

Supplementary Figure 1. Number of clusters approved by 26 clustering criteria from “NbClust” package of R software. The optimal cluster number with the most approval criteria was four.

Supplementary Table 1. Baseline characteristics and multiple comparison of aPL-positive patients in four clusters from cluster analysis.

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Variables, n (%) | All  (N=383) | Cluster 1  (N=138) | Cluster 2  (N=112) | Cluster 3  (N=83) | Cluster 4  (N=50) | *P*-Value | *P*-value for multiple comparison | | | | | |
| Cluster 1 vs Cluster 2 | Cluster 1 vs Cluster 3 | Cluster 1 vs Cluster 4 | Cluster 2 vs Cluster 3 | Cluster 2 vs Cluster 4 | Cluster 3 vs Cluster 4 |
| ***Demographics*** |  |  |  |  |  |  |  |  |  |  |  |  |
| Male sex | 114 (29.8) | 8 (5.8) | 87 (77.7) | 1 (1.2) | 18 (36.0) | 0.000\*\* | 0.000\* | 0.186 | 0.000\* | 0.000\* | 0.000\* | 0.000\* |
| Age (years), mean ± SD | 37.7 ± 12.1 | 36.4 ± 11.4 | 39.7 ± 14.8 | 37.6 ± 9.8 | 36.9 ± 10.7 | 0.608 | 0.213 | 0.377 | 0.813 | 0.735 | 0.478 | 0.674 |
| Age of onset a (years), mean ± SD | 31.2 ± 12.0 | 29.1 ± 11.4 | 33.2 ± 14.6 | 32.7 ± 9.7 | 30.4 ± 10.0 | 0.008\*\* | 0.039 | 0.000\* | 0.223 | 0.471 | 0.536 | 0.179 |
| Duration from onset to diagnosis (years), mean ± SD | 2.5 ± 4.6 | 2.5 ± 4.7 | 2.8 ± 4.9 | 1.7 ± 2.8 | 3.4 ± 5.9 | 0.009\*\* | 0.011 | 0.566 | 0.052 | 0.008\* | 0.802 | 0.026 |
| Asymptomatic aPLs carriers | 45 (11.7) | 21 (15.2) | 9 (8.0) | 9 (10.8) | 6 (12.0) | 0.368 | 0.082 | 0.358 | 0.578 | 0.503 | 0.61 | 0.838 |
| Associated autoimmune diseases |  |  |  |  |  |  |  |  |  |  |  |  |
| SLE | 93 (24.3) | 61 (44.2) | 6 (5.4) | 7 (8.4) | 19 (38.0) | 0.000\*\* | 0.000\* | 0.000\* | 0.000\* | 0.447 | 0.394 | 0.000\* |
| Other autoimmune diseasesb | 12 (3.1) | 3 (2.2) | 3 (2.7) | 3 (3.6) | 3 (6.0) | 0.591 | 0.591 | 1.000 | 0.833 | 0.396 | 1.000 | 0.559 |
| ***Clinical criteria*** |  |  |  |  |  |  |  |  |  |  |  |  |
| **Arterial thrombosis** | 127 (33.2) | 59 (42.8) | 51 (45.5) | 3 (3.6) | 14 (28.0) | 0.000\*\* | 0.659 | 0.000\* | 0.067 | 0.000\* | 0.035 | 0.000\* |
| Cerebral infarction | 70 (18.3) | 38 (27.5) | 26 (23.2) | 3 (3.6) | 3 (6.0) | 0.000\*\* | 0.436 | 0.000\* | 0.002\* | 0.000\* | 0.008\* | 0.833 |
| Coronary heart disease | 18 (4.7) | 8 (5.8) | 9 (8.0) | 0 (0.0) | 1.000 (2.0) | 0.045\*\* | 0.484 | 0.063 | 0.49 | 0.021 | 0.262 | 0.376 |
