provide a meaningful technique platform for cardiovascular regeneration research in future.

GW25-00248

Electrical and histological remodeling in a rabbit model of atrial fibrillation induced by atrial ischemia and rapid atrial pacing

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Objectives: We established a rabbit model of AF induced by atrial ischemia combined with rapid atrial pacing (RAP) to evaluate the relative contributions of electrical and histological remodeling to atrial fibrility.

Methods: Twenty-four rabbits were randomly divided into an atrial ischemia combined with RAP group (Group I, n = 8), RAP group (Group P, n = 8) and an equal control group (Group C, n = 8). An electrode sutured onto the left atrial appendage provided stimulation and recordings. Group I underwent RAP (1,000 beats/minute) following successful ligation of the atrial branch of the right coronary artery. Group C do the pseudoperfusion without pacing. Group P underwent RAP (1,000 beats/minute). Electrical and histological parameters were tested at three intervals: 1 hour, 1 week, and 3 weeks.

Results: The rabbits in group I showed a higher rate of AF induction, shortening of the atrial effective refractory period (AERP), loss of the normal rate adaptation and intra-atrial conduction delay (IACD), and prolongation of the P-wave interval. With prolonged ischemia and RAP, the IACD and persistence of AF increased. Shortening of the AERP and loss of the normal rate adaptation appeared at 1 hour and reached its maximum after 1 week. After 3 weeks, pathological examination of Group I animals showed myocardial ischemia, edema, focal necrosis, and fibrosis, more evident in the right atrium. Group C showed no pathological changes.

Conclusions: Atrial ischemia combined with RAP resulted in evident electrical and histological remodeling of the atrium, which effectively promoted the inducibility and maintenance of AF.

GW25-e4213

Acute and chronic effects of cilostazol on transient outward potassium current in isolated rat right ventricular myocytes

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Objectives: To explore the effects of cilostazol on transient outward potassium current (Ito) in isolated rat right ventricular myocytes.

Methods: Ito in myocytes enzymatically isolated from male SD rat right ventricle was recorded by using whole-cell patch clamp technique. The experiment consisted of two parts: perfusion experiment. Current density of Ito was recorded before and after perfusion with cilostazol at 1 μmol/L, 2 μmol/L, 5 μmol/L, or 50 μmol/L; oral medication experiment: 20 male SD rats were randomized into control group and experimental group. The rats in experimental group were fed with 10 mg/kg/d cilostazol by oral administration for 4 weeks. The rats in control group had free access to food. Then current density of Ito was compared between the two groups.

Results: In acute perfusion experiment, current densities of Ito were significantly decreased in all groups. The peak amplitude of Ito decreased from (20.82 ± 7.72) pA/pF to (7.48 ± 2.56) pA/pF (n = 9, P < 0.001). (18.64 ± 7.89) pA/pF to (7.63 ± 1.78) pA/pF (n = 5, P = 0.02), (18.78 ± 5.05) pA/pF to (7.19 ± 1.79) pA/pF (n = 3, P = 0.03), and (21.45 ± 2.54) pA/pF to (9.69 ± 2.31) pA/pF (n = 7, P = 0.00), respectively. In addition, no significant differences were observed among the four groups with current density of Ito in every group decreasing by 60%. In chronic oral medication experiment, no difference existed in the peak amplitude of Ito between control group and experimental group (n = 5: (20.23 ± 5.64) pA/pF vs (21.74 ± 8.56) pA/pF; P = 0.05).

Conclusions: Perfusion of cilostazol, rather than oral cilostazol, inhibits Ito in isolated right ventricular myocytes.

GW25-e4458

Effects of Ginsenoside Rb1 on vascular restenosis, SOD and MDA in rabbits with iliac artery injury

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Objectives: To investigate the effect of Ginsenoside Rb1 in protecting vascular intima and on superoxide dismutase (SOD) and malondialdehyde (MDA) in rabbits iliac with iliac artery injury.

Methods: 24 male New Zealand albino rabbits were equally randomized into control group, model group and drug group. Rabbits of the model group were subjected to balloon injury. Four weeks later, serum TGF-β1 level was assayed. Endothelial hyperplasia, eNOS Protein and mRNA expression were observed in injured iliac artery.

Results: Optical microscope revealed narrowed vascular lumen, thickened intima and numerous atherosclerotic plaques in the model group compared with the c-control group, whereas the vascular lumen and intima thickness remained basically no-remark in drug group. The serum TGF-β1 level was lower in drug group than that of model group. Immunohistochemistry and RT-PCR results showed that TGF-β1 protein and mRNA expression was lower in rabbit iliac artery of drug group than that in model group.

Conclusions: Ginsenoside Rb1 can accelerate repair of vascular intimal in injured rabbit iliac artery, possibly in relation to increased SOD activity and decreased lipid peroxidation.

GW25-e4467

Effects of Tongxinluo on vascular stenosis and TGF-β1 after balloon injury of rabbit iliac artery

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Objectives: To investigate the effects of Tongxinluo on vascular stenosis and transforming growth factor-β1 (TGF-β1) after iliac artery was injured by balloon in diet-induced atherosclerotic rabbits.

Methods: 24 male New Zealand albino rabbits were equally randomized into control group, model group and drug group. The iliac arteries of the rabbits in the latter two groups were subjected to balloon injury. Four weeks later, serum TGF-β1 level was assayed. Endothelial hyperplasia, eNOS Protein and mRNA expression were observed in injured iliac artery.

Results: Optical microscope revealed narrowed vascular lumen, thickened intima and numerous atherosclerotic plaques in the model group compared with the c-control group, whereas the vascular lumen and intima thickness remained basically no-remark in drug group. The serum TGF-β1 level was lower in drug group than that of model group. Immunohistochemistry and RT-PCR results showed that TGF-β1 protein and mRNA expression was lower in rabbit iliac artery of drug group than that in model group.

Conclusions: Tongxinluo can lessen intimal hyperplasia and vascular stenosis in iliac artery injury rabbits, and the mechanism of which may be related to decrease in TGF-β1 protein and gene expression.