

Supplementary Online Content

Joubert B, Chapelon-Abric C, Biard L, et al. Association of prognostic factors and immunosuppressive treatment with long-term outcomes in neurosarcoidosis. *JAMA Neurol*. Published online October 9, 2017. doi:10.1001/jamaneurol.2017.2492

eTable 1. Extraneurologic Characteristics of 234 Patients With NS

eTable 2. Overall and Relapse-Free Survival 1990-1999 (n = 55)

eTable 3. Overall and Relapse-Free Survival 2000-2015 (n = 179)

eTable 4. Factors Associated With the Risk for Neurologic and Nonneurologic Relapse in Patients With Neurosarcoidosis

eTable 5. Functional Outcomes at 60 Months 1990-1999 (n = 55)

eTable 6. Functional Outcomes at 60 Months 2000-2015 (n = 179)

eFigure. Overall and Relapse-Free Survival According to the Period of Neurosarcoidosis Diagnosis

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

eTable 1. Extraneurologic Characteristics of 234 Patients With NS

Characteristic	No. (%) of Patients
No. of sites	
0	18/234 (7.8)
1	52/234 (22.2)
2	68/234 (29.1)
3	41/234 (17.5)
≥4	55/234 (23.5)
Abnormal chest radiograph finding	162/234 (69.2)
Heart	84/194 (43.3)
General symptoms	82/234 (35.0)
Eye	67/234 (28.6)
Lymph node	67/234 (28.6)
Cutaneous and mucosal	49/234 (20.9)
Liver or spleen	41/234 (17.5)
Joints	36/234 (15.4)
Exocrine	35/234 (15.0)
Ear, nose, and throat	16/234 (6.8)
Kidney	7/234 (3.0)
Digestive tract	7/234 (3.0)
Bones	5/234 (2.1)
Elevated serum ACE level	85/172 (49.4)
Elevated CSF ACE level	42/55 (76.4)
Pathologic gallium scintigraphy	55/66 (83.3)

Abbreviations: ACE, angiotensin-converting enzyme; CSF, cerebrospinal fluid; NS, neurosarcoidosis.

eTable 2. Overall and Relapse-Free Survival 1990-1999 (n=55)