| Lower limb arterial thrombosis | 23 (6.0) | 9 (6.5) | 11 (9.8) | 0 (0.0) | 3 (6.0) | 0.041\*\* | 0.339 | 0.043 | 1.000 | 0.009 | 0.619 | 0.098 |
| Celiac artery thrombosis c | 20 (5.2) | 3 (2.2) | 12 (10.7) | 1 (1.2) | 4 (8.0) | 0.005\*\* | 0.005\* | 0.998 | 0.153 | 0.008\* | 0.803 | 0.127 |
| Retinal or ophthalmic artery thrombosis | 9 (2.3) | 6 (4.3) | 2 (1.8) | 0 (0.0) | 1 (2.0) | 0.205 | 0.433 | 0.134 | 0.753 | 0.509 | 1.000 | 0.376 |
| **Venous thrombosis** | 164 (42.8) | 46 (33.3) | 82 (73.2) | 14 (16.9) | 22 (44.0) | 0.000\*\* | 0.000\* | 0.002\* | 0.769 | 0.000\* | 0.002\* | 0.003\* |
| Lower limb deep venous thrombosis | 110 (28.7) | 33 (23.9) | 58 (51.8) | 6 (7.2) | 13 (26.0) | 0.000\*\* | 0.000\* | 0.009 | 0.401 | 0.000\* | 0.032 | 0.002\* |
| Pulmonary embolism | 82 (21.4) | 23 (16.7) | 44 (39.3) | 4 (4.8) | 11 (22.0) | 0.000\*\* | 0.723 | 0.198 | 0.761 | 0.085 | 1.000 | 0.098 |
| CTEPH | 14 (3.7) | 5 (3.6) | 6 (5.4) | 0 (0.0) | 3 (6.0) | 0.183 | 0.069 | 1.000 | 0.103 | 0.171 | 0.914 | 0.134 |
| Celiac venous thrombosis d | 20 (5.2) | 4 (2.9) | 9 (8.0) | 2 (2.4) | 5 (10.0) | 0.074 | 0.213 | 0.52 | 0.176 | 0.108 | 0.76 | 0.053 |
| Intracranial venous sinus thrombosis | 19 (5.0) | 5 (3.6) | 8 (7.1) | 1 (1.2) | 5 (10.0) | 0.077 | 0.473 | 0.654 | 1.000 | 1.000 | 0.553 | 0.527 |
| Retinal venous thrombosis | 6 (1.6) | 1 (0.7) | 3 (2.7) | 2 (2.4) | 0 (0.0) | 0.491 | 0.000\* | 0.002\* | 0.769 | 0.000\* | 0.002\* | 0.003\* |
| CAPS | 7 (1.8) | 2 (1.4) | 5 (4.5) | 0 (0.0) | 0 (0.0) | 0.118 | 0.293 | 0.529 | 1.000 | 0.136 | 0.305 | 1.000 |
| Obstetric morbidity e | 142 (64.0) | 60 (60.0) | 4 (23.5) | 63 (81.8) | 15 (53.6) | 0.000\*\* | 0.005\* | 0.002\* | 0.542 | 0.000\* | 0.048 | 0.003\* |
| Early miscarriages | 77 (34.5) | 36 (36.0) | 1 (5.9) | 34 (43.6) | 6 (21.4) | 0.011\*\* | 0.014 | 0.304 | 0.147 | 0.003\* | 0.332 | 0.038 |
| Fetal death＞10th week | 64 (28.7) | 24 (24.0) | 1 (5.9) | 29 (37.2) | 10 (35.7) | 0.032\*\* | 0.172 | 0.056 | 0.215 | 0.012 | 0.057 | 0.89 |
| Premature birth f | 34 (15.2) | 19 (19.0) | 4 (23.5) | 8 (10.3) | 3 (10.7) | 0.268 | 0.917 | 0.107 | 0.457 | 0.276 | 0.468 | 1 |
| **Non-criteria manifestations** | 184 (48.0) | 95 (68.8) | 54 (48.2) | 12 (14.5) | 23 (46.0) | 0.000\*\* | 0.001\* | 0.000\* | 0.004\* | 0.000\* | 0.794 | 0.000\* |
| Thrombocytopenia | 152 (39.7) | 80 (58.0) | 40 (35.7) | 11 (13.3) | 21 (42.0) | 0.000\*\* | 0.000\* | 0.000\* | 0.052 | 0.000\* | 0.446 | 0.000\* |
