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Late prosthetic valve endocarditis – Same results as every year?

(Abstract ID: 329)

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Background:

Late prosthetic valve endocarditis (PVE) is an infrequent but serious complication after valve replacement. Surgical therapy is one of the cornerstones of therapy but clinical prognosis is often limited in this high risk patient group. Herein we report a large cohort of late PVE undergoing cardiac surgery.

Materials and methods:

Since 2005 a total of 153 patients underwent cardiac surgery for late prosthetic valve endocarditis. Mean patient's age was 65.9 +/- 12.3 years. Prior cardiac surgery dated back 6.5 +/- 6 years in mean, ranging from 1 to 32 years. Clinical data were retrospectively analyzed out of the hospital's database.

Results:

The patients presented with a broad spectrum of comorbidities, as represented by a mean EuroSCORE II of 25.5% +/- 15.7. Predominantly, the procedures were done urgent or emergency (85.4%) and consisted of isolated (67.5%) or combined (32.5%) valve surgery. An abscess formation was seen in 19.3%. Mean skin-to-skin time was 227 +/- 86 min with 56.3% of the patients needing vasopressors immediately postoperative. No intraoperative deaths were observed. Hospital mortality was 20.5%, during further follow-up 31.1%. Main postoperative morbidity consisted of re-exploration for bleeding (15.3%), respiratory failure needing reintubation (28.5%), renal failure needing CVVH (16.5%), delirium (22.5%) and prolonged ICU-stay (>24h; 76.5%). In 41.1% no pathogen was identified preoperatively. Main pathogens were staphylococci (25.2%), streptococci (14.6%) and enterococci (16.6%). Univariate factors for hospital mortality were age ($p=0.04$), prolonged procedure time ($p<0.01$), COLD ($p<0.01$), chronic kidney disease ($p<0.01$), prolonged ICU-stay ($p<0.01$), re-exploration for bleeding ($p<0.01$), reintubation ($p<0.01$), postoperative stroke ($p<0.01$), infection with staphylococci ($p<0.01$) and seronegative endocarditis ($p<0.01$).

Conclusion:

Late prosthetic valve endocarditis still is associated with high postoperative morbidity and mortality. Allthough surgical management is technically nearly almost feasible, the clinical course is particularly determined by preoperative risk factors and postoperative complications as well.

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Trifecta and Hancock II valves in aortic position: short-term clinical outcome and hemodynamic comparison – a single center experience

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Background:

Conventional surgical valve replacement remains as an established therapeutic treatment option for valvular diseases. With the Trifecta™; bioprosthesis (St. Jude Medical) excellent hemodynamic results have been reported. The short-term clinical outcome and early hemodynamics are compared in this study of the Trifecta™ vs. Hancock®II (Medtronic) valve in aortic position.

Materials and methods:

In this retrospective study, 310 consecutive cases were identified in which either Trifecta™ or Hancock®II bioprosthesis were used for aortic valve replacement between January 2011 and December 2010 in our institute. The preoperative data and the postoperative courses were analyzed with focus on echocardiography and hemodynamics.

Results:

The Hancock®II prosthesis (mean age 69 ± 11 years; 74.1% male) was implanted in 224 patients, the Trifecta prosthesis (mean 73 ± 9 years; 51% male) in 81 patients. In >90% the surgery was elective in both groups. The immediate postoperative courses were comparable in both of the groups. Echocardiography revealed postoperatively significant lower pressure gradients over the aortic valve (Table 1, $p<0.01$) with the Trifecta valve. Prosthesis related complications (endocarditis, valve thrombosis, aortic regurgitation or prosthesis malfunction) with the need of surgical correction occurred in both groups. Mortality was low (Hancock II 1.8% vs Trifecta 2.3%).

Table:

	HC II Pmax [mmHg]	Trifecta Pmax [mmHg]	p-Value
Pre	53.8 ± 34.0	56.5 ± 30.1	0.66
19 mm	-	19.1 ± 9.8	-
21 mm	26.0 ± 11.2	18.9 ± 9.4	0.02
23 mm	26.3 ± 11.2	18.1 ± 7.9	0.013
25 mm	26.2 ± 11.2	18.7 ± 8.0	0.054
27 mm	26.0 ± 11.2	18.3 ± 7.9	0.12
29 mm	26.2 ± 11.2	-	-

Table 1: Maximum pressure gradients over the aortic valve, before and after implantation, according to the implanted prosthesis valve size (Pmax: maximum pressure gradient, HC II: Hancock II valve), (mean ± SD)

Conclusion:

Compared with the Hancock® II prosthesis, the Trifecta™ prosthesis reveals an excellent early hemodynamic result with low pressure gradients in our single center experience. However, further studies with long term follow-up evaluations are needed.