## THE EFFECT OF OZONATED PERFUSED SOLUTION ON THE METABOLISM OF ISCHEMIC MYOCARDIUM

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The experiments were done on isolated hearts of rats with the use of retrograde perfusing Krebs-Khenzeleit solution. Myocardium tissues showed marked disorders of metabolism, myocardium having been isolated in the state of clinical death. Metabolic changes were much better controlled with perfusion of ozonated Krebs-Khenzeleit solution with gaseous ozone concentration of 0,11 mg/l then with oxygenated solution. Lipid peroxidation data were registered to return to normal in myocardium tissues with total antioxidant system and SOD being activated. The spectrum of fatty acids revealed decrease of phospholipid lysoforms and sphingomyelin, of triglyceride levels with accumulation of esterified Cholesterin. There was noted the normalisation of lactate -pyruvate levels with reduction of K, Na-ase, Ca-ase and H-ATP-ase activities. It was accompanied with a more rapid recovery of myocardium contractile capacity, Pp having the maximum power of contraction.

## THE EFFECT OF BASIC FIBROBLAST GROWTH FACTOR ON MYOCARDIAL NECROSIS INDUCED BY ISOPROTERENOL

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The effect of basic fibroblast growth factor (bFGF) on myocardial necrosis induced by isoproterenol (ISO) in rats was studied. Control group was not monitored specially, while ISO and bFGF groups were injected subcutaneously ISO 20,10, and 5mg/kg in day 1 to day 3, respectively, and 2.5mg/kg in day 4 to day 10. Hearts were harvested for pathologicl observation and determination of collagen, ATP, MDA levels in myocardium and $Ca^{2+}$ contents in mitochondria of myocardial cells. Plasma was collected for measurement of LDH and MDA. Results showed that bFGF apparently decreased ISO-induced myocardial necrosis, plasma LDHd MDA and myocardial MDA by 24.8%,32.8% and 20.0%, respectively ($p<0.01$). The collagen and mitochondrion calcium concentration in myocardium reduced by 16.9% and 20.6%, respectively ($p<0.01$); myocardial ATP content increased by 36.7% ($p<0.01$). In conclusion, bFGF may exert an protective effect against myocardial injury induced by ISO, the mechanism of which is probably related to preventing lipid peroxidation and calcium overload in myocardial cells.

## THE EFFECT OF bFGF ON HYPERTENSION INDUCED BY $N^G$-NITRO-L-ARGININE IN RATS

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The effect of bFGF on the formation of hypertension induced by $N^G$-Nitro-L-arginine (L- NNA) in rats and its mechanism was studied. Control group was injected saline, while hypertension group and bFGF group were infused L-NNA for 20 days intraperitoneally and beging from the 8th day, blank liposome or bFGF-liposome were injected. 24hr after the last injections, changes of blood pressure and NO system in each group were investigated. Results showed that bFGF decreased MABP by 3.7kPa in hypertension rats ($p<0.05$).The maximal dilatation response of aortic rings to Ach from bFGF-treated hypertension rats was 64.2% higher than that from untreated rats ($p<0.01$); Infusion of bFGF increased plasma $NO_2^-$ and $NO_2^-$ content in aortic ring in hypertension rats significantly, recovered the sensitivity of vessel slices to Ach , augmented tNOScoiNOS and cNOS content in aortic wall of hypertension rats by 25.5%c 15.6% and 45.7% respectively ($p<0.05$). In conclusion, bFGF may play an important role in preventing the formation of hypertension induced by L-NNA, mechanism of which is probably related to stimulation of NOS activity and NO production.

## THE EFFECT OF BASIC FIBROBLAST GROWTH FACTOR ON ACUTE MYOCARDIAL INFARCTION IN RABBITS

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The effect of basic fibroblast growth factor (bFGF) on acute myocardial infarction (AMI) in rabbits was investigated . The areas of infarct myocardium ,cardiac function and ATP contents in myocardium were measured. Results showed that Intravenous infusion of bFGF (1.4μg/kg and 7.0μg/kg) decreased the infarct size (8.1%±2.7% and 8.2%±2.1% vs control 16.5%±3.2%, $p<0.05$ ) and increased the ATP content in infarcted myocardiumb (2.9± 0.4 and 3.2±0.3μmol/g.ww vs control 2.3±0.3μmol/g.ww, $p<0.01$). The cardiac output of bFGF-I and -II group was higher than that of control by 18.9% and 28.1%, respectively, while LVEDP lower by 25.5% and 29.3%,+LV dp/dt max were higher by 19.6% and 31.0%,-LV dp/dt max lower by 35.7% and 50.1%, respectively($p<0.05$). All the effect of 7.0μg/kg bFGF were better than those caused by nitroglycerin ($p<0.05$). In conclusion, bFGF may play a role both in decreasing area of infarcted myocardium and in improving cardiac function in AMI rabbits.