

Clinical outcomes associated with coronary sinus reducer implantation in patients with refractory angina – An updated systematic review

Background: Coronary sinus (CS) reducer is an emerging novel therapeutic approach for patients with coronary artery disease suffering from severe refractory angina, unamenable to revascularization.

Methods: We conducted a systematic search on Pubmed, Medline, Cochrane Library, Web of Science for articles from January 2000 - May 2019, with data regarding safety and efficacy of the CS reducer in patients with refractory angina. The following search terms were used: “Coronary sinus reducer implantation” “CS reducing device.” The primary outcome of interest in this study is improvement in Canadian cardiovascular society (CCS) score post device implantation, which defines the efficacy of the CS reducer.

Results: 4 studies met the inclusion criteria (Seven prospective observational studies, one retrospective observational study & One randomized controlled study) with a total of 370 patients. Device implantation was successful in 361/370 (97.5%) patients, and 344/361 patients were available at follow up. CS reducer was effective in 272/344 (79%) patients, measured by overall CCS class improvement. Mean CCS class improved from 3.12 at baseline to 1.8 after a median follow up of 30 months. Improvement in Seattle Angina Questionnaire score, Exercise duration, 6-min-walk test also demonstrated benefits of CS reducer. Device implantation failed in 9/370 (2.4%) patients due to unsuitable CS anatomy. Early (30-day) and Late (90-day) periprocedural complications occurred in 9/370 (2.4%) patients.

Conclusion: Data on CS reducer showed impressive device success with reduction in anginal symptoms, improved quality of life, low rates of 30- and 90-day complications, and mortality. Nonetheless, bigger RCTs are necessary to explicate its effectiveness.

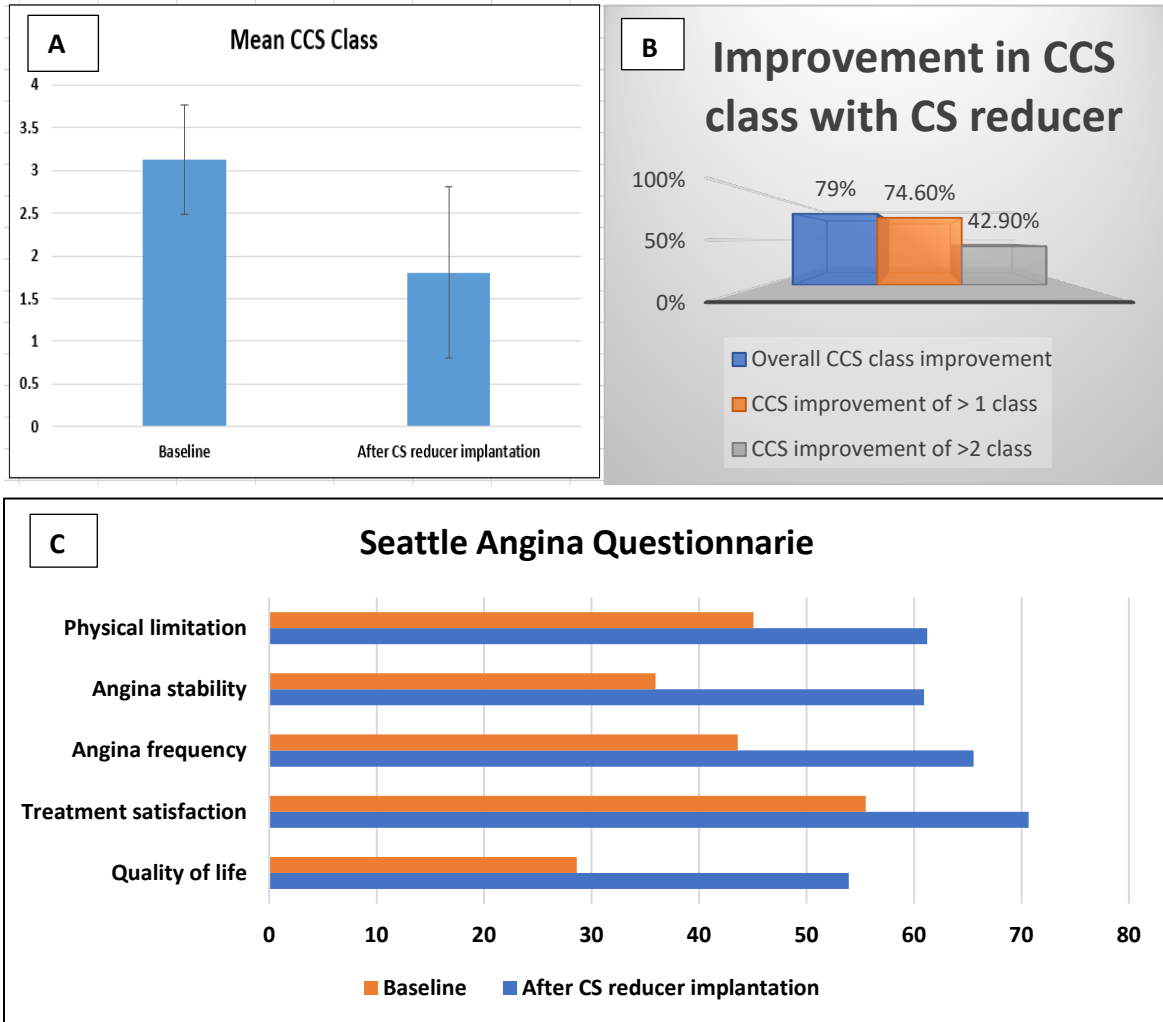


Figure 1. Impact of CS reducer in patients with refractory angina.

Panels A-C. A significant benefit in anginal symptoms was observed after Reducer implantation, as highlighted by **A)** a significantly lower mean CCS class and **B)** a higher proportion of patients in a lower CCS class. **C)** Reduction in physical limitation, decreased angina symptoms, improved exercise tolerance, and quality of life as shown by higher SAQ scores after CS reducer implantation.