Angina pectoris

Angina pectoris is the medical term for chest pain or discomfort due to coronary heart disease. It occurs when the heart muscle doesn't get as much blood as it needs. This usually happens because one or more of the heart's arteries are narrowed or blocked, called ischemia.

Refractory angina pectoris (RAP) is a clinical syndrome characterized by persistent chest pain caused by myocardial ischemia that is unresponsive to optimal pharmacological therapy and revascularization procedures.

Spinal cord stimulation (SCS) has emerged as a promising therapeutic option for managing RAP, offering significant symptom relief and improved quality of life.

Narrative reviews

A systematic literature review was conducted to evaluate the clinical effectiveness, mechanisms of action, and safety profile of SCS in treating RAP. Comprehensive searches were performed in PubMed, Scopus, and Web of Science for studies published between 1990 and 2023. Of 328 articles identified, 6 met the inclusion and exclusion criteria for final analysis. The included studies consistently demonstrated that SCS significantly reduces the frequency of anginal episodes and nitroglycerin use while improving exercise capacity and quality of life. Proposed mechanisms include modulation of pain signals via the gate control theory, enhancement of autonomic balance, and redistribution of myocardial perfusion. Novel stimulation modalities, including high-frequency, Burst, and Differential Target Multiplexed (DTM), show potential advantages in enhancing patient comfort and clinical outcomes. Nevertheless, long-term studies are necessary to validate these findings and establish the comparative efficacy of these advanced technologies. SCS is a safe and effective therapy for patients with RAP who are unsuitable for surgical interventions. Innovations in neurostimulation, including closed-loop systems and personalized treatment strategies have the potential to optimize outcomes further. Rigorous clinical trials are needed to consolidate the role of SCS as a cornerstone therapy for the management of RAP [1].

The review by Gazzeri et al. is an important contribution to understanding spinal cord stimulation for refractory angina pectoris, particularly in terms of summarizing clinical efficacy and future directions. However, limitations in methodology, sample size, and comparative analysis diminish its impact. Addressing these gaps through a more systematic approach and detailed exploration of long-term outcomes and emerging technologies would enhance the study's utility for clinicians and researchers.

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Gazzeri R, Mosca J, Occhigrossi F, Mercieri M, Galarza M, Leoni MLG. Spinal Cord Stimulation for Refractory Angina Pectoris: Current Status and Future Perspectives, a Narrative Review. J Cardiovasc Dev Dis. 2025 Jan 20;12(1):33. doi: 10.3390/jcdd12010033. PMID: 39852311.