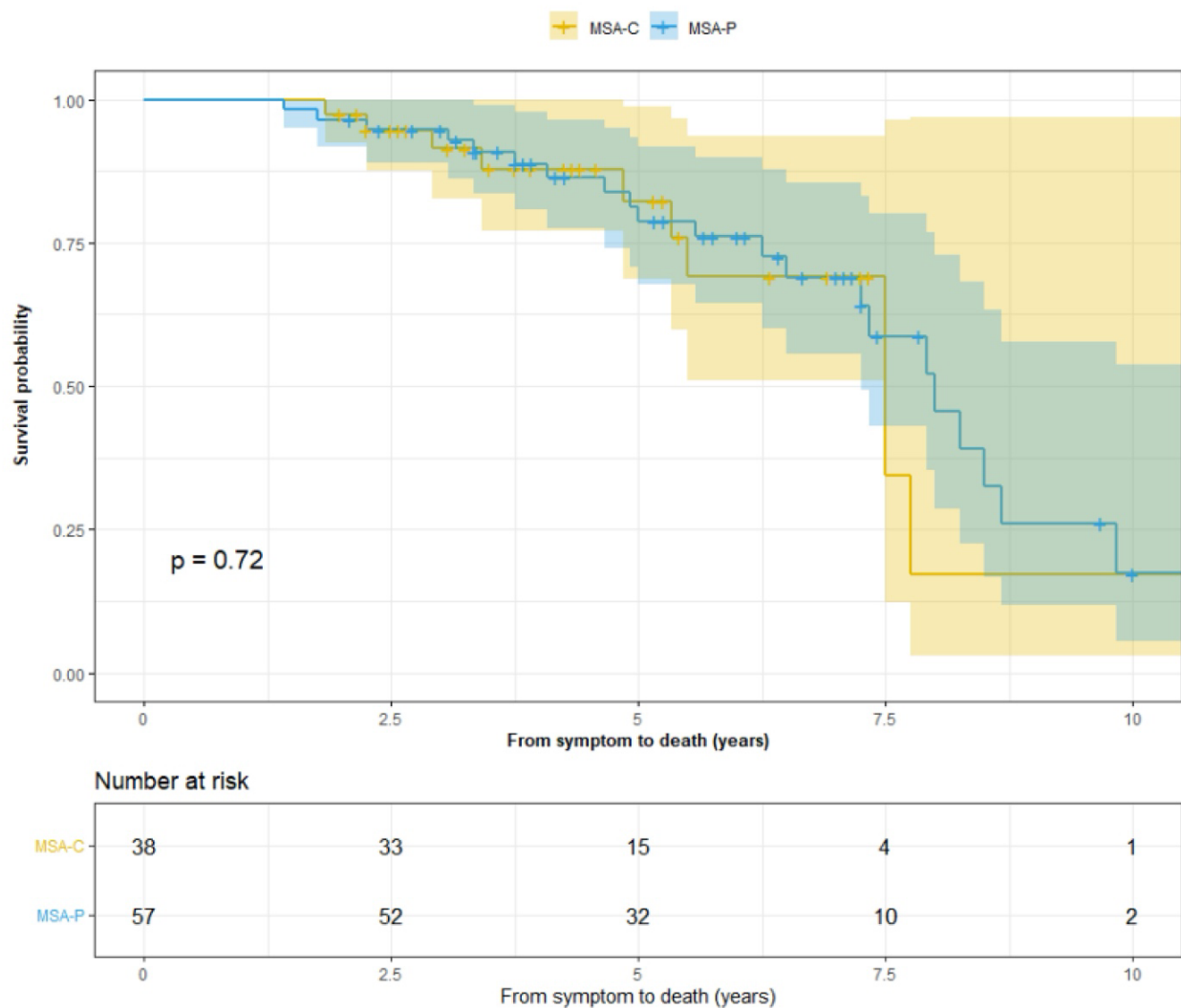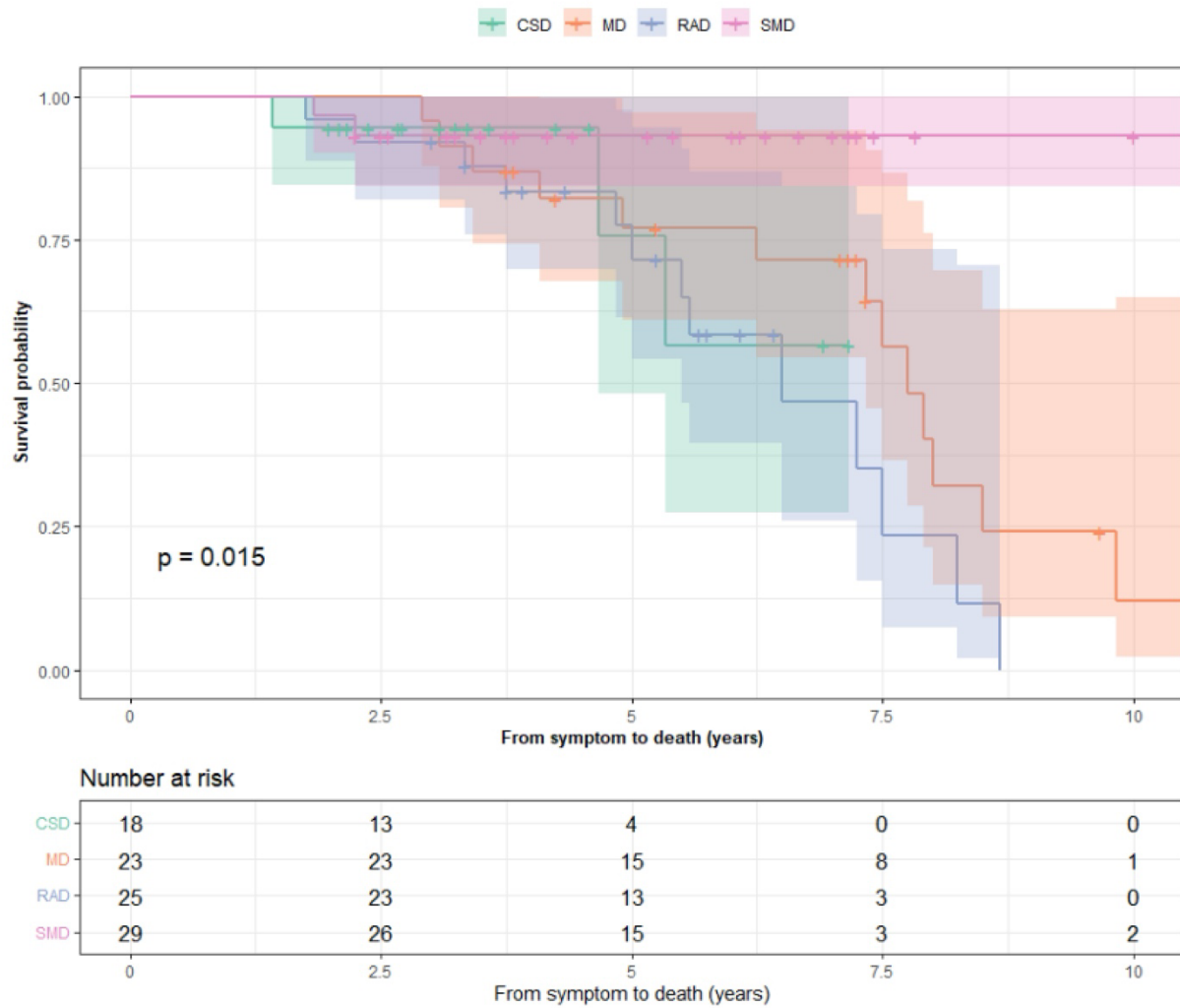# Supplementary Material

