-2.58)	1.43 (0.48-4.25)	0.47 (0.18-1.22)	0.56 (0.18-1.75)	2.00 (0.62-6.47)	1.30 (0.33-5.11)
<i>P</i> value	<b>.04</b>	<b>.01</b>	.43	.28	<b>.02</b>	.11	.59	.30	.69	.53	.12	.28	.24	.39
Hospital length of stay (≥14 vs <14 days)	<b>2.52 (1.04-6.10)</b>	<b>4.95 (1.47-16.73)</b>	1.42 (0.60-3.37)	1.80 (0.61-5.25)	<b>2.90 (1.14-7.35)</b>	2.48 (0.81-7.58)	0.72 (0.22-2.37)	0.48 (0.11-1.98)	0.83 (0.34-2.07)	0.71 (0.24-2.08)	0.47 (0.18-1.22)	0.54 (0.18-1.67)	2.00 (0.62-6.47)	1.80 (0.46-7.02)
<i>P</i> value	.44	.90	.58	.31	.59	.39	.39	.71	.07	.06	.51	.95	.36	.37
APACHE II (≥26 vs <26)	0.71 (0.30-1.70)	0.94 (0.35-2.53)	1.27 (0.54-3.01)	1.66 (0.62-4.47)	1.28 (0.53-3.09)	1.55 (0.56-4.28)	0.59 (0.18-1.98)	0.79 (0.22-2.86)	0.43 (0.17-1.10)	0.38 (0.14-1.05)	0.73 (0.29-1.88)	1.03 (0.36-2.93)	1.69 (0.54-5.26)	1.75 (0.51-6.02)

Values are odds ratios (95% confidence intervals). Bold indicates significant ( $P < .05$ ), otherwise statistically non-significant ( $P \geq .05$ ). Abbreviations: ECMO, extracorporeal membrane oxygenation; VA, venoarterial; VV, venovenous; APACHE II, Acute Physiology and Chronic Health Evaluation II.

**Supplementary Table 3.** Univariate and multivariate regression models for predictors of various histopathologic findings in pooled groups of patients treated for pulmonary (non-cardiac) reasons with VV ECMO (n=18) and conventionally (n=18)

	Acute broncho pneumonia		Interstitial oedema		Diffuse alveolar damage (DAD) hyaline membrane formation		Lung abscesses		Hemorrhagic infarct with recent and recanalizing thrombo emboli		Pulmonary hemorrhage		Fibrosis of interlobular partitions	
	Uni variate	Multi variate	Uni variate	Multi variate	Uni variate	Multi variate	Uni variate	Multi variate	Uni variate	Multi variate	Uni variate	Multi variate	Uni variate	Multi variate
P value	.37	.78	.26	.75	.39	.62	.33	.42	<b>.04</b>	<b>.04</b>	.08	.11	.67	.49
Sex (male vs female)	1.86 (0.49-7.12)	1.27 (0.23-7.03)	0.46 (0.11-1.79)	0.78 (0.16-3.66)	0.55 (0.14-2.17)	0.68 (0.14-3.19)	0.47 (0.10-2.17)	0.52 (0.10-2.58)	<b>0.16 (0.03-0.94)</b>	<b>0.13 (0.02-0.98)</b>	0.27 (0.07-1.19)	0.25 (0.04-1.38)	1.38 (0.32-5.92)	1.71 (0.36-8.12)
P value	.52	.72	.52	.14	.07	.08	.83	.89	.19	.75	<b>.04</b>	.26	.61	.34
Age(>57 vs <57 years)	0.62 (0.14-2.66)	0.70 (0.10-5.11)	0.62 (0.14-2.66)	0.22 (0.03-1.66)	0.21 (0.04-1.15)	0.18 (0.02-1.23)	0.84 (0.17-4.23)	0.87 (0.13-5.96)	0.33 (0.07-1.70)	0.70 (0.08-5.98)	<b>0.21 (0.04-0.97)</b>	0.35 (0.05-2.22)	0.68 (0.15-3.07)	0.41 (0.07-2.58)
P value	<b>.04</b>	.18	<b>.04</b>	<b>.03</b>	.73	.65	.70	.84	.42	.38	.28	.35	.71	.38
ECMO (VV ECMO vs non- ECMO)	<b>4.08 (1.01-16.58)</b>	3.51 (0.55-22.36)	<b>0.25 (0.06-0.99)</b>	<b>0.13 (0.02-0.84)</b>	1.26 (0.33-4.74)	0.69 (0.13-3.56)	0.74 (0.16-3.38)	0.83 (0.13-5.21)	1.92 (0.38-9.65)	2.77 (0.29-26.90)	2.23 (0.52-9.59)	2.59 (0.35-19.15)	0.77 (0.19-3.19)	0.47 (0.08-2.63)
P value	<b>.004</b>	<b>.006</b>	.36	.71	.86	.61	.56	.68	.78	.82	.25	.24	.76	.63
Hospital Length of Stay(≥14 vs <14 days)	<b>13.00 (2.27-74.31)</b>	<b>13.59 (2.08-88.77)</b>	0.54 (0.14-2.06)	0.76 (0.17-3.38)	1.12 (0.29-4.32)	1.47 (0.33-6.56)	0.63 (0.13-3.03)	0.71 (0.14-3.65)	0.80 (0.16-4.02)	0.81 (0.12-5.21)	0.41 (0.09-1.90)	0.33 (0.05-2.09)	1.25 (0.30-5.23)	1.44 (0.32-6.53)

Values are odds ratios (95% confidence intervals). CI, confidence interval. Bold indicates significant ( $P < .05$ ) in univariate regression models. Bold in red color indicates significant in multivariate regression models, otherwise statistically non-significant ( $P \geq .05$ ). Abbreviations: ECMO, extracorporeal membrane oxygenation; VV, veno-venous;