| Hemolytic anemia | 48 (12.5) | 29 (21.0) | 10 (8.9) | 2 (2.4) | 7 (14.0) | 0.000\*\* | 0.009 | 0.000\* | 0.28 | 0.061 | 0.331 | 0.026 |
| Heart valve disease | 22 (5.7) | 13 (9.4) | 5 (4.5) | 2 (2.4) | 2 (4.0) | 0.008\*\* | 0.132 | 0.045 | 0.364 | 0.709 | 1.000 | 1.000 |
| APL-associated nephropathy | 17 (4.4) | 5 (3.6) | 11 (9.8) | 0 (0.0) | 1 (2.0) | 0.006\*\* | 0.046 | 0.198 | 0.928 | 0.009 | 0.152 | 0.376 |
| Livedo reticularis | 7 (1.8) | 7 (5.1) | 0 (0.0) | 0 (0.0) | 0 (0.0) | 0.005\*\* | 0.042 | 0.091 | 0.235 | 1.000 | 1.000 | 1.000 |
| Skin ulcer | 2 (0.5) | 1 (0.7) | 1 (0.9) | 0 (0.0) | 0 (0.0) | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Non-stroke CNS manifestation | 24 (6.3) | 15 (10.9) | 7 (6.2) | 1 (1.2) | 1 (2.0) | 0.017\*\* | 0.2 | 0.007\* | 0.103 | 0.164 | 0.447 | 1.000 |
| Cognitive impairment | 10 (2.6) | 7 (5.1) | 3 (2.7) | 0 (0.0) | 0 (0.0) | 0.077 | 0.525 | 0.091 | 0.235 | 0.361 | 0.553 | 1.000 |
| Seizure | 17 (4.4) | 10 (7.2) | 5 (4.5) | 1 (1.2) | 1 (2.0) | 0.15 | 0.357 | 0.093 | 0.316 | 0.377 | 0.751 | 1.000 |
| Chorea | 5 (1.3) | 4 (2.9) | 1 (0.9) | 0 (0.0) | 0 (0.0) | 0.394 | 0.501 | 0.296 | 0.519 | 1.000 | 1.000 | 1.000 |
| ***Cardiovascular risk factors*** |  |  |  |  |  |  |  |  |  |  |  |  |
| Body mass index (kg/m2), mean ± SD | 23.7 ± 4.0 | 23.6 ± 4.3 | 24.7 ± 3.7 | 22.6 ± 3.9 | 23.6 ± 3.4 | 0.000\*\* | 0.006\* | 0.128 | 0.831 | 0.000\* | 0.056 | 0.151 |
| Smoking (past or current) | 69 (18.0) | 3 (2.2) | 51 (45.5) | 4 (4.8) | 11 (22.0) | 0.000\*\* | 0.000\* | 0.49 | 0.000\* | 0.000\* | 0.004\* | 0.002\* |
| Hypertension | 63 (16.4) | 18 (13.0) | 40 (35.7) | 1 (1.2) | 4 (8.0) | 0.000\*\* | 0.000\* | 0.002\* | 0.342 | 0.000\* | 0.000\* | 0.127 |
| Coronary artery disease | 14 (3.7) | 5 (3.6) | 9 (8.0) | 0 (0.0) | 0 (0.0) | 0.011\*\* | 0.131 | 0.198 | 0.395 | 0.021 | 0.091 | 1.000 |
| Diabetes | 10 (2.6) | 6 (4.3) | 4 (3.6) | 0 (0.0) | 0 (0.0) | 0.132 | 1.000 | 0.134 | 0.303 | 0.219 | 0.421 | 1.000 |
| Dyslipidemia | 211 (55.1) | 73 (52.9) | 65 (58.0) | 44 (53.0) | 29 (58.0) | 0.807 | 0.417 | 0.987 | 0.535 | 0.485 | 0.997 | 0.576 |
| CHO＞5.70 mmol/L | 85 (22.2) | 20 (14.5) | 23 (20.5) | 30 (36.1) | 12 (24.0) | 0.002\*\* | 0.208 | 0.000\* | 0.125 | 0.015 | 0.621 | 0.144 |
| TG＞1.70 mmol/L | 182 (47.5) | 66 (47.8) | 50 (44.6) | 39 (47.0) | 27 (54.0) | 0.746 | 0.616 | 0.904 | 0.454 | 0.745 | 0.271 | 0.433 |