Variable	Overall survival			Relapse-free survival		
	Deaths /patients	HR (95% CI)	P Value	Relapses/patients	HR (95% CI)	P Value
General features						
EDSS at baseline (HR per point)	-	1.37 (1.02 ; 1.84)	.035	-	0.94 (0.84 ; 1.06)	.33
Age at NS diagnosis (HR per 10 years)	-	1.87 (0.94 ; 3.72)	.076	-	1.03 (0.77 ; 1.37)	.86
Male gender	2/29	0.28 (0.029 ; 2.65)	.26	19/23	0.61 (0.31 ; 1.20)	.15
Ethnic Background						
Caucasian	3/29	1		19/21	1	
African / Caribbean	1/16	0.53 (0.05 ; 5.15)	.58	11/13	0.55 (0.23 ; 1.27)	.16
North African/other	1/10	1.14 (0.11 ; 11.6)	.91	7/9	1.01 (0.42 ; 2.42)	.98
Smoking	1/11	1.31 (0.14 ; 12.6)	.82	8/8	1.49 (0.66 ; 3.35)	.34
Sarcoidosis classification*						
Definite	1/9	1		7/7	1	
Probable or possible	4/46	0.51 (0.05 to 4.90)	.56	29/36	1.11 (0.48 to 2.56)	.81
Biopsy-proven sarcoidosis	4/43	0.89 (0.09 ; 8.57)	.92	28/34	0.40 (0.17 ; 0.95)	.039
Extra-neurological involvement						
> 3 non-neurological sites involved	1/18	0.58 (0.06 ; 5.58)	.64	14/15	1.26 (0.64 ; 2.51)	.50
Abnormal chest radiography	4/42	1.01 (0.10 ; 9.69)	.99	28/33	1.16 (0.52 ; 2.57)	.72
Heart	0/14		.18	9/10	1.71 (0.74 ; 3.94)	.21
General symptoms	1/15	0.44 (0.048 ; 3.98)	.46	11/13	1.06 (0.49 ; 2.30)	.88
Eye	1/14	0.61 (0.06 ; 5.82)	.67	10/11	1.67 (0.78 ; 3.56)	.19
Lymph nodes	3/18	6.95 (0.72 ; 66.8)	.093	15/16	1.97 (0.96 ; 4.07)	.066
Cutaneous and mucosal	2/15	1.38 (0.22 ; 8.52)	.73	12/13	0.91 (0.45 ; 1.84)	.80
Liver or spleen	1/12	0.59 (0.06 ; 5.54)	.64	11/11	1.16 (0.57 ; 2.39)	.68
Joints	0/10		.30‡	7/9	0.73 (0.32 ; 1.69)	.46
Exocrine glands	0/14	0.93 (0.10 ; 8.96)	.95	9/9	0.92 (0.42 ; 2.01)	.84
Ear, nose and throat	0/5	-	.48‡	3/4	1.65 (0.49 ; 5.56)	.42
Kidney	0/2	-	.66‡	2/2	0.61 (0.14 ; 2.74)	.52
Digestive tract	1/2	7.09 (0.74 ; 68.2)	.09	2/2	0.77 (0.18 ; 3.34)	.73
Bones	0/2	-	.66‡	1/1	1.06 (0.14 ; 7.84)	.96
Neurological Involvement						
Encephalon	4/38	1.52 (0.16 ; 14.6)	.72	25/30	2.22 (1.03 ; 4.79)	.04
Myelopathy	2/19	1.05 (0.17 ; 6.36)	.96	10/13	0.87 (0.41 ; 1.84)	.72
Cranial nerve	2/22	1.64 (0.23 ; 11.6)	.62	16/18	1.02 (0.50 ; 2.07)	.96
Peripheral nervous system	2/9	2.30 (0.35 ; 15.0)	.38	7/8	1.03 (0.44 ; 2.41)	.94
Myopathy	1/4	5.13 (0.53 ; 49.5)	.16	4/4	2.89 (0.98 ; 8.51)	.054
Abnormal brain or spinal cord MRI	2/33	0.07 (0.005 ; 1.19)	.07	23/28	1.67 (0.37 ; 7.48)	.50
CSF protein level > 50 mg/dL	4/24		.04‡	18/20	0.56 (0.26 ; 1.23)	.15
CSF white blood cells > 5/mm ³	2/28	0.71 (0.10 ; 5.08)	.73	19/24	1.21 (0.55 ; 2.64)	.63
Elevated serum angiotensin-converting enzyme	3/25	3.05 (0.32 ; 29.3)	.33	16/20	0.87 (0.41 ; 1.84)	.72

‡P-value of Log Rank Test

eTable 3. Overall and Relapse-Free Survival 2000-2015 (n=179)

