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## ID 57122 – METANÁLISE SOBRE NEUROMODULAÇÃO VAGAL NO TRATAMENTO DA INSUFICIÊNCIA CARDÍACA

**Introduction:** Heart failure (HF) is a clinical syndrome characterized by autonomic nervous system (ANS) imbalance and electrical events that can lead to sudden death. While sympathetic activation is well studied, the effects of parasympathetic (vagal) stimulation is not well established. The aim of this systematic review and meta-analysis was to evaluate the evidence for use of invasive vagal nerve stimulation (VNS) in patients with chronic HF and reduced ejection fraction (HFrEF). **Methods:** From May 1994 to July 2020, PubMed, Embase and the Cochrane Library of Trials were searched for clinical trials comparing VNS with medical therapy (control) for management of chronic HFrEF (EF  $\leq$  40%).

**Results:** The systematic review identified 4 randomized control trials (RCT) and three one-arm studies, totalizing 1263 patients with a median follow-up of 6 months. Of these, 756 were treated with VNS and 507 with medical therapy. Only the RCTs were included in the meta-analysis, and groups were compared by using fixed-effect distribution tests. Freedom from serious adverse effects related to the procedure was observed in 89.3% of patients with VNS and there was no difference in mortality between groups (OR 1.24, 95% CI 0.82-1.89,  $p = 0.43$ ). VNS was associated with significant improvement in the New York Heart Association (NYHA) functional class (OR 2.72, 95% CI 2.07-3.57,  $p < 0.0001$ ), quality of life (MD -14.18, 95% CI -18.09 to -10.28,  $p < 0.0001$ ), 6-min walk test (MD 55.46, 95% CI 39.11- 71.81,  $p < 0.0001$ ) and NT-proBNP levels (MD -144.25, 95% CI -238.31 to -50.18,  $p = 0.003$ ).

**Conclusion:** This meta-analysis showed that VNS improves the NYHA functional class, QoL, 6mWT and NT-proBNP levels in patients with chronic HFrEF, with no impact on mortality.

