in KCNQ1 (representing 10% of all KCNQ1 mutations). In addition, 4 nonsense mutations were found in KCNQ2, whereas only 1 in KCNQ3 and none in KCNQ4.

**Conclusions:** The present study shows that average QTc, Schwartz score, episodes of syncpe, and average higher detection rate of mutations in LQT3 among Chinese patients. In addition, our study indicates that the majority mutations harbored by LQTS patients are on LQT3-1 causing genes and LQT2 is the most common subtype in Chinese patients. The present study also expands the spectrum of LQT3- causing mutations in Chinese.

For Chinese Channelopathy Register Investigators

**GW25-e4615**

Renal denervation suppresses atrial fibrillation in a model of renal impairment

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**Objectives:** A close association exists between chronic kidney disease (CKD) and atrial fibrillation (AF) occurrence. Activation and overactivity of sympathetic nervous system (SNS) may be one of the pathogenic mechanisms responsible for the development of AF associated with renal impairment (RI). Renal denervation (RDN) decreases sympathetic renalafferent nerve activity, leading to decreased central sympathetic drive. The main objective of the study was to explore the effects of SNS inhibition of PDE5 leading to the increase in intracellular cGMP and development of AF associated with renal impairment (RI). The in vivo studies demonstrated that resveratrol prevents cardiac reperfusion injury by targeting cGMP/PKG signaling pathway. Nevertheless, the exact mechanism by which resveratrol activates the cGMP/PKG pathway remains unclear. The intracellular cGMP levels were elevated by RI, which were reversed by RDN.

**Conclusions:** RDN significantly reduced the incidence of AF in the model of RI by combined reduction of sympathetic and renin-angiotensinaldosterone system activity.

**GW25-e5127**

The role of PDE5 in resveratrol-induced cardioprotection against ischemia/ reperfusion injury

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**Objectives:** Resveratrol has been established to be cardioprotective and our previous study demonstrated that resveratrol prevents cardiac reperfusion injury by targeting the mitochondrial permeability transition pore (mPTP) through inactivation of GSK-3β via the cGMP/PKG signaling pathway. Nevertheless, the exact mechanism by which resveratrol activates cGMP/PKG pathway remains unclear. The intracellular cGMP levels were elevated by RI, which were reversed by RDN.

**Conclusions:** RDN significantly reduced the incidence of AF in the model of RI by combined reduction of sympathetic and renin-angiotensin-aldosterone system activity.

**GW25-e5194**

A protective role of SIRT3 in endothelial function under metabolic stress

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**Objectives:** Recent evidence has shown that loss of SIRT3 contributes to the development of the metabolic syndrome but the role of SIRT3 in endothelial dysfunction under metabolic stress has not been identified.

**Methods:** Male SIRT3 KO and age-matched wild-type mice were fed with standard chow diet or high-fat diet (HFD) for 24 weeks. The vasoreactive responses to phenylephrine, sodium nitroprusside and acetylcholine and ROS production in isolated thoracic aortic segments were determined.

**Results:** Phenylephrine, sodium nitroprusside, and acetylcholine evoked similar vasoreactive responses in SIRT3 KO and wild-type mice fed with standard diet. However, compared with the wild type fed with HFD, endothelium-dependent relaxation to acetylcholine was impaired in SIRT3 KO mice fed with HFD. Furthermore, SIRT3 KO mice fed with HFD displayed decreased NO bioavailability and increased mitochondrial superoxide formation compared with the wild control fed with HFD. In human endothelial cells, SIRT3 knockdown exacerbated mitochondrial ROS production while SIRT3 overexpression protected endothelial function against palmitate treatment.

**Conclusions:** Our data have shown that SIRT3 deficiency increases mitochondrial ROS production and exacerbates endothelial dysfunction in mice fed with high-fat diet, indicating a protective role in endothelial homeostasis under metabolic stress.

**GW25-e5236**

Rosuvastatin Attenuates Lps-Induced Adhesion Molecules Expression in Human Umbilical Vein Endothelial Cells

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**Objectives:** Stable adhesion and transendothelial migration of leukocytes into the vascular wall play an important role in atherogenesis. Cell adhesion molecules such as intracellular cell adhesion molecule-1 (ICAM-1), vascular cell adhesion molecule-1 (VCAM-1) significantly mediate the process. We investigated the effect of rosuvastatin, an inhibitor of HMCOase reductase administered alone or in combination, on plasma levels of LDL cholesterol, on the expression of VCAM-1 and ICAM-1 by human umbilical vein endothelial cells (HUVEC) stimulated with lipopolysaccharide (LPS). The HUVECs were primary cultured.

**Methods:** HUVECs from the second to fourth generations were stimulated with different concentrations of LPS and the model of cell injury was set up. Then the HUVECs were pretreated with rosuvastatin in different concentration for 2 hours before LPS is added. The expression of VCAM-1 mRNA and ICAM-1 mRNA was evaluated by real-time PCR. The content of VCAM-1 protein and ICAM-1 protein was detected with western blot. Mevalonate (MEV) was added to evaluate whether the effect of rosuvastatin on expression of VCAM-1 and ICAM-1 protein can be blocked.

**Results:** We found the expression of cell adhesion molecules to be significantly inhibited by rosuvastatin in a time and concentration-dependent manner and to a greater extent in the case of VCAM-1 as compared with ICAM-1. The content of VCAM-1 protein and mRNA, ICAM-1 protein and mRNA significantly decreased when pretreated with certain concentration of rosuvastatin (P<0.05). The effects of rosuvastatin on VCAM-1 and ICAM-1 protein can’t be blocked by mevalonate. Rosuvastatin inhibited LPS-induced activation of nuclear factorκB (NF-κB).

**Conclusions:** The findings suggest that the benefits of rosuvastatin in vascular disease may include the inhibition of expression of VCAM-1 and ICAM-1 through effects on NF-κB, and the effect is independent on its lipid-lowering effect.

**GW25-e5238**

Lycopene protects endoplasmic reticulum stress induced apoptosis against neonatal mouse cardiomyocytes hypoxia/reoxygenation injury

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**Objectives:** Endoplasmic reticulum (ER) stress induced apoptosis has been implicated as a critical cause in the pathogenesis of myocardial ischemia reperfusion (IR) injury. Our previous studies demonstrated that lycopene exhibit great pharmacological potential in protecting against the IR-injury, but whether its effect is mediated through attenuation of ER stress-induced apoptosis remains unclear. The aim of this study was to investigate the effect of lycopene on hypoxia/reoxygenation (H/R) induced ER stress in primary cultured neonatal mouse cardiomyocytes.

**Methods:** Primary cardiomyocytes were isolated from neonatal C57BL/6 mice and cultured in four groups: H/R, Rosuvastatin treated, Rosuvastatin treated and hypoxia followed by 6h of reoxygenation to achieve H/R model. Cardiomyocytes were pretreated with lycopene (5 μM) prior to H/R treatment in hypoxia + H/R. Cell viability was assessed using CCK-8 assay in each