

	Training dataset (n=451)		Test dataset (n=194)	
Age	63.1	[61.7-64.5]	64.1	[62.0-66.1]
Sex (male/female)	142/309	(31.5/68.5)	69/125	(35.6/64.4)
Total GCS	11.3	[10.9-11.6]	11.1	[10.5-11.7]
Hunt and Kosnik				
1	84	(18.6)	27	(13.9)
2	126	(27.9)	63	(32.5)
3	93	(20.6)	38	(19.6)
4	71	(15.7)	35	(18.0)
5	77	(17.1)	31	(16.0)
WFNS grade				
1	147	(32.6)	55	(28.4)
2	105	(23.3)	51	(26.3)
3	17	(3.8)	10	(5.2)
4	88	(19.5)	29	(14.9)
5	94	(20.8)	49	(25.3)
Fisher group				
1	18	(4.0)	4	(2.1)
2	46	(10.2)	27	(13.9)
3	281	(62.3)	113	(58.2)
4	106	(23.5)	50	(25.8)
ICH	96	(21.3)	55	(28.4)
IVH	154	(34.1)	65	(33.5)
Hydrocephalus (onset)	96	(21.3)	53	(27.3)
Location				
anterior circulation	392	(86.9)	173	(89.2)
posterior circulation	59	(13.1)	21	(10.8)
Shape				
saccular	423	(93.8)	182	(93.8)
fusiform	28	(6.2)	12	(6.2)
Dome size [mm]	6.2	[5.8-6.5]	6.2	[5.7-6.8]
Neck diameter [mm]	3.3	[3.1-3.4]	3.2	[3.0-3.4]
Surgical approach				
clipping	233	(51.7)	108	(55.7)
endovascular	200	(44.3)	81	(41.8)
Rerupture during surgery	37	(8.2)	16	(8.2)
Takotsubo cardiomyopathy	14	(3.1)	6	(3.1)
Neutrophil counts (onset)	8333.2	[7856.5-8809.9]	7797.1	[7282.3-8311.9]
Platelet counts (onset) [10^4 /uL]	24.2	[23.6-24.9]	24.1	[23.0-25.2]
Lymphocyte counts (onset)	2289.8	[2153.9-2425.6]	2261.8	[2054.3-2469.3]
Serum albumin [g/dL]	4.1	[4.1-4.2]	4.1	[4.1-4.2]

Hb-onset [mg/dL]	13.3 [13.1-13.4]	13.4 [13.1-13.6]
Decompressive craniotomy	65 (14.4)	31 (16.0)
Hb-2w [mg/dL]	10.8 [10.7-11.0]	10.8 [10.6-11.1]
Lymphocyte counts-2w [/uL]	1315.1 [1254.2-1375.9]	1347 [1251.3-1442.7]
Fasudil hydrochloride use	402 (89.1)	176 (90.7)
Ozagrel sodium use	305 (67.6)	123 (63.4)
Clopidogrel intake	32 (7.1)	8 (4.1)
Cilostazol intake	205 (45.5)	84 (43.3)
Edalavone use	57 (12.6)	30 (15.5)
Meningitis	24 (5.3)	13 (6.7)
Pneumonia	81 (18.0)	37 (19.1)
Urinary tract infection	23 (5.1)	17 (8.8)
Sepsis	17 (3.8)	8 (4.1)
Terson syndrome	14 (3.1)	5 (2.6)
VSP (ACA)	88 (19.5)	34 (17.5)
DIND (ACA)	56 (12.4)	24 (12.4)
VSP (MCA)	113 (25.1)	43 (22.2)
DIND (MCA)	81 (18.0)	26 (13.4)
VSP (PCA)	23 (5.1)	11 (5.7)
DIND (PCA)	20 (4.4)	7 (3.6)
90-day mRS		
0	139 (30.8)	59 (30.4)
1	62 (13.7)	25 (12.9)
2	42 (9.3)	20 (10.3)
3	47 (10.4)	22 (11.3)
4	54 (12.0)	21 (10.8)
5	63 (14.0)	36 (18.6)
6	44 (9.8)	11 (5.7)

Table S2. Basement characteristic of training and test dataset

Clinical information of each category is demonstrated. Each cell represents the actual numbers (percentage). For age, total GCS, and laboratory data, average and 95% confident intervals are also noted.

