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**A CLINICAL STUDY OF THE EXTRACORPOREAL  
CARDIAC SHOCK WAVE THERAPY FOR CORONARY  
ARTERY DISEASE**

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**Objectives** To evaluate the security and efficiency of extracorporeal cardiac shock wave therapy (CSWT) for treatment of coronary artery disease.

**Methods** A total of 45 patients with coronary artery disease (CAD) were included in this study (Male 36, Female 9, mean age 67 years

old). patients were randomly divide into Shock wave therapy group (25 patients were treated with the shock wave energy, 200 shots/spot at 0.09 mJ/mm<sup>2</sup> for 9 spots, amount to 9 times within 3 month) and control group (20 patients were not treated with shock wave energy). The testing time points of patients in shock wave therapy group were before shock wave therapy (0 month), the end of nine times of shock wave therapy (3 month), and the corresponding testing time points of patients in control group were the time of enrolment, 3 months follow-up. Patients in both groups were subjected to cardiac double-nuclide single photon emission CT (SPECT) examinations using <sup>99</sup>Tc<sup>m</sup>-methoxyisobutylisonitrile (<sup>99</sup>Tc<sup>m</sup>- MIBI), <sup>18</sup>F-fluro-deoxyglucose (<sup>18</sup>F-FDG) and microvolt T wave alternans (MTWA) examination, and their Canadian Cardiovascular Society (CCS) angina grading, New York Heart Assosiation (NYHA) cardiac function grading, Seattle Angina Questionnaire (SAQ) scoring, nitroglycerin dosage, 6 min walk test (6MWT), Left ventricular ejection fraction (LVEF) were evaluated at the time ponits above. During of clinical follow-up was not less than 3 months, changes of mortality, myocardial re-infarction rate, readmission rate, myocardial perfusion, myocardial metabolism and cardiac function of pations in the two groups were compared.

**Results** All 45 patients completed follow-up. After treatment of CSWT, the total score of myocardial perfusion imaging and myocardial metabolism imaging, NYHA cardiac function grading, CCS angina grading, nitroglycerin dosage, SAQ scoring, 6MWT, LVEF and MTWA of patients in shock wave therapy group at the time points of 3 months were all significantly improved when compared to those at the time point of 0 month (28.16±4.63 score vs 33.72±5.84 score, 22.88±3.17 score vs 28.28±4.89 score, 1.48±0.65 vs 2.16±0.69, 1.46±0.58 vs 2.72±0.46, 1.00±0.73 times/week vs 2.35±0.86 times/week, 76.40±8.65 score vs 65.96±11.78 score, 427.92±63.32 m vs 339.44±83.37 m, 56.16±6.38% vs 51.88±7.18%, 37.88±9.54 μV vs 44.80±12.24 μV, p all <0.05) and those in control group at the same time points (p all <0.05). But in control group, all the above parameters have no significant change compare with 0 month (p all>0.05). During follow-up, no death and myocardial re-infarction was found in shock wave therapy group after treatment. 1 patient died in control group because of SCD and 1 patient suffered from AMI. Eleven person-time suffered from readmission, 3 person-time of the shock wave therapy group, 11 person-time of the control group (p<0.05).

**Conclusions** Extracorporeal cardiac shock wave therapy is a safe, non-invasive and effective therapeutic option for CAD.