Table 1

Baseline demographic, clinical data at the time of ICU admission and ICU treatments

Variable	Reduced Diffusivity Group (n=7)	Control Group (n=20)	P-value†
Mean age (95% CI) – yr	63 (55-71)	63 (58-69)	0.98
Male sex – no. (%)	5 (71)	15 (75)	1.00
Mean BMI (95% CI) – kg/m^2	36 (29–42)	28 (25–29)	**<0.01**
Race or Ethnicity – no. (%)			
Asian	0 (0)	1 (5)	0.99
Black/African American	1 (14)	6 (30)	0.63
White	2 (29)	6 (30)	0.99
Hispanic or Latino ethnic group	4 (57)	7 (35)	0.39
Comorbidities – no. (%)			
Current Smoker	2 (29)	4 (22)	0.74
Asthma	1 (14)	1 (5)	0.45
Obstructive Sleep Apnea	5 (71)	14 (70)	0.26
Hypertension	3 (43)	13 (65)	0.39
Diabetes	4 (57)	8 (40)	0.66
Chronic kidney disease	1 (14)	2 (10)	1.00
Other comorbidities*	Variable	Variable	> 0.05
Presenting symptoms – no. (%)			
Fever	5 (71)	10 (50)	0.40
Cough	5 (71)	12 (60)	0.68
Somnolence/Lethargy	2 (29)	3 (15)	0.58
Witnessed cardiac arrest	0 (0)	1 (5)	1.00
Other symptoms**	Variable	Variable	> 0.05
Mean duration dyspnea pre-ICU admission (95% CI) – day	11 (7-14)	8 (5-12)	0.41
Mean lowest pulse oximetry pre-ICU admission (95% CI) - %	82 (70-93)	80 (70-90)	0.84
Mean SOFA score at ICU admission (95% CI) ***	9.3 (6.8–11.8)	7 (5.4-8.7)	0.09
P/F ratio at ICU admission < 150 – no. (%)	3 (43)	14 (74)	0.19
Mean worst arterial pO_2 first 24-hrs in ICU (95% CI) - mmHg	84 (67-100)	90 (72-108)	0.55
Mean lowest O_2 sat first 24-hrs in ICU (95% CI) - %	86 (80-92)	85 (80-90)	0.81
Intubated during ICU stay – no. (%)	7 (100)	19 (95)	1.00
Administration of Hydromorphone †† – no. (%)	6 (85.7)	19 (95)	0.46
ECMO treatment – no. (%)	0 (0)	1 (5)	1.00
Inhaled Nitric Oxide Gas Therapy – no. (%)	4 (57)	5 (25)	0.17
Mean time from ICU admission to MRI (95% CI) – day	24 (16-32)	22 (16-26)	0.58

Table 1 shows the demographics and baseline clinical characteristics of patients in both the "leukoencephalopathy with reduced diffusivity" and control groups.

*: Chronic lung disease, hypertension, diabetes, hyperlipidemia, peripheral vascular disease, liver disease, cancer, immunodeficiency, autoimmune disorders, pre-existing neurological disease, stroke, primary coagulopathy, anticoagulation, other conditions; all p-values > 0.05.
**: Myalgias, fatigue, loss of taste/smell, shortness of breath, diarrhea, abdominal pain, headache, rhinorrhea, sore throat, chills, back pain, and other miscellaneous symptoms; all p-values > 0.05.
***: Sequential Organ Failure Assessment score
†: P-values have not been adjusted for multiple testing and should not be used to infer definitive effects.
††: There was also no statistical difference in the proportion of patients receiving other sedatives and opioids (e.g., Midazolam, Propofol, Sulfentanil, Dexmedetomidine, Isoflurane, etc.).