		Overall survival			Relapse-free survival		
Variable	Deaths /patients	HR (95% CI)	P Value	Relapses/patients	HR (95% CI)	P Value	
General features							
EDSS at baseline (HR per point)	-	1.19 (1.02 ; 1.38)	.03	-	1.00 (0.94 ; 1.07)	.90	
Age at NS diagnosis (HR per 10 years)	-	1.35 (0.98 ; 1.88)	.07	-	0.89 (0.78 ; 1.02)	.10	
Male gender	10/88	1.70 (0.62 ; 4.68)	.30	45/74	1.03 (0.69 ; 1.54)	.88	
Ethnic Background							
Caucasian	10/96	1		57/81	1		
African / Caribbean	5/42	1.28 (0.44 ; 3.75)	.65	22/35	0.74 (0.45 ; 1.22)	.24	
North African/other	1/41	0.32 (0.040 ; 2.47)	.27	21/35	1.02 (0.62 ; 1.69)	.93	
Smoking	4/43	0.83 (0.27 ; 2.59)	.75	31/41	1.11 (0.72 ; 1.70)	.64	
Sarcoidosis classification*							
Definite	4/24	1		16/24	1		
Probable or possible	12/155	0.56 (0.18 to 1.73)	.31	84/127	0.76 (0.44 to 1.30)	.32	
Biopsy-proven sarcoidosis	14/125	2.63 (0.60 ; 11.6)	.20	71/107	0.85 (0.55 ; 1.32)	.47	
Extra-neurological involvement							
> 3 non-neurological sites involved	2/37	0.46 (0.11 ; 2.04)	.31	21/31	0.98 (0.60 ; 1.59)	.93	
Abnormal chest radiography	3/29	1.00 (0.28 ; 3.53)	>.99	72/104	0.95 (0.61 ; 1.48)	.83	
Heart	5/70	0.68 (0.22 ; 2.08)	.50	43/62	1.09 (0.72 ; 1.65)	.69	
General symptoms	6/67	0.95 (0.35 ; 2.63)	.93	42/54	1.17 (0.79 ; 1.74)	.44	
Eye	3/53	0.49 (0.14 ; 1.71)	.26	32/42	1.05 (0.69 ; 1.61)	.81	
Lymph nodes	6/49	1.49 (0.54 ; 4.10)	.44	32/43	1.37 (0.90 ; 2.10)	.14	
Cutaneous and mucosal	1/34	0.28 (0.037 ; 2.14)	.22	15/27	0.69 (0.40 ; 1.20)	.19	
Liver or spleen	3/29	1.00 (0.28 ; 3.53)	>.99	17/26	1.02 (0.61 ; 1.73)	.93	
Joints	1/26	0.37 (0.049 ; 2.80)	.33	16/20	1.09 (0.64 ; 1.87)	.76	
Exocrine glands	3/23	1.52 (0.43 ; 5.34)	.51	13/19	0.87 (0.48 ; 1.57)	.65	
Ear, nose and throat	0/11	-	.33‡	5/7	2.07 (0.83 ; 5.16)	.12	
Kidney	0/5	-	.45‡	4/5	3.41 (1.24 ; 9.40)	.02	
Digestive tract	0/5	-	.44‡	3/5	0.99 (0.31 ; 3.13)	.98	
Bones	0/3	-	.56‡	2/3	0.83 (0.20 ; 3.38)	.79	
Neurological Involvement							
Encephalon	10/105	1.12 (0.41 ; 3.08)	.83	65/87	1.79 (1.17 ; 2.74)	.008	
Myelopathy	4/43	0.92 (0.30 ; 2.87)	.89	23/35	0.82 (0.51 ; 1.31)	.41	
Cranial nerve	4/64	0.54 (0.17 ; 1.68)	.29	41/54	1.03 (0.69 ; 1.56)	.87	
Peripheral nervous system	5/15	5.47 (1.89 ; 15.8)	.002	12/14	1.68 (0.91 ; 3.09)	.10	
Myopathy	2/15	1.72 (0.39 ; 7.57)	.48	9/14	1.26 (0.63 ; 2.52)	.51	
Abnormal brain or spinal cord MRI	11/121		.32‡	68/101	1.03 (0.41 ; 2.57)	.94	
CSF protein level > 50 mg/dL	10/93	2.64 (0.58 ; 12.0)	.21	58/79	1.47 (0.92 ; 2.35)	.11	
CSF white blood cells > 5/mm ³	9/91	2.06 (0.56 ; 7.63)	.28	53/72	1.36 (0.87 ; 2.14)	.18	
Elevated serum angiotensin-converting enzyme	8/60	1.74 (0.57 ; 5.33)	.33	32/53	0.87 (0.54 ; 1.40)	.56	

‡P-value of Log Rank Test

eTable 4. Factors Associated With the Risk for Neurologic and Nonneurologic Relapse in Patients With Neurosarcoidosis

