

주최·주관 대한심장혈관흉부외과학회

2024 대한심장혈관흉부외과학회 제56차 추계학술대회

2024. 10. 31 (Thu) - 11. 01 (Fri) 여수 엑스포 컨벤션센터



Long-Term Outcomes of Mitral Valve Repair and Replacement in Infective Endocarditis

- While patients with infective endocarditis are often treated with aggressive antibiotics, surgery is still often required for complete treatment.
- In case such as degenerative disease of valve that require surgery of the mitral valve, it is believed to be beneficial in the long-term to perform mitral valve repair whenever possible.
- The long-term feasibility of mitral valve repair in infective endocarditis of the mitral valve remains unclear.
- **This study aims to compare the utility of mitral valve repair versus replacement in infective endocarditis by comparing survival, reoperation and reinfection rates with long-term outcomes.**

STUDY POPULATION

511

Valve surgery patients
with infective endocarditis
Jan 2005 – Dec 2020

Exclusion Criteria

- w/o Mitral valve surgery
- Not available medical records

241

Mitral valve surgery
combined
w/ other heart surgery

53

Mitral valve
repair

188

Mitral valve
replacement

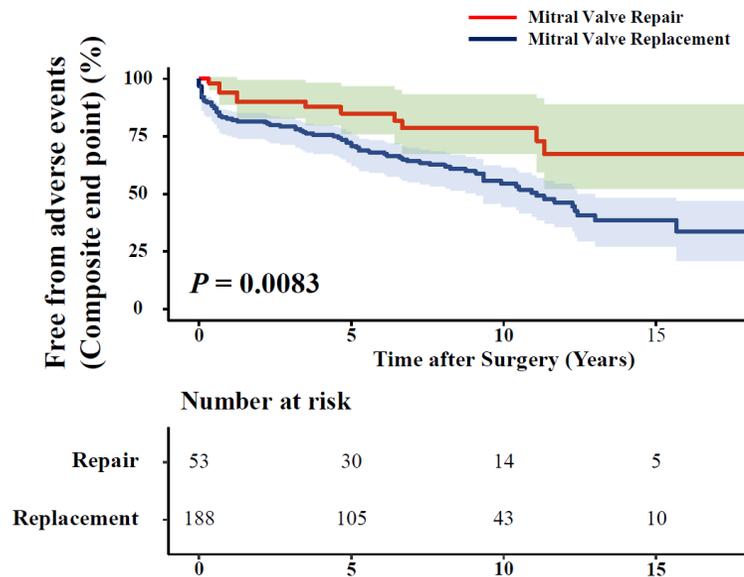
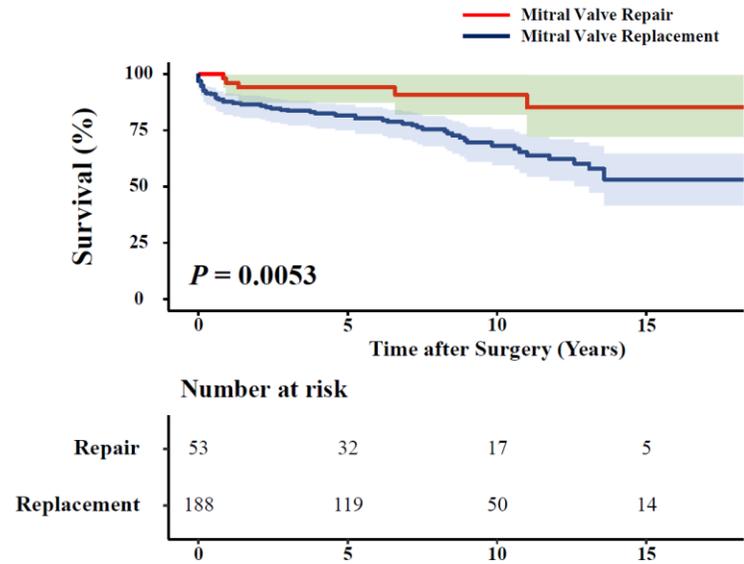
Outcome
(Composite end point)

- Mortality
- Stroke
- Any bleeding
- Re-operation for MV
- Re-admission for HF
- Re-infection of MV
- Recurrence of MV disease



| Patient clinical characteristics | | | |
|----------------------------------|--------------------|--------------------------|---------|
| | Repair (N = 55) | Replacement (N = 188) | P value |
| Age, years | 48.81 ± 13.86 | 52.96 ± 15.55 | 0.080 |
| Female, n (%) | 18 (34.0) | 65 (34.6) | > 0.999 |
| Hypertension, n (%) | 17 (32.1) | 78 (41.5) | 0.280 |
| Diabetes mellitus, n (%) | 8 (15.1) | 37 (19.1) | 0.577 |
| Old stroke, n (%) | 12 (22.6) | 44 (23.4) | > 0.999 |
| Dyslipidemia, n (%) | 4 (7.5) | 25 (13.3) | 0.369 |
| Peripheral vessel disease, n (%) | 1 (1.9) | 3 (1.6) | > 0.999 |
| Chronic kidney disease, n (%) | 3 (5.7) | 13 (6.9) | 0.991 |
| Hemodialysis, n (%) | 1 (1.9) | 5 (2.7) | > 0.999 |
| Heart failure, n (%) | 15 (28.3) | 29 (20.7) | 0.328 |
| Anemia, n (%) | 15 (28.3) | 47 (25.0) | 0.758 |
| Coronary artery disease, n (%) | 7 (13.2) | 27 (14.4) | > 0.999 |
| Atrial fibrillation, n (%) | 7 (13.2) | 38 (20.2) | 0.339 |
| Chronic liver disease, n (%) | 3 (5.7) | 8 (4.3) | 0.952 |
| Chronic lung disease, n (%) | 6 (11.3) | 15 (8.0) | 0.627 |
| Other organ infection, n (%) | 3 (5.7) | 8 (4.3) | 0.613 |
| Other organ infarction, n (%) | 6 (11.3) | 15 (8.0) | 0.627 |
| Sepsis, n (%) | 6 (11.3) | 44 (23.4) | 0.085 |
| Malignancy, n (%) | 2 (3.8) | 12 (6.4) | 0.700 |

