

**Table S1.** Supplemental digital content. Associations between admission cerebrospinal fluid (CSF) protein oxidation biomarker ratios of o-Tyr/Phe, 3Cl-Tyr/p-Tyr, 3NO<sub>2</sub>-Tyr/p-Tyr and baseline patient characteristics, calculated using Spearman's Rank correlation.

Characteristic	o-Tyr/Phe		3Cl-Tyr/p-Tyr		3NO <sub>2</sub> -Tyr/p-Tyr	
	Rho	p value	Rho	p value	Rho	p value
Age, months	0.127	0.263	0.19	0.865	-0.047	0.680
Duration of preadmission illness, days	-0.215	0.057	-0.281	0.012	0.065	0.571
Axillary temperature, °C (n = 78)	0.229	0.044	0.249	0.028	-0.112	0.327
Systolic blood pressure, mmHg (n = 68)	0.032	0.798	0.099	0.423	-0.315	0.009
C-reactive protein Day 1 or 2, mg/L (n = 34)	-0.167	0.346	0.237	0.177	0.151	0.394
Glasgow Coma Score on admission (n = 78)	0.181	0.112	-0.145	0.207	-0.303	0.007
CSF leukocyte count	0.384	0.0005	0.120	0.293	-0.264	0.019
CSF glucose (n = 78)	-0.127	0.268	-0.041	0.721	0.319	0.004
MMP-8, ng/mL	0.190	0.094	0.032	0.776	-0.233	0.039
MMP-9, ng/mL (n = 78)	-0.091	0.427	0.082	0.473	-0.123	0.282
TIMP-1 ng/mL	-0.503	<0.0001	-0.097	0.394	0.131	0.249

**Table S2.** Supplemental digital content. Associations between admission cerebrospinal fluid protein oxidation biomarker ratios of o-Tyr/Phe, 3Cl-Tyr/p-Tyr and 3NO<sub>2</sub>-Tyr/p-Tyr (median) and baseline patient characteristics, calculated using Mann-Whitney U-test.

Characteristics	o-Tyr/Phe			3Cl-Tyr/p-Tyr			3NO <sub>2</sub> -Tyr/p-Tyr		
	Yes	No	p value	Yes	No	p value	Yes	No	p value
Sex, male	1.3177×10 <sup>-3</sup>	9.1579×10 <sup>-3</sup>	0.020	5.93398×10 <sup>-3</sup>	7.4315×10 <sup>-3</sup>	0.179	1.3481×10 <sup>-3</sup>	1.3670×10 <sup>-3</sup>	0.569
Another focus of infection	4.9733×10 <sup>-3</sup>	1.1418×10 <sup>-3</sup>	0.954	6.3509×10 <sup>-3</sup>	8.8842×10 <sup>-3</sup>	0.136	1.3391×10 <sup>-3</sup>	1.3007×10 <sup>-3</sup>	0.792
Sick above 3 days	1.3576×10 <sup>-3</sup>	6.3373×10 <sup>-3</sup>	0.047	5.4398×10 <sup>-3</sup>	1.0328×10 <sup>-2</sup>	0.059	1.3853×10 <sup>-3</sup>	1.2533×10 <sup>-3</sup>	0.897
Preadmission seizures	1.3164×10 <sup>-3</sup>	9.3656×10 <sup>-3</sup>	0.013	6.8099×10 <sup>-3</sup>	7.65899×10 <sup>-3</sup>	0.604	1.6374×10 <sup>-3</sup>	1.2044×10 <sup>-3</sup>	0.194
Preadmission antibiotics	2.3151×10 <sup>-3</sup>	1.8842×10 <sup>-3</sup>	0.880	6.7108×10 <sup>-3</sup>	7.0787×10 <sup>-3</sup>	0.974	1.4770×10 <sup>-3</sup>	1.2961×10 <sup>-3</sup>	0.796
Seizures at admission	1.1140×10 <sup>-3</sup>	8.1868×10 <sup>-3</sup>	0.001	6.8992×10 <sup>-3</sup>	7.8746×10 <sup>-3</sup>	0.729	1.6242×10 <sup>-3</sup>	1.2570×10 <sup>-3</sup>	0.494

<sup>a</sup>Median cerebrospinal fluid concentrations in nmol/L

**Table S3.** Supplemental digital content. Associations between admission cerebrospinal fluid protein oxidation biomarker ratios of o-Tyr-Phe, 3Cl-Tyr/p-Tyr and 3NO<sub>2</sub>-Tyr/p-Tyr (median) and course of illness and patient outcome, calculated using Mann-Whitney U-test.