Variable	Neurological relapse			Non-neurological relapse		
	Neurological /patients	HR (95% CI)*	P Value	Non-neurological relapses/patients	HR (95% CI)*	P Value
General features						
EDSS at baseline (HR per point)	-	0.99 (0.93 to 1.07)	.84	-	0.91 (0.78 to 1.05)	.19
Age at NS diagnosis (HR per 10 years)	-	0.82 (0.70 to 0.97)	.02	-	0.97 (0.72 to 1.29)	.81
Male gender	43/97	1.04 (0.68 to 1.59)	.86	11/97	0.54 (0.23 to 1.27)	.16
Ethnic Background						
	Caucasian	52/102	1	14/102	1	
	African / Caribbean	20/48	0.72 (0.43 to 1.20)	.21	5/48	0.34 (0.10 to 1.21)
	North African/other	16/44	0.82 (0.47 to 1.44)	.49	8/44	1.51 (0.63 to 3.61)
Smoking	24/49	1.06 (0.66 to 1.70)	.81	8/49	1.36 (0.58 to 3.20)	.48
Sarcoidosis classification*						
	Definite	14/31	1	6/31	1	
	Probable or possible	74/163	0.90 (0.50 to 1.59)	.71	21/163	0.63 (0.24 to 1.62)
Biopsy-proven sarcoidosis	61/141	0.70 (0.44 to 1.11)	.13	22/141	1.07 (0.39 to 2.92)	.89
Extra-neurological involvement						
> 3 non-neurological sites involved	22/46	1.02 (0.63 to 1.67)	.92	10/46	1.98 (0.89 to 4.45)	.10
Abnormal chest radiography	63/137	0.91 (0.57 to 1.46)	.70	20/137	1.00 (0.41 to 2.41)	>.99
Heart	36/72	1.13 (0.72 to 1.77)	.61	11/72	1.77 (0.72 to 4.38)	.21
General symptoms	39/67	1.43 (0.94 to 2.19)	.10	8/-67	0.87 (0.37 to 2.02)	.74
Eye	25/53	0.97 (0.61 to 1.55)	.91	10/53	1.80 (0.80 to 4.05)	.16
Lymph nodes	29/59	1.28 (0.82 to 2.01)	.28	10/59	2.24 (0.97 to 5.21)	.06
Cutaneous and mucosal	16/40	0.71 (0.41 to 1.23)	.22	8/40	1.41 (0.60 to 3.31)	.43
Liver or spleen	15/37	0.89 (0.51 to 1.55)	.67	9/37	2.08 (0.91 to 4.76)	.08
Joints	15/29	1.04 (0.59 to 1.82)	.89	8/29	1.93 (0.82 to 4.54)	.13
Exocrine glands	10/28	0.64 (0.33 to 1.24)	.18	7/28	1.60 (0.65 to 3.96)	.31
Ear, nose and throat	6/11	1.92 (0.82 to 4.47)	.13	2/11	3.02 (0.68 to 13.5)	.15
Kidney	3/7	1.60 (0.50 to 5.15)	.43	3/7	3.41 (0.84 to 13.9)	.09
Digestive tract	2/7	0.63 (0.15 to 2.55)	.51	2/7	1.89 (0.43 to 8.27)	.40
Bones	2/4	0.90 (0.22 to 3.68)	.88	1/4	1.60 (0.21 to 12.1)	.65
Neurological Involvement						
CNS localization	70/140	1.80 (1.06 to 3.06)	.03	16/140	0.82 (0.36 to 1.85)	.63
Encephalon	64/117	2.35 (1.44 to 3.83)	<.001	13/117	0.94 (0.43 to 2.07)	.87
Myelopathy	21/48	0.82 (0.50 to 1.35)	.43	5/48	0.65 (0.24 to 1.73)	.39
Cranial nerve	38/72	1.20 (0.78 to 1.85)	.40	12/72	1.01 (0.45 to 2.26)	.98
Peripheral nervous	11/22	1.20 (0.63 to 2.30)	.58	4/22	1.93 (0.64 to 5.83)	.24

