

the same time, observe the effect of different energy protocol of extracorporeal cardiac shock wave therapy on angiogenesis and expression of VEGF in acute myocardial infarction pigs, and explore optimal CSWT regimen.

**Methods** Thirty domestic miniature swine were randomly divided into four groups: CSWT group ( $n=15$ ), pseudo-CSWT group ( $n=5$ ), pseudo-operation group ( $n=5$ ) and blank control group ( $n=5$ ). According to the given protocol, CSWT group was then divided into three subgroups: standard CSWT, prolonged duration CSWT and extensive area CSWT. At 30 days, VEGF mRNA and protein expressions were measured and evaluated in different groups, respectively.

**Results** Compared with pseudo-CSWT group, the expression of VEGF mRNA was significantly increased in CSWT group with statistic difference ( $2.90 \pm 0.40$  vs  $2.12 \pm 0.50$ ,  $p < 0.01$ ), especially in the prolonged duration CSWT. Whereas, no significant differences were seen between standard and extensive area CSWT. Nevertheless, compared with pseudo-CSWT group, the expression of VEGF mRNA was increased significantly in all CSWT subgroups. In contracts, no significant differences were seen among all groups in expression of Flt mRNA.

**Conclusions** It is evident that extracorporeal cardiac shock wave therapy could effectively induce angiogenesis probably by up-regulating the expression of angiogenic factor. Furthermore, effects of CSWT on angiogenesis may be varied in different CSWT protocols. Prolonged duration CSWT at early stage of acute myocardial infarction can improve angiogenic of myocardium microenvironment and facilitate myocardial micro-vascular circulation, which should be more effective CSWT protocol for the AMI management.

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## EFFECTS OF EXTRACORPOREAL CARDIAC SHOCK WAVE THERAPY ON ANGIOGENESIS AND EXPRESSION OF VEGF IN ACUTE MYOCARDIAL INFARCTION PIGS

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**Objective** Therapeutic angiogenesis is a process that seeks to stimulate collaterogenesis and to improve myocardial perfusion and function by delivery of proangiogenic factors to the ischemic myocardium. This experimental study aims to investigate the effect of inducing endogenous proangiogenic factors by extracorporeal cardiac shock wave therapy and, at