

Spinal Cord Stimulation (SCS) for Refractory Angina: An Update

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Background:

Refractory angina is a condition where the patient suffers from symptomatic objective ischaemia with Canadian Cardiovascular Society CCS functional class III or IV. Symptoms often continue despite maximum medical and interventional therapy to attempt revascularization or patients do not tolerate the standard treatments¹. Spinal Cord Stimulation is one of the possible treatments for this disease and is used with relative safety.

Randomized controlled trials have shown efficacy for quality of life, exercise tolerance and reduced nitrate consumption². Prospective observational studies have shown long term reduction in hospital admission³. Cost reduction in terms of health utilization has been demonstrated in a retrospective study (4).

Postulated mechanisms of actions are reduction in pain, sympathetic tone, myocardial oxygen consumption and increased microcirculation (5).

There are many challenges in the use of SCS for refractory angina in the areas of suitability, funding, surgical technique, programming and patient acceptance. In this presentation some of these challenges and the recent developments in the field of neuromodulation for angina are discussed

References:

1. Michael C. Kim, Annapoorna Kini, and Samin K. Sharma (2002) Refractory angina pectoris: Mechanism and therapeutic options. *J. Am. Coll. Cardiol.* 2002;39:923-934
2. Anthony W.Lee and Julie.g.Pilitsis (2006) Spinal Cord Stimulation:Indications and Outcome. *Neurosurg focus.* 21(6):E3.1-6
3. Jessica de Vries et al (2007) Long-term effects of Electrical Neurostimulation in Patients with Unstable Angina: refractory to Conventional therapies. *Neuromodulation.* Volume 10. Number 4. 345-348
4. Malene B. Rasmussen and Peter Hole (2004) Electric Spinal Cord Stimulation in the treatment of Angina Pectoris: A cost-Utility Analysis. *Neuromodulation,* volume 7, Number 2.89-96
5. Claus Andersen, Thomas P.Engaard, Christian Scherer (2006) *Neuromodulation,* Volume 9, Number 4. 314-319