system						
Myopathy	9/18	1.47 (0.73 to 2.94)	.28	0/18	-	.19‡
Abnormal brain or spinal cord MRI	65/129	1.37 (0.50 to 3.77)	.54	16/129	1.34 (0.17 to 10.3)	.78
CSF protein level > 50 mg/dL	54/99	1.36 (0.84 to 2.21)	.21	12/99	0.79 (0.31 to 2.00)	.62
CSF white blood cells > 5/mm ³	52/96	1.45 (0.90 to 2.32)	.13	7/96	0.66 (0.26 to 1.63)	.36
Elevated serum angiotensin-converting enzyme	28/73	0.73 (0.45 to 1.19)	.21	7/73	0.72 (0.26 to 1.96)	.52

* Cause-specific hazards ratios (neurological relapse, non-neurological relapse, relapse with unavailable localization, death as mutually competing risks)

‡P-value of Log-Rank test, stratified on time period (NS diagnosis in 1990-1999 versus 2000-2015); Estimation of hazards ratio using a Cox regression model was not performed due to the absence of non-neurological relapse in patients with myopathy

eTable 5. Functional Outcomes at 60 Months 1990-1999 (n=55)

		EDSS ≥ 2.5				Changes in EDSS from baseline to month 60			
Variable	Total number	Number (%) with EDSS ≥ 2.5	OR (95%CI)	P Value	Improvement Δ ≤ -1	Stability Δ = 0	Worsening Δ ≥ +1	P Value	
Total	52	18 (35)	-	-	17 (33)	32 (62)	3 (6)	-	
General Features									
EDSS at baseline (OR per point)	52		1.86 (1.3 ; 2.65)	.0007	2 (1 ; 5)	1 (0 ; 3)	2 (1 ; 2)	.20	
Age at NS diagnosis (OR per 10 years)	52	-	0.84 (0.43 ; 1.64)	.61	39 (27 ; 44)	36 (29 ; 44)	35 (32 ; 36)	.82	
Male	29	11 (38)	2.44 (0.49 ; 12.27)	.28	9 (53)	19 (59)	1 (33)	.73	
Ethnic background								.47	
Caucasian	28	12 (43)	1		7 (41)	19 (59)	2 (67)		
African / Caribbean	15	4 (27)	0.34 (0.05 ; 2.29)	.27	7 (41)	8 (25)	0 (0)		
North African / other	9	2 (22)	0.32 (0.03 ; 3.00)	.32	3 (18)	5 (16)	1 (33)		
Smoking	11	4 (36)	1.46 (0.28 ; 7.59)	.65	3 (19)	8 (25)	0 (0)	.87	
Sarcoidosis classification *								.65	
Definite	8	2 (25)	1		4 (24)	4 (12)	0 (0)		
Probable or possible	44	16 (36)	4.17 (0.3 ; 57.27)	.29	13 (76)	28 (88)	3 (100)		