Table 2

Intensive Care and Outcome data

Variable	Reduced Diffusivity Group (n=7)	Control Group (n=20)	P-value†
Organ damage reported in the ICU* – no. (%)			
Acute renal failure	7 (100)	9 (45)	0.06
Cardiac events	2 (29)	2 (10)	0.28
Acute liver failure	1 (14)	2 (10)	1.00
Ischemic bowel	1 (14)	2 (10)	0.99
Septic shock	6 (86)	18 (90)	0.99
Mean no. organ systems affected** - no. (95% CI)	2.4 (1.4-2.1)	1.8 (1.5-3.3)	0.10
Laboratory data within 24-hrs prior to MRI			
Mean lowest hemoglobin (95% CI) – g/dl	8.1 (7.4-8.7)	10.2 (9.2-11.3)	**0.02**
Mean RDW (95% CI) – CV	15.8 (14.5-17.1)	16.2 (15.4-17)	0.60
Mean platelet (95% CI) – 1000/µL	229 (189–270)	313 (231– 95)	0.23
Median lymphocyte count (IQR) – 1000/µL	1.1 (0.4)	1.5 (1.4)	0.26
Mean highest serum sodium (95% CI) – mmol/L	147 (139–154)	139 (137–141)	**0.04**
Median eGFR (IQR) – mL/min	49 (39)	85 (87)	0.06
Median of average WBC count (IQR) – 1000/µL	8.6 (5.5)	8.7 (4)	0.93
Median highest D-dimers (IQR) – ng/mL	4080 (4342)	2386 (3826)	0.09
Median C-reactive protein (IQR) – mg/L	42 (123)	55 (112)	0.57
Mean fibrinogen (95% CI) – mg/dL	591 (494–687)	582 (490–74)	0.88
Extubated at time of MRI – no. (%)	1 (14)	9 (45)	0.20
Mean worst arterial pO_2 on day of MRI (95% CI) - mmHg	115 (92-138)	84 (67-101)	0.02
Mean lowest O_2 sat on day of MRI (95% CI) - %	98 (95-100)	93 (91-95)	0.007
Outcome data			
Death at the time of the last follow-up – no. (%)	2 (28.6)	3 (15)	0.57
Discharged from the ICU***	2 (28.6)	12 (60)	0.21

Table 2 shows selected clinical and laboratory findings collected within 24-hours before MRI acquisition.

*: As documented in the ICU clinical notes of the Electronic Medical Record (EMR).
**: Organ systems include lung, heart, kidney, liver, bowel, septic shock, and DIC
***: This category includes patients in a step-down unit, regular inpatient ward, or outpatients.
†: P-values have not been adjusted for multiple testing and should not be used to infer definitive effects.

Table 3

Neuroimaging findings

Brain MRI Findings	Reduced Diffusivity group (N=7)	Control group (N=20)	P-value†
White matter severity score* - median (IQR)			
Supratentorial	3 (1)	1 (1)	**<0.001**
Infratentorial	2 (2)	0 (1)	**0.002**
Distribution of white matter signal abnormalities – no. (%)			
Predominantly symmetrical distribution ***	7 (100)	11/19 (58)	0.06
U-fiber involvement ***	1 (14)	7/19 (37)	0.37
Corpus callosum	2 (29)	6 (30)	0.99
Middle Cerebellar peduncles	6 (86)	1 (5)	**<0.001**
Cerebellar white matter	4 (57)	0 (0)	**0.002**
Brainstem	3 (43)	1 (5)	**0.04**
Additional Neuroimaging findings – no. (%)			
Number of micro-hemorrhages > 10	3 (43)	9 (53)	0.99
Cortical laminar necrosis	1 (14)	0 (0)	0.26
Abnormal deep gray matter signal	1 (14)	5(25)	0.99
Parenchymal enhancement **	1/4 (25)	1/7 (14)	0.99
Leptomeningeal enhancement **	0/4 (0)	0/7 (0)	1.00

Table 3 presents the neuroimaging findings, including a qualitative 4-point Likert white matter severity score* for the degree of infratentorial and supratentorial white matter signal abnormality; 0=normal, 1=mild (<25%), 2=moderate (25-50%), 3=severe (>50%).

** Only 4/7 MRI exams in the reduced diffusivity group and 7/20 in the control group included post-contrast imaging.

*** Calculations based on 19/20 patients with white matter lesions in the control group; one patient in the control group had a supratentorial and infratentorial white matter severity score of 0.

†: P-values have not been adjusted for multiple testing and should not be used to infer definitive effects.