**Title:** Sorin Mitroflow bioprosthetic aortic valve replacement: a single centre experience over 10 years.

**Background:**

Early structural valve deterioration (SVD) has been described for the Sorin Mitroflow bioprosthetic aortic valve replacement (AVR). We assessed incidence of SVD and mortality for patients with the Sorin Mitroflow bioprosthesis at a single tertiary centre.

**Methods:**

All patients who had a Sorin Mitroflow bioprosthetic AVR implanted at a single centre between May 2010 and September 2014 were included. SVD and bioprosthetic valve failure (BVF) were assessed by echocardiography in combination with clinical assessment. Follow up concluded at reintervention, death or August 2024.

**Results:**

One hundred and eight patients were included in the study. The median follow up was 9.1 years (IQR 5.6 – 11.4). Estimated survival was 79% (95% CI: 71-87%) at 5 years and 43% (95% CI: 34-53%) at 10 years. Cumulative incidence of any SVD at 5 years was 14% (95% CI: 6% – 20%) and at 10 years 51% (95% CI: 38% - 62%). Twenty-eight (26%) patients developed BVF. Nineteen (17.6%) patients underwent reintervention. Early SVD was defined as meeting any criteria for SVD and/or BVF ≤5 years after implantation. There were 14 (13%) patients with early SVD and seven (6%) with early BVF.

**Conclusions:**

We found high rates of SVD. This is similar to studies of the Sorin mitroflow bioprosthesis who assessed SVD by echocardiography, and more than those who used surrogate outcomes. Survival post implantation of Sorin Mitroflow bioprosthetic valve was similar to the literature on bioprosthetic aortic valve outcomes.