\*Any hearing impairment = Does not hear 40dB either ear

Characteristic	o-Tyr/Phe			3Cl-Tyr/p-Tyr			3NO <sub>2</sub> -Tyr/p-Tyr		
	Yes	No	p value	Yes	No	p value	Yes	No	p value
Seizures at the ward	1.3682×10 <sup>-3</sup>	4.5530×10 <sup>-3</sup>	0.081	5.9915×10 <sup>-3</sup>	8.3584×10 <sup>-3</sup>	0.719	1.3480×10 <sup>-3</sup>	1.2497×10 <sup>-3</sup>	0.873
Seizures during hospital stay (on admission/at the ward)	1.3807×10 <sup>-3</sup>	8.1868×10 <sup>-3</sup>	0.022	6.760×10 <sup>-3</sup>	1.0296×10 <sup>-2</sup>	0.749	1.2570×10 <sup>-3</sup>	1.3436×10 <sup>-3</sup>	0.885
Focal seizures during illness	1.290×10 <sup>-3</sup>	4.9984×10 <sup>-3</sup>	0.039	6.7560×10 <sup>-3</sup>	7.0787×10 <sup>-3</sup>	0.726	1.2962×10 <sup>-3</sup>	1.3023×10 <sup>-3</sup>	0.992
Secondary fever	1.190×10 <sup>-3</sup>	7.2621×10 <sup>-3</sup>	0.009	5.43981×10 <sup>-3</sup>	7.8467×10 <sup>-3</sup>	0.958	1.53671.3025×10 <sup>-3</sup>	1.3025×10 <sup>-3</sup>	0.199
Glasgow Outcome Score below optimal									
On Day 7 of treatment	1.3164×10 <sup>-3</sup>	6.3373×10 <sup>-3</sup>	0.031	7.1594×10 <sup>-3</sup>	6.7101×10 <sup>-3</sup>	0.426	1.3481×10 <sup>-3</sup>	1.4225×10 <sup>-3</sup>	0.948

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\*\*Mild hearing impairment = Does not hear 40dB

One month after discharge	$1.2637 \times 10^{-3}$	$8.1868 \times 10^{-3}$	0.004	$6.99799 \times 10^{-3}$	$7.8746 \times 10^{-3}$	0.970	$1.3391 \times 10^{-3}$	$1.6528 \times 10^{-3}$	0.698
Death									
Within 24h of treatment	$1.5108 \times 10^{-3}$	$8.7040 \times 10^{-3}$	0.756	$1.2029 \times 10^{-2}$	$6.3508 \times 10^{-3}$	0.241	$1.2533 \times 10^{-3}$	$1.3436 \times 10^{-3}$	1.00
By Day 7 of treatment	$1.2460 \times 10^{-3}$	$2.7687 \times 10^{-3}$	0.398	$7.0787 \times 10^{-3}$	$6.7101 \times 10^{-3}$	0.624	$1.2044 \times 10^{-3}$	$1.4225 \times 10^{-3}$	0.332
Severe neurological sequelae									
On Day 7 (n = 48)	$1.3769 \times 10^{-3}$	$1.3682 \times 10^{-3}$	0.283	$8.3495 \times 10^{-3}$	$6.9980 \times 10^{-3}$	0.356	$1.8997 \times 10^{-3}$	$1.4497 \times 10^{-3}$	0.653
One month after discharge (n = 31)	$1.3164 \times 10^{-3}$	$3.7323 \times 10^{-3}$	0.285	$7.6310 \times 10^{-3}$	$5.9334 \times 10^{-3}$	0.422	$2.1466 \times 10^{-3}$	$2.1466 \times 10^{-3}$	0.285
Any neurological sequelae									
On Day 7 (n = 51)	$1.2272 \times 10^{-3}$	$1.27198 \times 10^{-2}$	0.0002	$4.9456 \times 10^{-3}$	$1.1382 \times 10^{-2}$	0.159	$1.6673 \times 10^{-3}$	$1.2008 \times 10^{-3}$	0.128
One month after discharge (n = 31)	$1.2097 \times 10^{-3}$	$9.3656 \times 10^{-3}$	0.03	$4.9447 \times 10^{-3}$	$1.1397 \times 10^{-2}$	0.029	$1.9297 \times 10^{-3}$	$1.4787 \times 10^{-3}$	0.381
Ataxia									
On Day 7 of treatment (n = 51)	$1.3423 \times 10^{-3}$	$1.27198 \times 10^{-2}$	0.0002	$5.4398 \times 10^{-3}$	$1.3451 \times 10^{-3}$	0.159	$1.6601 \times 10^{-3}$	$1.2242 \times 10^{-3}$	0.128

