

SUPPLEMENTARY TABLES

Table e-1

Comparison of demographics between included patients and patients excluded due to lack of complete neuropsychiatric evaluation

		No psychiatric disorder (n=868)	Any psychiatric disorder (n=937)	Patients excluded due to incomplete neuropsychiatric evaluation (n=877)
Age at VEM, median (IQR), years		35 (26-46)	37 (29-47)	34 (25-46)
Sex – Female (%)		465 (54)	534 (57)	484 (55)
Follow up duration, median (IQR), years		9 (4-14)	9 (5-13)	11 (6-15)
Percentage stratified by epilepsy type	Focal	78	77	57
	Generalised	10	13	21
	Multifocal	8	8	9
	Combined focal and generalised	2	1	4
	ND	2	3	9

Percentage stratified by epilepsy syndrome	TLE	58	59	34
	ETLE	24	22	22
	GGE	8	11	17
	EE	1	0	4
	ND	9	9	23
Percentage stratified by presence of potentially epileptogenic lesion	Lesional	33	32	24
	MTS	23	18	10
	Non-lesional	35	41	46
	ND	9	9	20
Number deceased		60	87	139

ND, non-diagnostic; TLE, temporal lobe epilepsy; ETLE, extra-temporal lobe epilepsy; GGE, genetic generalised epilepsy; EE, epileptic encephalopathy; MTS, mesial temporal sclerosis

Table e-2

Cox proportional hazards model of time to death with adjustment for epilepsy type and lesionality

	Hazard Ratio (95% CI)					
	Any Psychiatric	Depressive Disorder (n=1117)	Anxiety Disorder (n=843)	Psychotic Disorder	Substance Misuse (n=836)	Personality Disorder (n=814)

	Disorder (n=1624)			r (n=830)		
Psychiatric comorbidity status vs No psychiatric disorder	1.54 (1.05 – 2.24)	1.58 (0.98 – 2.53)	0.98 (0.30 – 3.21)	2.15 (0.90 – 5.11)	0.95 (0.29 – 3.06)	1.21 (0.37 – 3.94)
Age at VEM	1.03 (1.02 – 1.05)	1.03 (1.02 – 1.05)	1.02 (1.00 – 1.04)	1.03 (1.01 – 1.05)	1.03 (1.01 – 1.05)	1.03 (1.01 – 1.05)
Male sex	1.73 (1.20 – 2.50)	1.81 (1.14 – 2.86)	1.63 (0.92 – 2.88)	1.85 (1.06 – 3.24)	1.59 (0.89 – 2.81)	1.89 (1.05 – 3.38)
Generalised epilepsy type (Ref)	1.0	1.0	1.0	1.0	1.0	1.0
Focal epilepsy type	1.30 (0.63 – 2.70)	1.12 (0.43 – 2.96)	2.32 (0.53 – 10.14)	1.00 (0.36 – 2.75)	2.14 (0.49 – 9.35)	2.15 (0.49 – 9.39)

Multifocal epilepsy type	1.22 (0.46 – 3.26)	1.72 (0.54 – 5.45)	3.03 (0.57 – 16.12)	1.26 (0.35 – 4.57)	2.76 (0.52 – 14.69)	2.75 (0.52 – 14.59)
Combined focal and generalised epilepsy type	2.61 (0.56 – 12.27)	2.96 (0.57 – 15.40)	2.55 (0.23 – 28.22)	1.04 (0.12 – 8.97)	2.50 (0.23 – 27.67)	2.38 (0.22 – 26.27)
Lesional (Ref)	1.0	1.0	1.0	1.0	1.0	1.0
MTS	0.90 (0.55 – 1.45)	0.92 (0.51 – 1.67)	0.95 (0.46 – 1.96)	1.13 (0.55 – 2.33)	1.06 (0.52 – 2.18)	0.95 (0.46 – 1.97)
Non-lesional	1.03 (0.66 – 1.60)	0.99 (0.57 – 1.73)	1.25 (0.62 – 2.49)	1.28 (0.64 – 2.57)	1.27 (0.63 – 2.56)	1.34 (0.67 – 2.69)

CI, confidence interval; MTS, mesial temporal sclerosis

Table e-3

Cox proportional hazards model of time to death with adjustment for epilepsy syndrome and lesionality

	Hazard Ratio (95% CI)

	Any Psychiatric Disorder (n=1537)	Depressive Disorder (n=1053)	Anxiety Disorder (n=798)	Psychotic Disorder (n=784)	Substance Misuse (n=790)	Personality Disorder (n=770)
Psychiatric comorbidity status vs No psychiatric disorder	1.51 (1.03 – 2.20)	1.52 (0.95 – 2.44)	0.95 (0.29 – 3.11)	2.10 (0.88 – 5.04)	0.95 (0.29 – 3.08)	1.16 (0.36 – 3.77)
Age at VEM	1.03 (1.02 – 1.05)	1.03 (1.02 – 1.05)	1.02 (1.00 – 1.04)	1.03 (1.01 – 1.05)	1.03 (1.00 – 1.05)	1.03 (1.01 – 1.05)
Male sex	1.69 (1.17 – 2.44)	1.74 (1.10 – 2.76)	1.61 (0.91 – 2.86)	1.83 (1.04 – 3.20)	1.57 (0.89 – 2.79)	1.86 (1.04 – 3.34)
GGE (Ref)	1.0	1.0	1.0	1.0	1.0	1.0
TLE	1.12 (0.53 – 2.35)	0.93 (0.34 – 2.51)	1.76 (0.39 – 7.93)	0.71 (0.25 – 2.06)	1.59 (0.35 – 7.17)	1.53 (0.34 – 6.87)

