

In Vitro Effect of Extracorporeal Shock Wave Therapy on Atherosclerotic Arteries

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Device and producing company:

Cardiospec™, Medispec

Introduction:

Extracorporeal Shock Wave (ESW) treatments have been successfully used to treat various pathologies for over 20 years, mostly in urinary lithotripsy and in Orthopedics. Because they induce neovascularization, SWs are used for non-healing wounds and ischemic myocardial tissue with excellent results. The purpose of this study was to evaluate whether any deleterious effect could be caused to coronary atherosclerotic plaque should shock waves strike it during ESW cardiac treatment with Medispec's Cardiospec™.

Methods:

Under Ethical Committee approval and patients' informed consent, fourteen pairs of atherosclerotic arterial segments, originating from fresh below knee stumps were used and divided randomly to treatment or control groups. All segments were ≤ 5 mm in diameter (for coronary artery simulation). The "Treatment" segments were placed in 0.9% NaCl water bath with one side wall open. The arterial segment was affixed at the focus of the shockwave of the Cardiospec™ device, which was dipped in the bath. Each "Treatment" segment was treated at energy levels and number of SW's that are several times higher than normal Cardiospec™ treatment parameters. All samples were histopathologically analyzed.

Results:

There was no difference in the histological features seen in the treated group as compared to the control group in any segment.

Conclusion:

ESW treatment with Medispec's Cardiospec™ is safe even in the case of deliberate focusing of SW's on coronary artery plaques at energy levels as well as number of SW's which are several times higher than normal treatment parameters.