Introduction: Prevalence of Aortic Valve disease covers 6% of all congenital heart disease (3.8 of 10,000 births), and Aortic Stenosis is more prevalent (71-86%). There are several surgical methods for this condition, like Aortic valve repair and Aortic valve replacement. This systematic review aims to compare incidence of re-operation, mortality, and survival rate between ROSS procedure and Non-ROSS Procedures.

Results: There were 13 literatures from PubMed, 120 from Google Scholar, and 42 from Science Direct. After filtered using inclusion and exclusion criteria, 5 literatures were decided to be analyzed. Alsoufi et.al (2009): Re-operation on ROSS vs Mechanical (13% vs 6%). Mortality of ROSS vs Mechanical (2.3% vs 6.1%). Sharabiani et al (2016): Re-operation on ROSS vs Mechanical AVR vs Bioprosthetic AVR vs Homograft AVR (5.2% vs 8.2% vs 25% vs 41.5%). Survival rate of ROSS vs Mechanical AVR vs Bioprosthetic AVR vs Homograft AVR (97.3% vs 90.6% vs 92.6% vs 93.4%). Brown et.al (2016): Re-operation on ROSS vs Non-ROSS (28% vs 29%). Mortality of ROSS vs Non-ROSS (4% vs 17%). Survival rate of ROSS vs Non-ROSS (94% vs 81%). Wilder et.al (2015): Re-operation on ROSS vs AoV Repair vs Mechanical AVR (14.28% vs 28.6% vs 26%). Khan et al (2013): Re-operation on ROSS vs AoV repair vs Homograft AVR vs Mechanical AVR vs Bioprosthetic AVR (4% vs 17% vs 36% vs 3% vs 0%). Mortality of ROSS vs AoV repair vs Homograft AVR vs Mechanical AVR vs Bioprosthetic AVR (2.9% vs 3.1% vs 7.7% vs 3% vs 0%)

Conclusion: Systematical analysis from all 5 literatures showed differences in re-operation incidence, mortality, and survival rate, with superiority in in ROSS procedure outweigh the Non-ROSS procedures.