not only an inflammatory factor but also an apolipoprotein that can replace apolipoprotein A1 (apoA1) as the major apolipoprotein of HDL. However, the relationship between genetic polymorphisms of SAA and CAD remains unclear.

Methods

4 Single Nucleotide Polymorphisms (SNPs) (rs12218, rs1059559, rs2295358, and rs2468844) of SAA1 and SAA2 gene were genotyped in 1580 CAD patients and 1914 age- and sex-matched controls by the use of PCR-restriction fragment length polymorphism (PCR-RFLP) analysis.

Results

The CC genotype and C allele of rs12218 and the GG genotype and G allele of rs2468844 were more common in the CAD patients than in the control subjects, respectively (all p<0.001). After adjusted for diabetes mellitus, hypertension, smoking, drinking and lipid disorders by use of logistic regression, the SNPs rs12218 (OR=5.906, 95% CI 2.877 to 12.124, p<0.001) and rs2468844 (OR=4.102, 95% CI 2.018 to 8.129, p<0.001) still differed significantly between the CAD patients and control subjects.

Conclusion

These data suggest that genetic polymorphisms of SAA1/2 gene significantly increased the risk of CAD in a Chinese Han population.

**Molecular Imaging of Apelin on Survival and Function of Mesenchymal Stem Cells in Hindlimb Mice**

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Objective

This study was designed to evaluate the contribution of apelin to the therapeutic efficacy of mesenchymal stem cells in hindlimb ischaemia mice.

Methods

Mesenchymal stem cells (MSC) expressing firefly luciferase (Fluc) were isolated from β-actin-luc mice and characterised by flow cytometry and bioluminescence imaging (BLI). Male FVB mice underwent femoral artery ligation and received MSC (1×10⁶) or MSC with Apelin intra-quadriceps femoris muscle injection. Cell survival was imaged by BLI. Angiogenesis was assessed by immunohistochemistry method. The expressions of AKT and pAKT after cellular therapy were analyised by Western blot.

Results

Fluc expression correlated with cell number in all groups. In vivo BLI revealed acute donor cell death of MSC within 2 weeks after transplantation. By contrast, signals of injected cells were still present after 4 weeks in the MSC with apelin group. Immunohistochemistry showed more angiogenesis in the MSC with Apelin group compared to MSC (p<0.05). In vitro apelin treatment of MSC exposed to hypoxia increased cell proliferation. Moreover, considerable increases in phosphorylation of Akt were found in MSC pretreated with apelin.

Conclusions

Apelin has beneficial effects on the therapeutic efficacy and survival maintenance of mesenchymal stem cells in hindlimb ischaemia and might constitute an important therapy target in cardiovascular disease.

**Imaging of Vulnerable Plaque and Thrombosis with MRI in a Rabbit Model**

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Objective

Our aim is to investigate the feasibility of detecting vulnerable plaque and thrombosis by use of MRI.

Methods

24 male New Zealand White rabbits were divided into two groups: the atherosclerosis group (As group, n=20) and the normal control group (C group, n=4). After induction of atherosclerosis, MRI exams were conducted separately before and after the induction, triggering the plagues’ disruption. The rabbits were then massacred to obtain data of pathology. The animals in the normal control group were fed a standard diet, and we performed MRI exam separately before and after, triggering the plagues’ disruption too. After MRI exams, rabbits were massacred to obtain data of pathology. The in vivo imaging results of MRI were compared with the
and may become a useful tool to identify vulnerable plaques.

**Conclusion**

MRI can be used to detect atherosclerotic thrombosis, and may become a useful tool to identify vulnerable plaques.

**e0085 RELATIONSHIP BETWEEN THE POLYMORPHISM OF APOLIPOPROTEIN APO B GENE XBAI ECORI AND THE SERUM LIPIDS IN THE LI NATIONALITY OF HAINA**

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**Objective** To study the apolipoprotein (apo) B gene XbaI and EcoRi polymorphism of the Li nationality in Hainan Island and to evaluate their effects on serum apolipoproteins and lipids.

**Methods** The study was carried out in a natural population of 351 (151 samples from the Li nationality and 200 samples from the Han nationality) individuals aged between 20 and 84 from Li nationality in Hainan area. The XbaI and EcoRI polymorphisms of apolipoprotein (apo) B gene were analysed using PCR and Restriction Fragment Length Polymorphism (RFLP) methods. The levels of serum apoA, apoB, total cholesterol (TC), triglyceride (TG), HDL cholesterol (HDL-C) were also measured, and LDL cholesterol (LDL-C) was calculated.