	Cluster 1 (n=253)		Cluster 2 (n=170)		Cluster 3 (n=222)	
Age	58.8	[57.0-60.6]	64.6	[62.2-66.9]	67.7	[65.8-69.5]
Sex (male/female)	90/163	(35.6/64.4)	53/117	(31.2/68.8)	68/154	(30.6/69.4)
DM	20	(7.9)	16	(9.4)	13	(5.8)
HT	96	(37.9)	81	(47.7)	103	(46.4)
Dyslipidemia	43	(16.9)	30	(17.6)	23	(10.7)
Antiplatelets	4	(1.6)	13	(7.6)	17	(7.6)
Anticoagulants	3	(1.2)	5	(2.9)	6	(2.7)
Statin	22	(8.7)	24	(14.1)	20	(9.0)
Smoking	86	(34.0)	61	(35.9)	53	(23.9)
Alcohol	150	(59.3)	101	(59.4)	135	(60.8)
Total GCS	14.7	[14.6-14.8]	12.8	[12.5-13.1]	6.1	[5.7-6.4]
Hunt and Kosnik						
1	94	(37.2)	17	(10.0)	0	(0.0)
2	159	(62.9)	30	(17.7)	0	(0.0)
3	0	(0.0)	107	(62.9)	24	(10.8)
4	0	(0.0)	14	(8.2)	92	(41.4)
5	0	(0.0)	2	(1.2)	106	(47.8)
WFNS grade						
1	183	(72.3)	19	(11.2)	0	(0.0)
2	69	(27.3)	86	(50.6)	1	(0.5)
3	1	(0.4)	23	(13.5)	3	(1.4)
4	0	(0.0)	39	(22.9)	78	(35.1)
5	0	(0.0)	3	(1.8)	140	(63.1)
Fisher group						
1	19	(7.5)	3	(1.8)	0	(0.0)
2	46	(18.2)	17	(10.0)	10	(4.5)
3	159	(62.9)	121	(71.2)	114	(51.4)
4	29	(11.5)	29	(17.1)	98	(44.1)
ICH	21	(8.3)	29	(17.1)	101	(45.5)
IVH	33	(13.0)	59	(34.7)	127	(57.2)
Hydrocephalus (onset)	16	(6.3)	33	(19.4)	73	(32.9)
Location						
anterior	230	(90.91)	148	(87.1)	187	(84.2)
posterior	23	(9.09)	22	(12.9)	35	(15.8)
Shape						
saccular	244	(96.4)	160	(94.1)	201	(90.5)
fusiform	9	(3.6)	10	(5.9)	21	(9.5)
Dome size [mm]	5.6	[5.3-5.9]	5.8	[5.4-6.3]	7.2	[6.5-7.8]
Neck diameter [mm]	3	[2.9-3.2]	3.2	[2.9-3.4]	3.6	[3.3-3.8]
Surgical approach						

clipping	134 (53.0)	94 (55.3)	113 (50.9)
endovascular	112 (44.3)	68 (40.0)	101 (45.5)
Rerupture during surgery	19 (7.5)	16 (9.4)	18 (8.1)
Takotsubo cardiomyopathy	3 (1.2)	3 (1.8)	14 (6.3)
Neutrophil counts (onset)	7532 [6919.8-8144.4]	8375 [7748.8-9001.4]	8746 [8098.4-9392.9]
Platelet counts (onset)	24.5 [23.7-25.2]	24.1 [22.8-25.3]	24 [23.0-25.0]
Lymphocyte counts (onset)	1975 [1841.0-2109.6]	2168 [1955.8-2379.8]	2717 [2483.5-2950.6]
Serum albumin [g/dL]	4.2 [4.1-4.2]	4.1 [4.1-4.2]	4.1 [4.0-4.2]
Hb-onset [mg/dL] (onset)	13.4 [13.2-13.6]	13.2 [13.0-13.4]	13.2 [13.1-13.4]
Decompressive craniotomy	12 (4.7)	24 (14.1)	60 (27.0)

Table S3. Pre-surgical characteristics of each cluster

Presurgical clinical information of each cluster is demonstrated. Each cell represents the actual numbers (percentage). For age, total GCS, and laboratory data, average and 95% confident intervals are also noted.

	Cluster 1 (n=253)	Cluster 2 (n=170)	Cluster 3 (n=222)
VSP (ACA)	44 (17.4)	45 (26.5)	33 (14.9)
DIND (ACA)	23 (9.1)	24 (14.1)	33 (14.9)
VSP (MCA)	53 (21.0)	54 (31.8)	49 (22.1)
DIND (MCA)	28 (11.1)	34 (20.0)	45 (20.3)
VSP (PCA)	8 (3.2)	12 (7.1)	14 (6.3)
DIND (PCA)	4 (1.6)	7 (4.1)	16 (7.2)
90-day mRS			
0	145 (57.3)	43 (25.3)	10 (4.5)
1	51 (20.2)	18 (10.6)	18 (8.1)
2	26 (10.3)	20 (11.8)	16 (7.2)
3	14 (5.5)	26 (15.3)	29 (13.1)
4	7 (2.8)	32 (18.8)	36 (16.2)
5	7 (2.8)	16 (9.4)	76 (34.2)
6	3 (1.2)	15 (8.8)	37 (16.7)

Table S4. Detailed clinical outcome of each cluster

Outcome information of each cluster is demonstrated. Each cell represents the actual numbers (percentage). VSP: vasospasm, DIND: delayed ischemic neurologic deficit