Surgery for pediatric active infective endocarditis: 24-year single center experience

Dept. of Congenital Heart Surgery / Pediatric Heart Surgery(1) Deutsches Herzzentrum Berlin, Berlin, Germany;
Dept. of Cardiothoracic and Vascular Surgery(2) Deutsches Herzzentrum Berlin, Berlin, Germany;
Dept. of Congenital Heart Disease(3) Deutsches Herzzentrum Berlin, Berlin, Germany

Objectives:

Active infective endocarditis (AIE) occurs less commonly in children. We retrospectively analyzed the clinical and microbiological status and the results of surgical treatment over a period of 24 years.

Methods:

Between April 1988 and December 2012, 8706 pediatric patients (<18 years) were operated upon. Of these, 31 (0.3%) patients (n=21 men, median age 14 years, 7 mo - 17 years) underwent following surgery: aortic valve replacement (AVR) (n=5), homograft aortic root replacement (ARR) (n=6), Ross operation (n=3), mitral valve (MV) repair (n=7), MV replacement (n=2) and combined tricuspid valve (TV) surgery (n=8) in 20 (62%) cases of native and 13 (38%) of prosthetic AIE. Underlying congenital heart disease (CHD) was present in 62%. Follow-up (0–24 years) was completed in 91%.

Results:

Preoperatively cerebral emboli were seen in 6 (19%), renal insufficiency in 4 (12%), aortic root abscess formation in 6 (19%) and sepsis in 4 (12%) patients. There were no operative deaths; 30-day mortality was 12.5% with 2 patients suffering from myocardial failure, 1 from septic multiorgan failure (MOF) and 1 from hemorrhagic shock after ECMO implantation. One-year survival was 87.5%. Actuarial freedom from reoperation and actuarial survival after MV repair at 1 and 10 years were 100%. Early endocarditic re-infection occurred in 1 patient after ARR. In the long term 1 patient underwent reoperation due to homograft degeneration. Staphylococci species (31%) were the most frequent microorganism.

Conclusions:

AIE occurs among young children with complex CHD more frequently. Repair of atrioventricular endocarditis yields excellent results in children and should be considered as the primary surgical option in these patients. Homograft ARR and Ross operation are associated with low operative mortality and provide satisfactory early and long-term survival and favorable freedom from recurrent endocarditis and repeat operation.