Biopsy-proven sarcoidosis	40	14 (35)	0.78 (0.14 ; 4.26)	.78	16 (94)	22 (69)	2 (67)	.07	
Extra-neurological involvement									
> 3 non-neurological sites involved	18	4 (22)	0.14 (0.01 ; 1.26)	.08	6 (35)	11 (34)	1 (33)	>.99	
Abnormal chest X ray	40	15 (38)	0.9 (0.15 ; 5.55)	.91	16 (94)	21 (66)	3 (100)	.06	
Heart	14	4 (29)	0.31 (0.05 ; 2.18)	.24	6 (43)	8 (35)	0 (0)	.65	
General symptoms	15	2 (13)	0.61 (0.1 ; 3.61)	.58	5 (29)	9 (28)	1 (33)	>.99	
Eye	12	5 (42)	2.15 (0.4 ; 11.46)	.37	2 (12)	8 (25)	2 (67)	.13	
Lymph node	16	6 (38)	0.29 (0.04 ; 2.12)	.22	7 (41)	8 (25)	1 (33)	.54	
Cutaneous and mucosal	15	4 (27)	0.25 (0.03 ; 1.89)	.18	5 (29)	10 (31)	0 (0)	.78	
Liver or spleen	12	4 (33)	1.78 (0.35 ; 9.15)	.49	3 (18)	8 (25)	1 (33)	.76	
Exocrine	12	4 (33)	1.9 (0.36 ; 10.1)	.45	2 (12)	9 (28)	1 (33)	.38	
Joints	10	3 (30)	1.59 (0.25 ; 10.09)	.62	3 (18)	6 (19)	1 (33)	.72	
Ear, nose and throat	5	0 (0)		.15‡	2 (12)	3 (9)	0 (0)	>.99	
Kidney	2	0 (0)		.54‡	1 (6)	1 (3)	0 (0)	>.99	
Digestive tract	2	1 (50)		>.99‡	0 (0)	2 (6)	0 (0)	.59	
Bone	2	0 (0)		.54‡	1 (6)	1 (3)	0 (0)	>.99	
Elevated serum ACE	24	12 (50)	5.37 (0.9 ; 31.96)	.07	8 (57)	14 (50)	2 (67)	.90	
Neurological Involvement									
Encephalon	35	13 (37)	4.84 (0.56 ; 41.65)	.15	10 (59)	22 (69)	3 (100)	.50	
Spinal cord	19	6 (32)	0.59 (0.12 ; 2.87)	.51	7 (41)	12 (38)	0 (0)	.58	
Cranial nerve	21	6 (29)	0.46 (0.09 ; 2.29)	.34	7 (41)	13 (41)	1 (33)	>.99	
Peripheral nervous system	9	3 (33)	0.74 (0.1 ; 5.82)	.78	2 (12)	6 (19)	1 (33)	.47	
Muscle	4	2 (50)	2.87 (0.22 ; 36.93)	.42	2 (12)	1 (3)	1 (33)	.08	
Abnormal brain or spinal cord MRI	32	12 (38)	3.03 (0.06 ; 146.06)	.58	10 (91)	19 (95)	3 (100)	>.99	
CSF protein level > 50 mg/dL	23	13 (57)	1.51 (0.29 ; 7.71)	.62	8 (57)	14 (56)	1 (33)	.79	
CSF white blood cells > 5/mm³	27	11 (41)	0.87 (0.19 ; 3.99)	.86	12 (86)	12 (48)	3 (100)	.03	