**Results** The frequency of the Li nationality’s X<sup>+</sup>/X<sup>-</sup> genotype subgroups was 0.119. The frequency of the Li nationality’s X<sup>-</sup> allele was 0.059, which was higher than the Han nationality control group (p<0.05). The frequency of the Li nationality’s E<sup>-</sup>/E<sup>-</sup> genotype subgroups was 0.026. The frequency of the Li nationality’s E<sup>-</sup> allele was 0.043, which was no difference compared to the Han nationality (p>0.05). The levels of TC, LDL-C in the Han nationality were higher than those in the Li nationality, but the levels of HDL-C in the Li nationality were higher than those in the Han nationality. There was no difference about the levels of apoA, apoB, total cholesterol (TC), triglyceride (TG), HDL cholesterol (HDL-C) were also measured, and LDL cholesterol (LDL-C) was calculated.

**Conclusions** The XbaI genotypes and alleles’ frequency distribution between Li nationality and Han nationality have significant differences but the EcoRI genotypes and alleles’ frequency distribution between Li nationality and Han nationality have no statistical significance (p>0.05). Different genotypes of EcoRI and XbaI have different effects on serum apolipoproteins and lipids. The levels of LDL-C of the genotype subgroups which contains X<sup></sup> allele was higher than the genotype subgroups which does not contain the X<sup>-</sup> allele. The X<sup>-</sup> allele can affect lipid levels, but the E<sup>-</sup> allele can not affect lipid levels.

**e0086 SINOAORTIC DENERVATION DISRUPTED THE CIRCADIAN RHYTHM OF THE OSCILLATION OF MOLECULAR CLOCK AND ACTIVITY OF RAS IN CARDIOVASCULAR**

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**Objective** To observe the profile of blood pressure in sinoaortic denervated (SAD) rats and investigate the expression of clock genes per2, BMAL1, clock output gene DBP, AT1 and PCNA in heart and thoracic aortic of SD and SAD rats, therefore to probe into the influencing factors of arterial baroreflex (ABR) on molecular clock and the activity of RAS in peripheral cardiovascular and their interaction.

**Methods** 72 male Sprague-Dawley rats underwent SAD or sham operation at the age of 12 weeks. 24-h BP and BPV were measured in conscious and unrestrained rats 4 weeks after operation. Rats were housed in a 12 h light/12 h dark cycle (LD12:12) for at least 10 days. Heart and thoracic aorta were taken every 4 h throughout the day to investigate mRNA expression of clock genes (per2, BMAL1), clock output gene DBP, AT1 receptors and PCNA by RT-real time PCR and examine the abundance of Per2 protein in heart and vessel tissue by Western Blotting respectively.

**Results** Compared with sham-operated rats, SBPV and DBPV over 24 h of SAD rats were enlarged (p<0.01). Clock genes (Per2 and BMAL1), clock output gene DBP, AT1 receptors and PCNA oscillated synchronously both in heart and vascular of SAD and sham-operated rats under light-dark cycle. After sinoaortic denervation, the total mRNA abundance of Per2 decreased significantly both in heart and aorta (p<0.05 or p<0.01), BMAL1, DBP, AT1 and PCNA in heart and aorta were up-regulated significantly (p<0.05 or p<0.01), while that of these genes in aortic remained unchanged. More importantly, after operation, the circadian rhythm of mRNA expression of all the above genes both in heart and aortic changed significantly, showing an abnormal expression level of these genes by a rough normal diurnal and nocturnal pattern in heart, or by diurnal oscillation patterns in aorta. Consistent with Per2 mRNA expression, its protein abundance in heart and aortic decreased simultaneously, and the circadian rhythm was also disturbed. Moreover, all the amplitude of the mentioned genes were significantly weakened or enlarged in SAD rats.

**Conclusions** The impairment of arterial baroreflex leads to the abnormality in the circadian rhythm of the molecular clocks and the RAS activity was mediated by AT1 in peripheral cardiovascular. The abnormality of the total RAS activity, circadian rhythm of RAS activity in peripheral tissues, disorders of molecular clock as well as the abnormality of RAS activity may all contribute to the upset of molecular clock in peripheral cardiovascular following sinoaortic denervation. Therefore these abnormalities promote dysfunction of BP regulation and proliferation and remodelling of cardiovascular in SAD rats.

**e0087 APPLICATION OF SERUM PROTEIN FINGERPRINT IN DIAGNOSIS OF CORONARY ARTERY DISEASE**

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**Objective** Coronary artery disease (CAD) has emerged as the dominant etiologic factor in patients with heart failure. The