| LDL＞3.37 mmol/L | 83 (21.7) | 16 (11.6) | 31 (27.7) | 22 (26.5) | 14 (28.0) | 0.005\*\* | 0.001\* | 0.004\* | 0.007\* | 0.856 | 0.966 | 0.851 |
| Hcy＞15 μmol/L | 89 (23.2) | 22 (15.9) | 47 (42.0) | 7 (8.4) | 13 (26.0) | 0.000\*\* | 0.000\* | 0.109 | 0.117 | 0.000\* | 0.052 | 0.006\* |
| ***Antibody profile*** |  |  |  |  |  |  |  |  |  |  |  |  |
| aCL, IgG/IgM | 186 (48.6) | 85 (61.6) | 67 (59.8) | 31 (37.3) | 3 (6.0) | 0.000\*\* | 0.775 | 0.000\* | 0.000\* | 0.002\* | 0.000\* | 0.000\* |
| aβ2-GPI, IgG/IgM | 266 (69.5) | 109 (79.0) | 88 (78.6) | 68 (81.9) | 1 (2.0) | 0.000\*\* | 0.937 | 0.596 | 0.000\* | 0.562 | 0.000\* | 0.000\* |
| LA | 283 (73.9) | 131 (94.9) | 99 (88.4) | 4 (4.8) | 49 (98.0) | 0.000\*\* | 0.058 | 0.000\* | 0.608 | 0.000\* | 0.088 | 0.000\* |
| ANA | 151 (39.4) | 82 (59.4) | 29 (25.9) | 17 (20.5) | 23 (46.0) | 0.000\* | 0.000\* | 0.000\* | 0.102 | 0.379 | 0.011 | 0.002\* |
| Anti-dsDNA | 65 (17.0) | 39 (28.3) | 8 (7.1) | 5 (6.0) | 13 (26.0) | 0.000\*\* | 0.000\* | 0.000\* | 0.759 | 0.757 | 0.001\* | 0.001\* |
| aCL, IgG/IgM +aβ2-GPI, IgG/IgM | 160 (41.8) | 80 (58.0) | 57 (50.9) | 23 (27.7) | 0 (0.0) | 0.000\*\* | 0.263 | 0.000\* | 0.000\* | 0.001\* | 0.000\* | 0.000\* |
| LA+ aCL, IgG/IgM | 148 (38.6) | 83 (60.1) | 60 (53.6) | 2 (2.4) | 3 (6.0) | 0.000\*\* | 0.296 | 0.000\* | 0.000\* | 0.000\* | 0.000\* | 0.559 |
| LA+ aβ2-GPI, IgG/IgM | 187 (48.8) | 104 (75.4) | 78 (69.6) | 4 (4.8) | 1 (2.0) | 0.000\*\* | 0.312 | 0.000\* | 0.000\* | 0.000\* | 0.000\* | 0.721 |
| Multiple aPL positive | 229 (59.8) | 109 (79.0) | 91 (81.2) | 25 (30.1) | 4 (8.0) | 0.000\*\* | 0.656 | 0.000\* | 0.000\* | 0.000\* | 0.000\* | 0.003\* |
| Triple aPL positive | 133 (34.7) | 79 (57.2) | 52 (46.4) | 2 (2.4) | 0 (0.0) | 0.000\*\* | 0.089 | 0.000\* | 0.000\* | 0.000\* | 0.000\* | 0.527 |
| ***Other laboratory tests*** |  |  |  |  |  |  |  |  |  |  |  |  |
| ESR elevation g | 106 (27.7) | 45 (32.6) | 29 (25.9) | 15 (18.1) | 17 (34.0) | 0.083 | 0.247 | 0.019 | 0.858 | 0.196 | 0.29 | 0.037 |
| CRP＞8 mg/L | 53 (13.8) | 22 (15.9) | 18 (16.1) | 4 (4.8) | 9 (18.0) | 0.061 | 0.978 | 0.013 | 0.737 | 0.014 | 0.761 | 0.029 |
| C3＜0.730 g/L | 60 (15.7) | 32 (23.2) | 12 (10.7) | 10 (12.0) | 6 (12.0) | 0.025\*\* | 0.01 | 0.041 | 0.091 | 0.771 | 0.81 | 0.993 |
| C4＜0.100 g/L | 60 (15.7) | 33 (23.9) | 12 (10.7) | 8 (9.6) | 7 (14.0) | 0.009\*\* | 0.007\* | 0.008\* | 0.142 | 0.807 | 0.548 | 0.441 |

