



### **Cardiac valve surgery outcomes in the antiphospholipid syndrome**

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**Background:** Cardiac involvement in the antiphospholipid syndrome (APS) is prevalent, and can progress to severe disease, necessitating valve surgery in about 5% of the patients[1,2]. Data regarding valve surgery outcomes in APS relies mostly on case series and case reports. In a previous Israeli case series of 10 patients early mortality was 20%, and total mortality was 40% [3], while in a multicenter cohort of 32 patients the mortality rate was 12.5% [1].

**Aim:** To describe the outcome and prognosis of cardiac valve surgery in patients with primary and secondary APS, and to determine factors associated with poor outcome.

**Methods:** All patients with APS, either primary, or secondary to SLE, who underwent valve surgery in the Sheba (Tel-Hashomer) or Tel Aviv Sourasky medical centers in Israel in the last 3 decades were included in this retrospective analysis. Clinical characteristics, indications for surgery, treatment before and after surgery, valve replaced and type of valve used, as well as early and late complications were collected and analyzed.

**Results:** We identified 20 patients who underwent cardiac valve surgery since 1997. Of them, 6 (30%) were male, the median age (interquartile range (IQR) at surgery was 47.5 (36.5-56) years. Nine patients (45%) had APS secondary to SLE. The median time (IQR) since APS diagnosis and valve surgery was 20 years (0.875-30). Triple positivity aPL was noted in 13 of 18 patients (72.2%), sixteen (88.9%) had positive lupus anticoagulant (LAC), and 16 had moderate-high titers of anti-cardiolipin IgG antibodies.

Valvular pathologies before surgery included: moderate-severe mitral regurgitation (MR) in 9 (45%), moderate-severe mitral stenosis (MS) in 3 (15%), moderate-severe aortic regurgitation (AR) in 6 (30%), moderate tricuspid regurgitation (TR) in 3 (15%), severe tricuspid stenosis in 1 (5%), Findings compatible with Libman-Sacks endocarditis (LSE) were noted in 11 (55%) of the patients. Pulmonary hypertension was evident in 13 out of 19 patients before surgery, and mean New-York Heart Association score was 2.1.

In 13 out of 20 (65%) patients the valve replaced was mechanical, one patient underwent repair of the tricuspid valve, and one patient required coronary bypass surgery at the same time.

Eight patients (40%) (7 in the mechanical valve group – 53.8%) had an early (30 days post-surgery) complication, including 5 severe complications - two deaths, one valve thrombosis, one stroke and one major bleeding. Five patients (25%) (3 in the mechanical valve group – 23.1%) had a late complication, including one death (4 years after MVR), one newly developed LSE, one major bleeding, one stroke and one E. coli bacteremia. All mortality cases occurred in patients with mechanical valves.

**Conclusions:** In this cohort of APS patients from two tertiary centers in Israel most patients underwent mechanical valve replacement. The mortality rate was 15%, and the total complication rate was 60%, similar to previous reports.

Valve surgery in APS patients continues to carry a guarded prognosis. There is a need for larger studies and registries to define risk factors for severe valvular involvement and the best surgical approach and medical treatment post-surgery.

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