

effect of simvastatin after experimental myocardial infarction (MI).

**Methods** 60 healthy adult SD rats were randomly divided into the sham operated group, control group, simvastatin group, simvastatin plus L-NAME (inhibitor of NOS) group and simvastatin plus AMG386 (inhibitor of Ang-1) group; Left anterior descending coronary was undergone permanent occlusion to establish the MI model. Rats with MI were administered simvastatin (1 mg/(kg·d)), simvastatin plus L-NAME (40 mg/(kg·d)), and simvastatin plus AMG386 (10 mg/(kg·wk)) respectively for 2 weeks. New microvessels in the ischaemic area near the infarction myocardium were stained by CD31 and the density of new microvessels was dedected; Ang-1, eNOS and phosphorlated endothelial nitric oxide synthase at Ser<sup>1177</sup> (p-eNOS) were evaluated by western blotting and RT-PCR assay.

**Results** (1) simvastatin significantly increased the density of new microvessels ( $p<0.05$ ), but L-NAME and AMG386 significantly inhibited the pro-angiogenic effect of simvastatin ( $p<0.05$ ). (2) simvastatin significantly improved The expression of Ang-1, eNOS and p-eNOS ( $p<0.05$ ), and AMG386 significantly decreased simvastatin induced upregulation of p-eNOS.

**Conclusion** The pro-angiogenic effect of simvastatin is associated with increased expression of Ang-1, eNOS and p-eNOS, and phosphorlation of eNOS maybe the downstream pathway for Ang-1 induced angiogenesis.

#### e0045 EFFECTS OF GINSENOSE-RBL ON ALDOSTERONE-INDUCED ELASTIN PRODUCTION IN RAT CARDIAC FIBROBLASTS EX VIVO

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**Objective** To investigate whether the role of Ginsenosides-Rbl (Gs-Rb1) on aldosterone-induced elastic fibre deposition of neonatal rat cardiac fibroblasts (CFs) in vitro.

**Methods** CFs were randomly divided into control group, aldosterone group (10 nmol/l), Gs-Rb1 group (200 μmol/l) and Gs-Rb1 binding aldosterone group (100, 200, 300, 400, 500 μmol/l Gs-Rb1, respectively, basing on 10 nmol/l aldosterone), all of which were treated for 24 h. MTT colorimetric assay was adopted to evaluate cell proliferation whereas immunofluorescence cytochemistry and western blot were used to detect elastin, tropoelastin synthesis and elastic fibre deposition.

**Results** 1. Gs-Rb1 significantly inhibited CFs proliferation induced by aldosterone in a dose-dependent manner ( $p<0.01$ ). 2. Aldosterone significantly increased elastic fibre deposition, the expression of elastin ( $p=0.024$ ) and tropoelastin collagen ( $p=0.031$ ) in CFs. 3. Pretreatment with Gs-Rb1 significantly inhibited the above aldosterone effects, including elastin levels ( $p<0.01$ ), tropoelastin synthesis ( $p<0.01$ ) and elastic fibre deposition in a dose-dependent manner.

**Conclusions** Gs-Rb1 was shown to inhibit aldosterone-induced collagen production in CFs.

#### e0046 ROSIGLITAZONE ATTENUATES MYOCARDIAL REMODELLING IN SPONTANEOUSLY HYPERTENSIVE RATS

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**Background** Rosiglitazone, an important Peroxisome proliferator-activated receptor- $\gamma$  (PPAR- $\gamma$ ) agonist, improves left ventricular

hypertrophy in diet-induced hypercholesterolemic rats. However, the effects of rosiglitazone on cardiac remodelling in spontaneous hypertension rats are unclear.

**Methods** 20 male 8-week-old SHR rats were randomly divided into two groups: one treated with oral saline ( $n=10$ ) and the other treated with rosiglitazone (5 mg/kg/d) ( $n=10$ ), compared with ten age-matched Wistar-Kyoto (WKY) rats as a control group. Echocardiography, immunohistochemistry, real-time RT-PCR, co-immunoprecipitation, and Western blot analysis were performed to assess the effects of rosiglitazone.

**Results** After 16 weeks of treatment, rosiglitazone decreased left ventricular weight (LVW) to body weight (BW) ratio ( $2.35\pm0.11$  vs  $2.56\pm0.14$  mg/g,  $p<0.01$ ). According to echocardiography, thickening of interventricular septum and posterior wall was prevented ( $2.07\pm0.03$  vs  $2.15\pm0.04$  mm,  $p<0.01$ ;  $2.08\pm0.05$  vs  $2.15\pm0.05$  mm,  $p<0.01$ , respectively) and midwall fractional shortening (MFS) was improved ( $23.82\pm0.23\%$  vs  $23.33\pm0.4\%$ ,  $p<0.01$ ) by rosiglitazone. Rosiglitazone decreased collagen I and III mRNA expression ( $0.06\pm0.01$  vs  $0.18\pm0.01$ ,  $p<0.01$ ;  $0.05\pm0.01$  vs  $0.13\pm0.01$ ,  $p<0.01$ , respectively), and normalised the MMP-9/TIMP-1 ratio ( $1.16\pm0.12$  vs  $0.78\pm0.18$ ,  $p<0.01$ ). Furthermore, AP-1 activation ( $0.51\pm0.10$  vs  $0.71\pm0.09$ ,  $p<0.01$ ) and NF- $\kappa$ B expression ( $0.33\pm0.04$  vs  $0.45\pm0.08$ ,  $p<0.01$ ) were suppressed in treated group.

**Conclusion** These results suggest that treatment with rosiglitazone will improve myocardial remodelling in hypertension. Taken together, PPAR- $\gamma$  agonist rosiglitazone may exert a protective effect on cardiac remodelling in SHR rats by decreasing the expression of AP-1 and NF- $\kappa$ B.

#### e0047 ALPHALINONENIC ACID INHIBITS HIGH GLUCOSE-MEDIATED ENDOTHELIAL NEUTROPHIL ADHESION BY DECREASING ADHESION MOLECULE EXPRESSION VIA PI3K/AKT PATHWAY

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**Objective** Neutrophil-endothelial adhesion is crucial to vascular injury, the major cause of diabetic vascular complications. We studied the mechanism of cardio-protective effect of Alpha-linolenic acid (ALA).

**Methods** Human umbilical vein endothelial cells (HUVECs) were cultured in 5.5 mmol/l and 33 mmol/l for 72 h. ALA with different concentrations was (were) added with defatted bovine serum albumin as a carrier for 18 h before (del) incubation with high glucose. The effects of ALA on high glucose-induced activation of endothelial cells were then examined.

**Results** ALA (10 to 100 μmol/l) decreased the adhesion of human neutrophilic polymorphonuclear leukocytes (PMN) to HUVECs stimulated with high glucose (33 mmol/l) for 48 h. However, with a higher concentration, ALA (200 μmol/l) exerted an opposite effect. ALA (50 μmol/l) also inhibited intercellular adhesion molecule-1 (ICAM-1) and P-selectin expressions in HUVECs induced by high glucose. ALA enrichment partially prevented the reduction of Akt phosphorylation caused by high glucose. The inhibitory effects of ALA (50 μmol/l) on high glucose-mediated PMN adherence and endothelial adhesion molecule expression were partially abrogated by pretreatment with the PI3K inhibitor LY294002 and wortmannin, suggesting that Akt activation might inhibit activation of endothelial cell induced by high glucose.

**Conclusions** We conclude that (del) ALA, with a low concentration, acts directly on endothelial cell to inhibit expression of adhesion molecules and neutrophil adhesion mediated by high glucose via a PI3K/Akt-dependent pathway.