Table S1  Valve hemodynamic characteristics and pathophysiology

| Variables                  | Overall (n=651) | Mitral valve (n=166) | Aortic valve (n=485) | P value |
|----------------------------|----------------|----------------------|----------------------|---------|
| Aortic valve insufficiency |                |                      |                      | <0.001  |
| None                       | 97 (14.9)      | 45 (27.1)            | 52 (10.7)            |         |
| Trace                      | 101 (15.5)     | 36 (21.7)            | 65 (13.4)            |         |
| Mild                       | 154 (23.7)     | 32 (19.3)            | 122 (25.2)           |         |
| Moderate                   | 117 (18.0)     | 16 (9.6)             | 101 (20.8)           |         |
| Severe                     | 146 (22.4)     | 10 (6.0)             | 136 (28.0)           |         |
| Unknown                    | 36 (5.5)       | 27 (16.3)            | 9 (1.9)              |         |
| Aortic valve stenosis      | 444 (68.2)     | 47 (28.3)            | 397 (81.9)           | <0.001  |
| Aortic valve etiology      | 0.107          |                      |                      |         |
| Degenerative               | 557 (85.6)     | 142 (85.5)           | 415 (85.6)           |         |
| Endocarditis               | 21 (3.2)       | 3 (1.8)              | 18 (3.7)             |         |
| Rheumatic                  | 17 (2.6)       | 7 (4.2)              | 10 (2.1)             |         |
| Primary aortic disease     | 10 (1.5)       | 0 (0.0)              | 10 (2.1)             |         |
| Other                      | 46 (7.1)       | 14 (8.4)             | 32 (6.6)             |         |
| Bicuspid aortic valve      | 218 (33.5)     | 7 (4.2)              | 211 (43.5)           | <0.001  |
| Mitral valve insufficiency |                |                      |                      | <0.001  |
| None                       | 29 (4.5)       | 1 (0.6)              | 28 (5.8)             |         |
| Trace                      | 175 (26.9)     | 8 (4.8)              | 167 (34.4)           |         |
| Mild                       | 205 (31.5)     | 24 (14.5)            | 181 (37.3)           |         |
| Moderate                   | 82 (12.6)      | 28 (16.9)            | 54 (11.1)            |         |
| Severe                     | 124 (19.0)     | 104 (62.7)           | 20 (4.1)             |         |
| Not documented             | 36 (5.5)       | 1 (0.6)              | 35 (7.2)             |         |
| Mitral valve stenosis      | 116 (17.8)     | 101 (60.8)           | 15 (3.1)             | <0.001  |
| Mitral valve etiology      |                |                      |                      | <0.001  |
| Degenerative               | 298 (45.8)     | 58 (34.9)            | 240 (49.5)           |         |
| Endocarditis               | 8 (1.2)        | 7 (4.2)              | 1 (0.2)              |         |
| Rheumatic                  | 149 (22.9)     | 60 (36.1)            | 89 (18.4)            |         |
| Ischemic                   | 76 (11.7)      | 25 (15.1)            | 51 (10.5)            |         |
| Congenital                 | 1 (0.2)        | 1 (0.6)              | 0 (0.0)              |         |
| Other                      | 119 (18.3)     | 15 (9.0)             | 104 (21.4)           |         |

Data are shown as number (percentage).
Table S2  Outcomes in patients who survived at least 1-year following the index operation, stratified by anticoagulation

| Variables                        | Overall (n=622) | Non-therapeutic (n=299) | Therapeutic (n=323) | P value |
|----------------------------------|-----------------|-------------------------|---------------------|---------|
| Death                            | 31 (5.0)        | 15 (5.0)                | 16 (5.0)            | 0.971   |
| Readmission                      | 282 (45.3)      | 152 (50.8)              | 130 (40.3)          | 0.008   |
| Heart failure readmission        | 113 (18.2)      | 69 (23.1)               | 44 (13.6)           | 0.002   |
| Hemorrhagic stroke               | 11 (1.8)        | 6 (2.0)                 | 5 (1.6)             | 0.665   |
| Ischemic stroke                  | 27 (4.3)        | 18 (6.0)                | 9 (2.8)             | 0.048   |
| Transient ischemic attack        | 4 (0.6)         | 2 (0.7)                 | 2 (0.6)             | 0.938   |
| Bleeding event                   | 4 (0.6)         | 3 (1.0)                 | 1 (0.3)             | 0.280   |
| Non-stroke thromboembolism       | 3 (0.5)         | 2 (0.7)                 | 1 (0.3)             | 0.518   |
| Readmission for heparin          | 96 (15.4)       | 56 (18.7)               | 40 (12.4)           | 0.029   |

Data are shown as number (percentage).

Table S3  Post-operative outcomes in the non-therapeutic and therapeutic groups, stratified by valve position

| Variables                        | Non-therapeutic | Therapeutic | P value |
|----------------------------------|-----------------|-------------|---------|
| Mitral valve                     | N=122           | N=43        |         |
| Mortality                        | 18 (14.75)      | 5 (11.63)   | 0.61    |
| Any readmission                  | 75 (61.48)      | 20 (46.51)  | 0.09    |
| Heart failure readmission        | 49 (40.16)      | 11 (25.58)  | 0.09    |
| Hemorrhagic stroke               | 5 (4.10)        | 1 (2.33)    | 0.59    |
| Ischemic stroke                  | 8 (6.56)        | 3 (6.98)    | 0.92    |
| Transient ischemic attack        | 2 (1.64)        | 0 (0.00)    | 0.40    |
| Bleeding                         | 3 (2.46)        | 0 (0.00)    | 0.30    |
| Thromboembolism                  | 1 (0.82)        | 0 (0.00)    | 0.55    |
| Need for heparin                 | 32 (26.23)      | 5 (11.63)   | 0.05    |
| Aortic valve                     | N=196           | N=286       |         |
| Mortality                        | 16 (8.16)       | 17 (5.94)   | 0.34    |
| Any readmission                  | 88 (44.90)      | 113 (39.51) | 0.24    |
| Heart failure readmission        | 25 (12.76)      | 36 (12.59)  | 0.96    |
| Hemorrhagic stroke               | 3 (1.53)        | 4 (1.40)    | 1.00    |
| Ischemic stroke                  | 11 (5.61)       | 7 (2.45)    | 0.09    |
| Transient ischemic attack        | 0 (0.00)        | 2 (0.70)    | 0.70    |
| Bleeding                         | 1 (0.51)        | 1 (0.35)    | 1.00    |
| Thromboembolism                  | 1 (0.51)        | 1 (0.35)    | 1.00    |
| Need for heparin                 | 32 (16.33)      | 35 (12.24)  | 0.02    |

Data are shown as number (percentage).
Figure S1 Freedom from readmission for IV heparin in patients classified as non-therapeutic or therapeutic based on number of INR levels within the therapeutic range. HRs for the non-therapeutic INR group with associated 95% CIs and P values are shown in the table in the inset. IV, intravenous; INR, international normalized ratio; HR, hazard ratio; CI, confidence interval.

Figure S2 Freedom from non-stroke peripheral arterial thromboembolism (A) and major bleeding (B) in patients classified as non-therapeutic or therapeutic based on number of INR levels within the therapeutic range. INR, international normalized ratio.