Acute infective endocarditis: early surgery versus conventional treatment

In-hospital mortality is a vital outcome to measure, especially when comparing two life-saving treatments. A recent RCT comparing the in-hospital mortality of early surgery vs. conventional treatment in a group of South Korean patients, one patient in the early surgery group (3%) and one patient in the conventional treatment group (3%) died within 6 weeks of hospitalisation (p = 1.00). [4] These results are in conjunction with data from previous observational studies. Fumakoshi et al reported a similar in-hospital mortality (5%) in both groups) between early surgery and conventional treatment (p = 0.58). [5]

Acute embolic events
This is defined as any systemic embolism (e.g., cerebral, cardiac, renal or splenic) that occurred secondary to IE within 6 weeks of hospital admission. Early surgery resulted in a significantly lower rates of acute embolism compared to conventional treatment. A non-randomised trial found no embolic events (0%) compared to 14 (21%) in patients managed with early surgery and conventional treatment respectively (p < 0.001). [6] Similar rates were reported in a recent RCT, no patients (0%) in the early surgery group compared to 9 (23%) in the conventional treatment group experienced embolic events (p = 0.03). [4]

Antibiotic regimen and course duration
All patients with IE are routinely given prolonged antibiotic therapy. Not only does this result in side-effects for patients, it also increases the emerging risk of antibiotic resistance. Therefore, it is important to assess whether early surgery changes the use of antibiotics (duration and/or regimen) in patients with IE.

A recent RCT found no difference in the median duration of antibiotic use between early surgery and conventional treatment (35 days in both groups; p = 0.59). [4] Patients in the conventional treatment group were more likely than the early surgery group to be put on multiple antibiotics (33% vs. 17%; p = 0.07). However, this trend was not statistically significant (p = 0.62). [4]

All-cause mortality
In an RCT by Kang et al, all-cause mortality at 6 months was not statistically significant between patients managed by early surgery compared to conventional treatment (0.1% vs. 0.5%, p = 0.59). [4] Similar results were found in a number of observational studies. One retrospective study reported all-cause mortality at 7 years to be 16% in the early surgery group and 21% in the conventional treatment group (p = 0.61). [5]

Morbidity
Non-embolic post-IE complications include recurrence of IE and repeat hospitalisation. As well as worsening patient outcomes, complications and re-admissions pose a significant financial burden on the health care system.

In one study, patients’ records were retrospectively reviewed over a 10-year period. Patients who received surgery within the first 7 days of admission were just as likely to be re-admitted or to have recurrent IE as those who received conventional treatment. [5]