\*\**P*＜0.05: Kruskal–Wallis test.

\**P*＜0.0083: Pearson chi-square test (or chi-square test with the Yates continuity, or Fisher exact test if appropriate) for categorical data, and the Mann-Whitney U test for qualitative data after *Bonferroni* correction.

*SD*, standard deviation; *CTEPH*, chronic thromboembolic pulmonary hypertension; *CNS*, central nervous system; *CHO*, total cholesterol; *TG*, triglycerides; *LDL*, low-density lipoprotein; *Hcy*, homocysteine; *ESR*, erythrocyte sedimentation rate; *CRP*, C-reactive protein.

a Age of onset was defined as the age at first thrombotic or obstetric episode for confirmed APS patients, or at the first aPLs positivity for asymptomatic aPLs carriers.

b Other autoimmune disease included primary Sjogren's syndrome, systemic vasculitis and psoriasis.

c Celiac artery thrombosis included thrombosis involving abdominal aorta, mesenteric artery, splenic artery, renal artery and adrenal artery.

d Celiac venous thrombosis included thrombosis involving portal vein, hepatic vein, splenic vein, mesenteric vein, inferior vena cava and renal vein.

e Calculated in female patients.

f Premature birth due to preeclampsia, eclampsia, or placental insufficiency before 34th week of gestation.

g ESR elevation was defined as ESR＞15 mm/h in males or＞20 mm/h in females.