Data-Driven Subtypes of Multiple System Atrophy and Their Implications for Prognosis

Supplementary Figure 1. K–M survival curves for the probability of death from symptom onset to death in patients with MSA-P (n= 57) compared with those in patients with MSA-C (n=38) (p=0.72). MSA-P, MSA with parkinsonism variant; MSA-C, MSA with cerebellar variant.

Supplementary Figure 2. Comparison of Kaplan–Meier curves for the probability of death between patients in four clusters (p=0.015). CSD, cerebellar symptom dominant; MD, malignant diffuse; RAD, rigid akinetic dominant; SMD, sleep and mood disorder dominant.

Supplementary Table 1. Results of multivariate Cox proportional hazards regression analyses for survival and multivariate logistic analysis for bedbound status.

Variable	Death			Bedbound	
	HR (95% CI)	*p*		OR (95% CI)	*p*
Age (y)	1.01 [0.97,1.09]	0.323		0.91 [0.83,1.0]	0.044
Symptom onset to diagnosis (y)	0.44 [0.29,0.67]	<0.001		0.85 [0.60,1.21]	0.366
Sex					
Female	**1.0 (reference)**			**1.0 (reference)**	
Male	0.92 [0.42,2.01]	0.831		0.64 [0.18,2.30]	0.489
CA cluster[a]					
SMD	**1.0 (reference)**			**1.0 (reference)**	
MD	7.16 [1.52,33.76]	0.013		2.01 [0.34,11.89]	0.440
RAD	7.27 [1.56,33.83]	0.011		2.33 [0.51,10.65]	0.277
CSD	4.42 [0.69,28.07]	0.115		0.13 [0.01,1.23]	0.075
CA cluster[b]					
MD	**1.0 (reference)**			**1.0 (reference)**	
RAD	1.02 [0.41,2.54]	0.973		1.16 [0.15,8.76]	0.889
CA cluster[c]					
CSD	**1.0 (reference)**			**1.0 (reference)**	
MD	1.62 [0.38,6.98]	0.518		15.44 [1.05,226.13]	0.046
RAD	1.65 [0.42,6.51]	0.478		17.83 [1.60,198.75]	0.019

[a]After adjusting for age, years from symptom onset to diagnosis and sex, SMD was used as the reference category. [b]After adjusting for age, years from symptom onset to diagnosis and sex, MD was set as the reference category. [c]After adjusting for age, years from symptom onset to diagnosis and sex, CSD was set as the reference category.

CA, cluster analysis cluster. CSD, cerebellar symptom dominant; SMD, sleep and mood disorder dominant; RAD, rigid akinetic dominant; MD, malignant diffuse.