One month after discharge (n = 31)	$1.2630 \times 10^{-3}$	$9.3656 \times 10^{-3}$	0.015	$4.9451 \times 10^{-3}$	$8.2191 \times 10^{-3}$	0.087	$1.7034 \times 10^{-3}$	$1.6272 \times 10^{-3}$	0.603
<b>Hearing</b>									
impairment Day 7									
(n = 45)									
Any hearing impairment	$1.3682 \times 10^{-3}$	$6.6052 \times 10^{-3}$	0.106	$6.8099 \times 10^{-3}$	$4.5121 \times 10^{-3}$	0.601	$1.6528 \times 10^{-3}$	$1.1935 \times 10^{-3}$	0.133
Mild impairment*	$1.4373 \times 10^{-3}$	$2.8402 \times 10^{-3}$	0.903	$7.8761 \times 10^{-3}$	$4.93203 \times 10^{-3}$	0.207	$1.9297 \times 10^{-3}$	$1.1082 \times 10^{-3}$	0.035
Moderate impairment**	$1.2634 \times 10^{-2}$	$2.3896 \times 10^{-3}$	0.780	$6.750 \times 10^{-3}$	$6.750 \times 10^{-3}$	0.747	$6.750 \times 10^{-4}$	$1.3853 \times 10^{-3}$	0.090
Severe impairment***	$1.3422 \times 10^{-3}$	$6.750 \times 10^{-3}$	0.298	$6.1945 \times 10^{-3}$	$6.7301 \times 10^{-3}$	0.673	$1.3341 \times 10^{-3}$	$1.2570 \times 10^{-3}$	0.327
<b>Hearing</b>									
impairment at one month									
Any hearing impairment (n = 27)	$1.3423 \times 10^{-3}$	$5.0235 \times 10^{-3}$	0.200	$8.3775 \times 10^{-3}$	$4.9756 \times 10^{-3}$	0.300	$1.7657 \times 10^{-3}$	$1.3482 \times 10^{-3}$	0.373
Mild impairment	$1.7147 \times 10^{-3}$	$4.9734 \times 10^{-3}$	0.279	$5.4339 \times 10^{-3}$	$7.4434 \times 10^{-3}$	0.570	$6.5489 \times 10^{-3}$	$6.5489 \times 10^{-3}$	0.051
Moderate impairment	$1.3682 \times 10^{-3}$	$4.7631 \times 10^{-3}$	0.856	$1.2437 \times 10^{-2}$	$7.0767 \times 10^{-3}$	0.532	$1.6016 \times 10^{-3}$	$1.4126 \times 10^{-3}$	0.914

Severe             $9.8793 \times 10^{-4}$      $4.9984 \times 10^{-3}$     0.021             $7.4433 \times 10^{-3}$              $7.2923 \times 10^{-3}$     0.532             $1.0346 \times 10^{-3}$              $1.5393 \times 10^{-3}$     0.971

impairment<sup>^</sup>

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\*\*\*Moderate hearing impairment = Does not hear 60dB

\*\*\*\*Severe hearing impairment = Does not hear 80dB

<sup>^</sup>Severe hearing impairment n = 3, No severe hearing impairment n = 24