‡P-values of Fisher'

eTable 6. Functional Outcomes at 60 Months 2000-2015 (n=179)

		EDSS ≥ 2.5				Changes in EDSS from baseline to month 60			
Variable		Total number	Number (%) with EDSS ≥ 2.5	OR (95%CI)	P Value	Improvement Δ ≤ -1	Stability Δ = 0	Worsening Δ ≥ +1	P Value
Total		108	38 (35)	-	-	45 (42)	49 (45)	14 (13)	-
General Features									
EDSS at baseline (OR per point)	108		1.8 (1.43 ; 2.27)	<.001	4 (2 ; 8)	1 (0 ; 2)	1 (0 ; 2)	<.001	
Age at NS diagnosis (OR per 10 years)	108	-	0.71 (0.49 ; 1.04)	.08	44 (37 ; 53)	45 (33 ; 58)	32 (27 ; 48)	.17	
Male	55	22 (40)	0.99 (0.36 ; 2.76)	.99	23 (51)	26 (53)	6 (43)	.83	
Ethnic background									.79
Caucasian	66	22 (33)	1		26 (58)	29 (59)	11 (79)		
African / Caribbean	27	11 (41)	1.28 (0.4 ; 4.07)	.67	12 (27)	13 (27)	2 (14)		
North African / other	15	5 (33)	0.67 (0.13 ; 3.57)	.64	7 (16)	7 (14)	1 (7)		
Smoking	30	16 (53)	4.07 (1.34 ; 12.39)	.01	10 (22)	13 (28)	7 (50)	.15	
Sarcoidosis classification *									.33
Definite	17	9 (53)	1		9 (20)	5 (10)	3 (21)		
Probable or possible	91	29 (32)	0.59 (0.16 ; 2.18)	.43	36 (80)	44 (90)	11 (79)		
Biopsy-proven sarcoidosis	77	25 (32)	0.56 (0.19 ; 1.68)	.30	31 (69)	37 (76)	9 (64)	.58	
Extra-neurological involvement									
> 3 non-neurological sites involved	28	6 (21)	0.55 (0.17 ; 1.83)	.33	10 (22)	14 (29)	4 (29)	.79	
Abnormal chest X ray	72	24 (33)	0.65 (0.23 ; 1.86)	.42	30 (67)	31 (63)	11 (79)	.61	
Heart	43	16 (37)	0.93 (0.32 ; 2.7)	.89	16 (47)	20 (49)	7 (50)	>.99	
General symptoms	41	11 (27)	0.68 (0.24 ; 1.94)	.48	17 (38)	16 (33)	8 (57)	.25	
Eye	37	9 (24)	0.99 (0.33 ; 2.99)	.99	11 (24)	20 (41)	6 (43)	.19	
Lymph node	33	9 (27)	0.5 (0.15 ; 1.65)	.26	9 (20)	19 (39)	5 (36)	.14	
Cutaneous and mucosal	20	6 (30)	0.63 (0.17 ; 2.36)	.49	7 (16)	12 (24)	1 (7)	.31	
Liver or spleen	20	4 (20)	0.27 (0.06 ; 1.24)	.09	8 (18)	10 (20)	2 (14)	.94	
Exocrine	15	4 (27)	0.71 (0.16 ; 3.22)	.66	6 (13)	7 (14)	2 (14)	>.99	
Joints	16	3 (19)	0.2 (0.03 ; 1.22)	.08	8 (18)	6 (12)	2 (14)	.81	
Ear, nose and throat	5	3 (60)	8.98 (1.22 ; 66.26)	.03	1 (2)	2 (4)	2 (14)	.20	
Kidney	5	1 (20)	0.75 (0.07 ; 7.66)	.81	3 (7)	1 (2)	1 (7)	.44	
Digestive tract	4	0 (0)	-	.30‡	1 (2)	3 (6)	0 (0)	.78	
Bone	2	0 (0)	-	.54‡	1 (2)	1 (2)	0 (0)	>.99	
Elevated serum ACE	40	11 (28)	0.35 (0.1 ; 1.19)	.09	20 (53)	17 (44)	3 (27)	.33	
Neurological Involvement									
Encephalon	64	25 (39)	2.4 (0.8 ; 7.19)	.12	25 (56)	26 (53)	13 (93)	.02	
Spinal cord	30	9 (30)	0.78 (0.26 ; 2.4)	.67	9 (20)	17 (35)	4 (29)	.27	
Cranial nerve	44	18 (41)	1.81 (0.65 ; 5.04)	.26	19 (42)	15 (31)	10 (71)	.03	
Peripheral nervous system	7	5 (71)	6.35 (0.9 ; 44.73)	.06	3 (7)	0 (0)	4 (29)	<.001	
Muscle	8	3 (38)	0.85 (0.13 ; 5.52)	.86	4 (9)	4 (8)	0 (0)	.77	
Abnormal brain or spinal cord MRI	70	31 (44)	0.46 (0.08 ; 2.73)	.39	31 (97)	28 (88)	11 (92)	.38	
CSF protein level >	58	31 (53)	3.52 (1 ; 12.36)	.049	22 (63)	24 (63)	12 (86)	.26	

50 mg/dL								
CSF white blood cells > 5/mm ³	52	28 (54)	1.88 (0.61 ; 5.81)	.27	23 (66)	19 (50)	10 (71)	.28

‡P-values of Fisher' exact test

eFigure. Overall and Relapse-Free Survival According to the Period of Neurosarcoidosis Diagnosis

