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EDITORIAL COMMENT

Percutaneous treatment for refractory angina with the coronary sinus Reducer: A multicenter initial experience

Tratamento percutâneo da angina refractária com redução do seio coronário: experiência multicêntrica inicial

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Coronary artery disease (CAD) is the major cause of death and disabling symptoms, including angina pectoris, in patients with ischemic artery disease in Western countries.

The remarkable advances in medical and invasive therapies, including coronary bypass grafting (CABG), percutaneous coronary intervention (PCI) and device therapies, have greatly increased the life expectancy of patients with CAD. This has led to an increasing number of patients with advanced no-option CAD, who often have severe diffuse CAD and are not candidates for further revascularization by CABG or PCI, and who continue to suffer from disabling angina despite optimal medical therapy (OMT).[1–4]

Patients with chronic angina have poor quality of life (QoL) and increased levels of anxiety and depression. Furthermore, the clinical outcome for these patients is strongly affected by the lack of adequate treatment, the occurrence of adverse events and the need for repeated hospitalization. It is estimated that 5–10% of patients with angina have refractory angina (RA). The estimated one- and three-year mortality rates for these patients are 1–5% and up to 24%, respectively.[5,6]

A considerable number of innovative therapeutic modalities for the treatment of chronic angina have been investigated over the years; however, none of these therapeutic options has become a standard of care, and none of them is widely used. Current treatment options for RA focus on medical therapy and modification of secondary risk factors.[7,8]

The coronary sinus Reducer (CSR) is a novel device designed for the management of patients with severe angina symptoms refractory to OMT and not amenable to further revascularization.[5] The device is designed to be implanted via a small puncture on the side of the neck, into the largest cardiac vein (i.e., the coronary sinus), to slow the outflow of blood from the cardiac venous system.[9–11] Treatment is associated with significant improvement of symptoms in 70–85% of patients, while granting little or no benefit in the remaining 15–30% for reasons that are yet to be determined.[1,6] Importantly, the procedure has been shown to be safe and to have a very low rate of complications.[7] Patients should keep this in mind when evaluating this therapeutic option.

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In this issue of the *Journal*, Reis et al. present a multicenter initial experience of this device used for the treatment of disabling angina pectoris in patients with no option for additional revascularization techniques and under OMT.

The CSR was used in 26 patients with RA and with myocardial ischemia attributable to the left coronary artery unsuitable for revascularization, between May 2017 and July 2019.

The safety endpoints were procedural success and complications. Efficacy endpoints, assessed at six-month follow-up, were a reduction in Canadian Cardiovascular Society (CCS) class, improvement in QoL assessed using the short version of the Seattle Angina Questionnaire (SAQ-7), and reduction in anti-anginal therapy.

Twenty-three patients had advanced CAD and were not candidates for revascularization due to poor revascularization targets, and three patients had microvascular disease without epicardial stenosis.

Procedural success was achieved in 23 patients, with two device or procedural-related complications and one anatomically-related failure to deliver the device. At the end 25 patients had the device implanted and entered the efficacy analysis. Eighteen patients (75.0%) had a reduction of at least one CCS class, 41.7% reduction of at least two classes, and 16.7% became asymptomatic, with a mean reduction in CCS class of 1.3 ± 0.2 (p=0.001) at six-month follow-up. All SAQ-7 domains improved, notably physical limitation (p=0.001), angina frequency (p=0.005) and QoL (p=0.006). There was a mean reduction in anti-ischemic drugs from 3.4 ± 1.1 to 2.9 ± 1.2 (p=0.010).

In conclusion, in this study of a multicenter initial experience, the implantation of the CSR in patients with RA proved to be safe and effective in reducing angina, improving QoL scores and decreasing the mean number of anti-ischemic drugs prescribed.

The use of the CSR for the treatment of patients with end-stage CAD with no revascularization options under OMT may be a good option for symptom control and better QoL in these complex patients.

Conflicts of interest

The author has no conflicts of interest to declare.

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