| Operative characteristics and findings | | | |
|--|--------------------|--------------------------|---------|
| | Repair (N = 55) | Replacement (N = 188) | P value |
| Urgent operation, n (%) | 1 (1.9) | 3 (1.6) | > 0.999 |
| Emergency operation, n (%) | 3 (5.7) | 7 (3.7) | 0.815 |
| Previous cardiac surgery, n (%) | 3 (5.7) | 31 (16.5) | 0.076 |
| Vegetation | | | |
| Size, cm | 1.1 ± 0.5 | 1.4 ± 0.7 | < 0.001 |
| Single, n (%) | 27 (50.9) | 70 (30.2) | 0.101 |
| Multiple, n (%) | 18 (34.0) | 105 (55.9) | 0.008 |
| Valvular abscess, n (%) | 1 (1.9) | 16 (8.5) | 0.174 |
| Leaflet perforation, n (%) | 6 (11.3) | 34 (18.1) | 0.337 |
| Leaflet destruction, n (%) | 3 (5.7) | 42 (22.3) | 0.011 |
| Leaflet prolapse, n (%) | 10 (18.9) | 13 (7.4) | 0.028 |
| Chordae rupture, n (%) | 28 (52.8) | 32 (17.0) | < 0.001 |
| Annular dilatation, n (%) | 7 (13.2) | 6 (3.2) | 0.012 |
| Operative indications, n (%) | | | |
| Uncontrolled infection | 10 (18.9) | 58 (30.9) | 0.123 |
| Heart failure | 15 (28.3) | 20 (10.6) | 0.186 |
| Embolization | 3 (5.7) | 21 (11.2) | 0.355 |
| Large vegetation | 5 (9.4) | 12 (6.4) | 0.470 |
| Multivalvular involvement | 13 (24.5) | 58 (30.9) | 0.470 |



Cox-regression model for predictors of adverse events

| | Univariate | | Multivariate | |
|----------------------------------|------------|----------------------|--------------|-----------------------|
| | P value | HR (95% CI) | P value | HR (95% CI) |
| Mitral valve replacement | 0.010 | 2.279 (1.214-4.281) | 0.001 | 3.052 (1.522-6.120) |
| Age | < 0.001 | 1.039 (1.024-1.055) | 0.033 | 1.018 (1.001-1.035) |
| Female | 0.539 | 1.141 (0.748-1.739) | | |
| Hypertension | < 0.001 | 2.071 (1.364-3.144) | | |
| Diabetes mellitus | < 0.001 | 2.948 (1.897-4.580) | < 0.001 | 2.420 (1.492-3.925) |
| Old stroke | 0.003 | 1.895 (1.229-2.922) | 0.001 | 2.154 (1.361-3.409) |
| Chronic kidney disease | < 0.001 | 3.083 (1.629-5.836) | 0.039 | 2.012 (1.034-3.915) |
| Hemodialysis | < 0.001 | 8.677 (3.473-21.629) | < 0.001 | 13.491 (4.934-36.887) |
| Heart failure | 0.002 | 2.028 (1.279-3.216) | 0.047 | 1.645 (1.006-2.687) |
| Anemia | 0.321 | 0.778 (0.474-1.278) | | |
| Atrial fibrillation | 0.013 | 1.804 (1.131-2.880) | | |
| Chronic lung disease | 0.605 | 1.199 (0.602-2.388) | | |
| Chronic liver disease | 0.015 | 2.588 (1.196-5.599) | 0.034 | 2.477 (1.071-5.730) |
| Other organ infection | 0.949 | 1.975 (0.451-2.110) | | |
| Other organ infarction | 0.386 | 1.394 (0.303-1.588) | | |
| Malignancy | 0.844 | 1.086 (0.475-2.486) | | |
| Sepsis | 0.131 | 1.448 (0.895-2.343) | | |
| Coagulase-negative Staphylococci | 0.001 | 2.863 (1.483-5.528) | < 0.001 | 3.403 (1.706-6.789) |
| MSSA | 0.063 | 2.585 (0.947-7.056) | 0.050 | 3.588 (1.255-10.259) |
| MRSA | 0.007 | 3.113 (1.351-7.170) | 0.017 | 2.356 (0.998-5.564) |

- In this study, the postoperative and long-term outcomes of patients with infective endocarditis were better with mitral valve repair compared with mitral valve replacement.
- There were no difference in terms of reoperation, readmission, reinfection, and recurrence of mitral valve disease, but mitral valve repair was superior for the overall composite end point which including long-term survival.
- **Therefore, in the surgical treatment of mitral valve infective endocarditis, we believed that valve repair whenever possible, taking into account the condition of the infected native valve and its durability after repair, is beneficial to the patient's prognosis.**