The Efficacy of Cardiac Shock Wave Therapy in the Treatment of Refractory Angina: 
A Pilot Prospective, Randomized, Double-Blind Trial

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Background:
Medical therapy for refractory angina (RA) is limited and prognosis is poor. Experimental data suggest that the use of low-energy extracorporeal shock wave myocardial revascularization (ESMR) can contribute to angiogenesis and improve symptoms of angina. This prospective, double-blind study was performed to evaluate the efficacy of ESMR therapy in patients with RA.

Methods:
Patients with RA for at least 3 months not amenable for revascularization with ischemia on thallium testing were eligible. All candidates underwent exercise treadmill testing and filled out a Seattle Angina Questionaire (SAQ) prior to therapy. Patients were randomly assigned to active or sham treatment in a 2:1 ratio. Exercise testing was repeated at one and three months and SAQ at three months after completing treatment.

Results:
28 patients completed the study (mean age 65.6 ± 15.8 yrs.; 24 male). Exercise time increased at one and three months in the cohort with no significant differences between the treatment and placebo groups. Improvement in the physical limitation component of the SAQ was significantly greater in the treatment group (24.8% vs 1.8%; p = 0.04) with a trend towards improvement in the overall SAQ (18.8% vs 1.9%; p = 0.07). No significant side effects during the treatment were observed.

Conclusion:
ESMR is safe and may be efficacious in treating clinical symptoms related to RA. This pilot study warrants further, larger studies of ESMR.