Supplementary Table 2. Events and event-free Kaplan-Meier survival rate of aPL-positive patients in four clusters from cluster analysis.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Variables, n (%) | All  (N=383) | Cluster 1  (N=138) | Cluster 2  (N=112) | Cluster 3  (N=83) | Cluster 4  (N=50) | *P*-Value |
| Observation time (year), mean ± SD | 3.0 ± 2.2 | 3.4 ± 2.3 | 2.8 ± 2.1 | 3.0 ± 2.1 | 2.7 ± 2.2 | 0.047\* |
| Primary endpoint | 56 (14.6) | 23 (16.7) | 24 (21.4) | 3 (3.6) | 6 (12.0) | 0.005\* |
| Thrombosis | 43 (11.2) | 16 (11.6) | 21 (18.8) | 2 (2.4) | 4 (8.0) | 0.004\* |
| Arterial thrombosis | 15 (3.9) | 6 (4.3) | 8 (7.1) | 1 (1.2) | 0 (0.0) | 0.078 |
| Cerebral infarction | 10 (2.6) | 4 (2.9) | 5 (4.5) | 1 (1.2) | 0 (0.0) | 0.315 |
| Coronary heart disease | 2 (0.5) | 0 (0.0) | 2 (1.8) | 0 (0.0) | 0 (0.0) | 0.282 |
| Carotid artery thrombosis | 1 (0.3) | 1 (0.7) | 0 (0.0) | 0 (0.0) | 0 (0.0) | 1 |
| Celiac artery thrombosis a | 2 (0.5) | 1 (0.7) | 0 (0.0) | 1 (1.2) | 0 (0.0) | 0.789 |
| Lower limb arterial thrombosis | 1 (0.3) | 0 (0.0) | 1 (0.9) | 0 (0.0) | 0 (0.0) | 0.64 |
| Retinal or ophthalmic artery thrombosis | 1 (0.3) | 0 (0.0) | 1 (0.9) | 0 (0.0) | 0 (0.0) | 0.64 |
| Venous thrombosis | 29 (7.6) | 10 (7.2) | 13 (11.6) | 2 (2.4) | 4 (8.0) | 0.122 |
| Pulmonary embolism | 19 (5.0) | 7 (5.1) | 10 (8.9) | 0 (0.0) | 2 (4.0) | 0.043\* |
| Lower limb deep venous thrombosis | 8 (2.1) | 2 (1.4) | 2 (1.8) | 1 (1.2) | 3 (6.0) | 0.223 |
| Upper limb deep venous thrombosis | 1 (0.3) | 1 (0.7) | 0 (0.0) | 0 (0.0) | 0 (0.0) | 1 |
| Celiac venous thrombosis b | 2 (0.5) | 1 (0.7) | 0 (0.0) | 1 (1.2) | 0 (0.0) | 0.789 |
| Intracranial venous sinus thrombosis | 1 (0.3) | 0 (0.0) | 1 (0.9) | 0 (0.0) | 0 (0.0) | 0.64 |
| Retinal venous thrombosis | 1 (0.3) | 0 (0.0) | 1 (0.9) | 0 (0.0) | 0 (0.0) | 0.64 |
| Non-criteria manifestations | 11 (2.9) | 5 (3.6) | 3 (2.7) | 1 (1.2) | 2 (4.0) | 0.717 |
| Thrombocytopenia | 2 (0.5) | 2 (1.4) | 0 (0.0) | 0 (0.0) | 0 (0.0) | 0.632 |
| Hemolytic anemia | 3 (0.8) | 1 (0.7) | 1 (0.9) | 0 (0.0) | 1 (2.0) | 0.571 |
| Heart valve disease | 1 (0.3) | 0 (0.0) | 0 (0.0) | 1 (1.2) | 0 (0.0) | 0.347 |
| APS-related nephropathy | 1 (0.3) | 0 (0.0) | 0 (0.0) | 0 (0.0) | 1 (2.0) | 0.131 |
| Non-stroke CNS manifestations | 2 (0.5) | 2 (1.4) | 0 (0.0) | 0 (0.0) | 0 (0.0) | 0.632 |
| Diffuse alveolar hemorrhage | 1 (0.3) | 0 (0.0) | 1 (0.9) | 0 (0.0) | 0 (0.0) | 0.64 |
| Coronary artery microthrombosis | 1 (0.3) | 0 (0.0) | 1 (0.9) | 0 (0.0) | 0 (0.0) | 0.64 |
| Major bleeding events | 1 (0.3) | 0 (0.0) | 1 (0.9) | 0 (0.0) | 0 (0.0) | 0.64 |
| Death | 4 (1.0) | 2 (1.4) | 1 (0.9) | 1 (1.2) | 0 (0.0) | 1 |
| Primary endpoint occurrence rate per 100 person-years | 4.82 | 4.90 | 7.72 | 1.21 | 4.50 | 0.013\* |
| Thrombosis rate per 100 person-years | 3.70 | 3.41 | 6.75 | 0.81 | 3.00 | 0.002\* |
| AT rate per 100 person-years | 1.29 | 1.28 | 2.57 | 0.40 | 0 | 0.039\* |
| DVT rate per 100 person-years | 2.50 | 2.13 | 4.18 | 0.81 | 3.00 | 0.100 |
| Newly-onset non-criteria manifestations rate per 100 person-years | 0.95 | 1.07 | 0.96 | 0.40 | 1.50 | 0.512 |
| Major bleeding rate per 100 person-years | 0.09 | 0 | 0.32 | 0 | 0 | 0.416 |
| Mortality rate per 100 person-years | 0.34 | 0.43 | 0.32 | 0.4 | 0 | 0.751 |

\**P*＜0.05: Kruskal–Wallis test.

