

**Table S1** Operation information, ring and valve type and size

| Valve or ring | Valve position | Type              | N  |
|---------------|----------------|-------------------|----|
| Valve         | Aortic         | Avalus            | 21 |
|               |                | Carpentier Edward | 68 |
|               |                | Trifecta          | 8  |
|               |                | Hancock           | 1  |
|               |                | Mitroflow         | 1  |
|               | Mitral         | Carpentier Edward | 51 |
|               |                | Hancock           | 22 |
|               |                | On-X              | 2  |
|               | Tricuspid      | On-X              | 1  |
| Ring          | Mitral         | C-ring            | 10 |
|               |                | Physio            | 8  |
|               |                | CG future         | 7  |
|               |                | Saddle            | 4  |
|               | Tricuspid      | MC3               | 51 |
|               |                | Tri-Ad            | 43 |
|               |                | Other method      | 2  |

C-E, Carpentier Edward.