

# **Study of the Efficacy of Low level laser in Myocardial Perfusion of Patients with Chronic Stable Angina**

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## **Abstract**

**Background:** In the vast majority of patients with angina pectoris caused by underlying coronary artery disease, effective treatment is available. Most patients respond to antianginal medication, and for the remainder either percutaneous coronary Revascularization or coronary artery bypass grafting can be performed. (1)

Low-energy laser radiation through its direct influence on tissue repair processes without heating effect may have vital importance in the therapy of patients with advanced coronary artery disease (CAD).(2)

The purpose of the study was to assess the safety and efficacy of low energy laser therapeutic procedures in patients with advanced multi-vessel CAD not suitable for myocardial revascularization. Many clinical parameters as well as results of laboratory tests were evaluated to find any indices of potential impact of the laser therapy in the examined population.

**Method:** 22 patients with advanced CAD were assigned (mean age 61, male gender 68.1%, 100% with history of myocardial infarction), to undergo two sessions of irradiation of low energy laser. Each session was 10 time and each time of radiation was 20 min. Pre laser evaluation was included, blood pressure, heart rate, basic biochemical test , ECG, 6 minute walk test, TTE, gated MPI. Before the first and the second period of laser therapy with 3 months break pre and post laser parameters, were measured.

**Results:** No side effects associated with the laser biostimulation or performed clinical tests were noted. Improvement in SBP, Higher functional class, longer distance of 6-min walk test in both group were noted. There was significant change in myocardial perfusion of most anterior segments of heart by single photon emission computed tomography (SPECT) (visually and by computer soft ware)( $P < 0.05$ ). There was no significant change in DBP, HR, and in LVEF by TTE and gated MPI.

**Conclusion:** An improvement of functional capacity and myocardial perfusion and less frequent angina symptoms during 6-min walk test, without significant change in left ventricular function by TTE and gate MPI, were observed. Low level laser in short term was a very safe method. These encouraging results should be confirmed in a larger, placebo-controlled study.

**Key word:** low level laser, chronic stable angina, myocardial perfusion imaging.

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