Supplementary Online Content

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eTable 1. Summary of Cases Who Died During RCSE Hospitalization

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This supplementary material has been provided by the authors to give readers additional information about their work.

eTable 1. Summary of Cases Who Died During RCSE Hospitalization

Case	Age	Sex	Days to death	Time to first benzodiazepine (min)	Previous diagnosis	Cause of death
1	21 months	F	15	35	No prior seizures	RCSE. MRI revealed cerebellar hypoplasia. Family opted for supportive care
2	12 years	M	5	72	Refractory epilepsy	RCSE, shock and metabolic acidosis
3	17 years	F	14	26	Refractory epilepsy	RCSE, encephalopathy of unknown etiology
4	1 year 10 months	M	7	115	Neurodegenerative disorder, suspected to be mitochondrial	RCSE on EEG until discontinuation of care. Family opted for supportive care
5	2 years 6 months	M	60	15	No prior seizures	RCSE and progressive meningoencephalitis of unclear etiology
6	11 years	M	49	15	No prior seizures	RCSE, FIRES, multi-system organ failure and abdominal compartment syndrome. Family opted for supportive care
7	4 months	M	32	720	Prune belly syndrome, no prior seizures	RCSE presentation secondary to a stroke

Legend: RCSE: refractory status epilepticus. **M:** male. **F:** female. **EEG:** electroencephalogram. **FIRES**: febrile infection-related epilepsy syndrome. **Min:** minutes.

eTable 2. Untimely First Benzodiazepine (≥10 Minutes) and Clinical Outcomes Stratified by Prehospital RCSE Onset (N=139)

	Outcome proportion	Univariate Analysis		Multivariate Analysis			
	No. (%)	Received Untimely Treatment, No. (%)	P value	AOR	Std. Error	95% C.I.	P value
Death	5 (4%)	5 (100%)	0.6	5	-	0.49, ∞	0.19
≥1 continuous infusions	74 (53%)	61 (82%)	0.1	2.5	1.1	1.05, 5.91	**0.039**
More than median convulsive duration (2 hours)	88 (%)	67 (%)	0.8	1.3	0.6	0.52, 3.18	0.6
Decline in baseline function at discharge	28 (%)	25 (%)	0.08	4.4	3.3	1.00, 18.92	0.05
ICU > median duration (4 days)	65 (%)	51 (%)	0.8	1.6	0.7	0.66, 3.76	0.3
Hypotension	45 (%)	36 (%)	0.7	1.8	0.9	0.72, 4.60	0.2
Other medical complications	33 (%)	28 (%)	0.3	1.9	1.1	0.63, 5.69	0.3

Legend: eTable 2 provides the results of AORs using multivariate regression models, with untimely first-line benzodiazepine treatment (≥10 minutes) as the predictor and the listed outcomes, in a subpopulation who had a RCSE onset in the prehospital setting. Death was adjusted for structural etiology, febrile RCSE, age, and no previous neurological history, and the other outcomes were adjusted for age, structural etiology, febrile RCSE, no previous neurological history, generalized RCSE, continuous RCSE and ≥5 ASM.
N: number. **ICU:** intensive care unit. **AOR:** adjusted odds ratio. **C.I.:** confidence interval. **Std.:** standard.
* Decline in baseline function at discharge: not able to do the same tasks as before at discharge.

eTable 3. Untimely First Benzodiazepine (≥10 Minutes) and Clinical Outcomes Stratified by Inhospital RCSE Onset (N=79)

	Outcome proportion	Univariate Analysis		Multivariate Analysis			
	No. (%)	Received Untimely Treatment, No. (%)	P value	AOR	Std. Error	95% C.I.	P value
Death	2 (%)	2 (100%)	0.6	3.6	-	0.27, ∞	0.33
≥1 continuous infusions	38 (53%)	19 (82%)	0.6	4.1	2.2	1.42, 11.98	**0.01**
More than median convulsive duration (2 hours)	34 (%)	22 (%)	0.007	1.4	0.7	0.55, 3.58	0.5
Decline in baseline function at discharge	19 (%)	8 (%)	1	1.1	0.6	0.32, 3.4	0.9
ICU > median duration (4 days)	50 (%)	24 (%)	0.8	1.5	0.8	0.54, 4.24	0.4
Hypotension	19 (%)	13 (%)	0.04	3.2	2.0	0.94, 11.00	**0.06**
Other medical complications	25 (%)	11 (%)	0.8	0.8	0.4	0.27, 2.11	0.6

Legend: eTable 3 provides the results of AORs using multivariate regression models, with untimely first-line benzodiazepine treatment (≥10 minutes) as the predictor and the listed outcomes, in a subpopulation who had a RCSE onset in the inhospital setting. Death was adjusted for structural etiology, febrile RCSE, age, and no previous neurological history, and the other outcomes were adjusted for age, structural etiology, febrile RCSE, no previous neurological history, generalized RCSE, continuous RCSE and ≥5 ASM.
N: number. **ICU:** intensive care unit. **AOR:** adjusted odds ratio. **C.I.:** confidence interval. **Std.:** standard.
* Decline in baseline function at discharge: not able to do the same tasks as before at discharge.

eTable 4. Time from RCSE Onset to Treatment in the Prehospital and Inhospital Setting

Time from SE onset (minutes)	Total N	Time to treatment [minutes (IQR)]	Prehospital SE onset [minutes (IQR)]	Inhospital SE onset [minutes (IQR)]	P value
Time until calling medical services	120	5 (0-17.5)	10 (2-53)	0 (0-1)	***p*<0.0001**
Time until EMS arrival	63	16 (10-25)	16 (10-25)	-	-
Time until hospital arrival	106	45 (30-80)	45 (30-80)	-	-
Time from RCSE onset to treatment (minutes)					
1st BZD	218	17 (5 – 45)	25 (10 - 60)	8 (4-24)	***p*<0.0001**
2nd BZD	184	36 (17 - 79)	43.5 (22 – 96)	20.5 (10-45)	***p*=0.0001**
3rd BZD	120	60 (30–155.5)	65 (45–149)	40 (22 – 189)	***p*=0.04**
1st Non-BZD ASM	206	63 (33 –150)	82 (45-170)	40 (22-74)	***p*<0.0001**
2nd Non-BZD ASM	170	120 (60 – 260)	131 (75.5 – 330)	74 (40 – 206)	***p*=0.002**
3rd Non-BZD ASM	88	254 (97 – 665)	298 (122.5 – 750)	159.5 (91 – 390)	*p*=0.11
1st Continuous infusion	98	176 (120-645)	172 (118-904)	192 (120-510)	*p*=0.5
2nd Continuous infusion	24	1500 (603.5-2295)	1440 (757-2040)	1560 (450-2880)	*p*=0.7

Legend: RCSE: refractory convulsive status epilepticus. **N:** number. **IQR:** interquartile range. **EMS**: Emergency Medical Services. **pSERG**: pediatric Status Epilepticus Research Group. **BZD**: benzodiazepine drug. **ASM**: anti-seizure medication.
*total N differ, as not all patients were treated with the same drugs, received the same services, or had the information available. Having a known time to first BZD was an eligibility criteria, but not the time to other treatment or services.