ETLE	1.26 (0.57 – 2.81)	1.05 (0.37 – 3.00)	2.14 (0.46 – 10.03)	0.98 (0.32 – 2.99)	1.95 (0.41 – 9.19)	1.93 (0.41 – 9.01)
EE	1.42 (0.18 – 11.41)	1.23 (0.14 – 10.60)	2.24 (0.20 – 24.98)	1.04 (0.12 – 9.11)	2.10 (0.19 – 23.39)	1.92 (0.17 – 21.34)
Lesional (Ref)	1.0	1.0	1.0	1.0	1.0	1.0
MTS	0.90 (0.54 – 1.52)	0.91 (0.47 – 1.74)	1.00 (0.45 – 2.25)	1.24 (0.55 – 2.80)	1.12 (0.50 – 2.50)	1.02 (0.45 – 2.30)
Non- lesional	1.06 (0.68 – 1.66)	1.06 (0.60 – 1.87)	1.32 (0.65 – 2.66)	1.33 (0.65 – 2.72)	1.34 (0.65 – 2.74)	1.41 (0.70 – 2.86)

CI, confidence interval; GGE, genetic generalised epilepsy; TLE, temporal lobe epilepsy; ETLE, extra-temporal lobe epilepsy; EE, epileptic encephalopathy; MTS, mesial temporal sclerosis

Table e-4

Cox proportional hazards model of time to death with adjustment for lifetime history of TCS

	Hazard Ratio (95% CI)

	Any Psychiatric Disorder (n=442)	Depressive Disorder (n=325)	Anxiety Disorder (n=266)	Psychotic Disorder (n=270)	Substance Misuse (n=275)	Personality Disorder (n=261)
Psychiatric comorbidity status vs No psychiatric disorder	1.18 (0.62 – 2.24)	2.08 (0.98 – 4.41)	0.00 (0.00 – 0.00)	0.78 (0.10 – 5.89)	1.02 (0.23 – 4.49)	0.66 (0.08 – 5.22)
Age at VEM	1.02 (0.99 – 1.05)	1.02 (0.99 – 1.05)	1.04 (1.00 – 1.07)	1.03 (1.00 – 1.07)	1.03 (1.00 – 1.07)	1.03 (1.00 – 1.07)
Male sex	1.85 (0.99 – 3.47)	1.93 (0.96 – 3.90)	2.37 (0.98 – 5.74)	2.15 (0.91 – 5.06)	2.04 (0.87 – 4.77)	2.46 (1.02 – 5.91)
Lifetime presence of TCS	2.38 (1.19 – 4.77)	3.11 (1.41 – 6.85)	4.23 (1.60 – 11.18)	4.33 (1.66 – 11.35)	3.61 (1.45 – 9.00)	4.19 (1.59 – 11.04)

CI, confidence interval; TCS, tonic-clonic seizure

Table e-5A

Cox proportional hazards model of time to death for PWE with depressive disorders
vs PWE without depressive disorders

	Hazard Ratio (95% CI)
Comorbid depressive disorder vs No depressive disorder	1.38 (0.99 – 1.92)
Age at VEM	1.04 (1.02 – 1.05)
Male sex	1.55 (1.12 – 2.15)

CI, confidence interval

Table e-5B

Cox proportional hazards model of time to death for PWE with anxiety disorders vs
PWE without anxiety disorders

	Hazard Ratio (95% CI)
Comorbid anxiety disorder vs No anxiety disorder	1.03 (0.61 – 1.74)
Age at VEM	1.04 (1.02 – 1.05)
Male sex	1.52 (1.09 – 2.11)

CI, confidence interval

Table e-5C

Cox proportional hazards model of time to death for PWE with psychotic disorders vs PWE without psychotic disorders

	Hazard Ratio (95% CI)
Comorbid psychotic disorder vs No psychotic disorder	1.42 (0.83 – 2.43)
Age at VEM	1.04 (1.03 – 1.05)
Male sex	1.51 (1.09 – 2.08)

CI, confidence interval

Table e-5D

Cox proportional hazards model of time to death for PWE with substance misuse disorders vs PWE without substance misuse disorders

	Hazard Ratio (95% CI)
Comorbid substance misuse disorder vs No substance misuse disorder	1.30 (0.80 – 2.12)
Age at VEM	1.04 (1.03 – 1.05)
Male sex	1.49 (1.07 – 2.06)

CI, confidence interval

Table e-5E

Cox proportional hazards model of time to death for PWE with personality disorders vs PWE without personality disorders

	Hazard Ratio (95% CI)
Comorbid personality disorder vs No personality disorder	1.28 (0.73 – 2.22)
Age at VEM	1.04 (1.03 – 1.05)
Male sex	1.51 (1.09 – 2.09)

CI, confidence interval

Figure e-1. Age group stratified relative risk of mortality in PWE with and PWE without psychiatric comorbidities.

The navy and maroon lines represent the relative risk (RR) of mortality in PWE without psychiatric comorbidities and PWE with any psychiatric comorbidity respectively. Shading represents the 95% confidence intervals for each group. In PWE with psychiatric comorbidities, the RR of mortality in the <30 year age group (RR 15.82, 95% CI 8.23-30.40) was significantly greater compared to those in the 40-49 year age group (RR 4.66, 95% CI 2.89-7.49), 50-59 year age group (RR 4.24, 95% CI 2.86-6.27) and ≥ 60 year age group (RR 1.89, 95% CI 1.26-2.84). In PWE without psychiatric comorbidities, the RR of mortality in the <30 year age group (RR 10.15,

95% CI 4.84-21.29) was significantly greater than those in the 50-59 year age group (HR 2.10, 95% CI 1.16-3.79) and ≥ 60 year age group (HR 1.19, 95% CI 0.72-1.98).