*SD*, standard deviation; *AT*, arterial thrombosis; *DVT*, deep venous thrombosis; *CI*, confidence interval.

a Celiac artery thrombosis included thrombosis involving abdominal aorta and mesenteric artery.

b Celiac venous thrombosis included thrombosis involving portal vein and hepatic vein.

Supplementary Table 3. Event-free survival rate and 95% confidence interval from Kaplan-Meier survival analysis.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Event-free survival rate, mean (95% CI) | | All  (N=383) | Cluster 1  (N=138) | Cluster 2  (N=112) | Cluster 3  (N=83) | Cluster 4  (N=50) | *P*-Value |
| Primary endpoint | 1-year | 92.6%  （90%-95.3%) | 92.6%  （88.4%-97.1%) | 87.4%  （81.4%-93.8%) | 98.8%  （96.5%-100%) | 94%  （87.6%-100%) | 0.013\* |
| 3-year | 85.2%  (81.3%-89.4%) | 85.9%  (79.8%-92.5%) | 76.8%  (68.3%-86.2%) | 94.3%  (88.1%-100%) | 86.6%  (75.7%-99.1%) |
| 5-year | 79.8%  （74.4%-85.5%) | 79.4%  （71.3%-88.4%) | 71%  （60.3%-83.5%) | 94.3%  （88.1%-100%) | 79.4%  （63.9%-98.7%) |
| Thrombosis endpoint | 1-year | 94.1%  （91.8%-96.5%) | 94%  （90.1%-98.1%) | 90%  （84.5%-95.8%) | 100%  （100%-100%) | 94%  （87.6%-100%) | 0.002\* |
| 3-year | 88.2%  (84.6%-92%) | 90.2%  (84.9%-95.7%) | 79.1%  (70.7%-88.4%) | 95.5%  (89.5%-100%) | 91%  (82.7%-100%) |
| 5-year | 84.7%  （79.8%-89.8%) | 86.1%  （78.9%-94%) | 73.1%  （62.3%-85.7%) | 95.5%  （89.5%-100%) | 91%  （82.7%-100%) |
| AT endpoint | 1-year | 97.8%  （96.3%-99.3%) | 96.2%  （93%-99.5%) | 97.1%  （93.9%-100%) | 100%  （100%-100%) | 100%  （100%-100%) | 0.039\* |
| 3-year | 95.4%  (93%-97.8%) | 95.3%  (91.6%-99%) | 91.4%  (85.4%-97.9%) | 97.9%  (94%-100%) | 100%  (100%-100%) |
| 5-year | 94.1%  （90.8%-97.6%) | 95.3%  （91.6%-99%) | 86.9%  （76.9%-98.1%) | 97.9%  （94%-100%) | 100%  （100%-100%) |
| DVT endpoint | 1-year | 97.8%  （96.3%-99.3%) | 97.8%  （95.3%-100%) | 92.7%  （87.9%-97.7%) | 100%  （100%-100%) | 94%  （87.6%-100%) | 0.100 |
| 3-year | 95.4%  (93%-97.8%) | 94.7%  (90.5%-99%) | 87.3%  (80.5%-94.6%) | 95.5%  (89.5%-100%) | 91%  (82.7%-100%) |
| 5-year | 94.1%  （90.8%-97.6%) | 90.4%  （83.6%-97.8%) | 84.9%  （77.1%-93.6%) | 95.5%  （89.5%-100%) | 91%  （82.7%-100%) |

\**P*＜0.05: log–rank test.

*AT*, arterial thrombosis; *DVT*, deep venous thrombosis; *CI*, confidence interval.