amplified when elevated VLDL cholesterol was combined with elevated LDL cholesterol and/or the presence of major CVD risk factors.

Epidemiology and Preventive Medicine: Metabolic Syndrome and Diabetes

e0305 THE EFFECT OF PROFILIN-1 ON VASCULAR INJURY CAUSED BY ADVANCED GLYCATION END PRODUCTS

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Objective The aims of this study were to explore the effect of Profilin-1 on vascular injury caused by advanced glycation end products, So as to provide a new therapeutic approach with diabetic vascular complications.
Methods Human umbilical vein endothelial cells were incubated with different concentrations of AGEs-BSA (50 $mg \cdot L^{-1}$, 100 $mg \cdot L^{-1}$, 200 $mg \cdot L^{-1}$) for various periods of time (6—24 h). The levels of ADMA and NO in the conditioned medium, the protein expression of Profilin-1 for cells were determined.
Results AGEs-BSA increased the protein expression of Profilin-1 and ADMA in a concentration and time-dependent manner. Incubation with high concentration glucose (30 mmol/l) for 24 h elevated the levels of NO, and AGEs-BSA (200 $mg \cdot L^{-1}$) decrease the levels of NO. AGEs-BSA (200 $mg \cdot L^{-1}$) could decrease the levels of NO in the conditioned medium, the difference were significant after 24 h.
Conclusion Profilin-1 may be involved in "metabolic memory" induced by the advanced glycation end products.

e0306 SERUM CONCENTRATIONS OF RESISTIN AND ADIPONECTIN IN CASES WITH IMPAIRED GLUCOSE TOLERANCE

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Objective Recent studies indicated that resistin and adiponectin take some roles in the glucose homeostasis and suggested there were associations among resistin, adiponectin and glucose tolerance. Therefore we investigate the serum levels of resistin and adiponectin in impaired glucose tolerance (IGT) cases in the present study.
Methods 82 subjects were included, divided into IGT group (27 cases) and normal glucose tolerance (NGT) group (55 subjects) based on the oral glucose tolerance test. Body mass index (BMI), waist circumference, blood pressure, fasting lipids, glucose, insulin and C-peptide were measured, and adipocytokines such as resistin, adiponectin, leptin, TNF-α, interleukin-6 (IL-6) and C-response protein (CRP) were also examined, insulin resistiance was assayed by the homeostasis model assessment of insulin resistance (HOMA-IR) formula.
Results There were no differences in concentrations of resistin and adiponectin between IGT group and NGT group. Pearson relation analysis showed that serum resistin concentrations were positively correlated with age ($r=0.482$, $p<0.05$) and BMI ($r=0.389$, $p<0.05$), and serum adiponectin concentrations were positively correlated with HDL-c ($r=0.524$, $p<0.01$) and female ($r=0.437$, $p<0.05$), but negatively correlated with TNF-α ($r=-0.437$, $p<0.05$) in IGT cases. There were no correlations among resistin, adiponectin with fasting glucose, glucose tolerance and HOMA-IR. In IGT cases with overweight and obesity, serum resistin concentrations were higher than those in IGT cases with normal weight (16.3 ± 7.5 ng/ml vs 9.2 ± 6.2 ng/ml, $p<0.01$), and serum resistin concentrations positively correlated with age ($r=0.482$, $p<0.05$) and BMI ($r=0.380$, $p<0.05$). In IGT cases, the concentrations of adiponectin were higher in females than males (12.2 ± 7.1 μg/ml vs 6.1 ± 5.5 μg/ml, $p<0.05$).
Conclusions In IGT cases, serum resistin and adiponectin concentrations are normal, however, serum resistin concentrations were higher in IGT cases with overweight and obesity while adiponectin were higher in female IGT case.

e0307 CLINICAL RESEARCH OF NONINVASIVE CARDIAC HAEMODYNAMICS IN MIDDLE-AGED AND OLD WITH TYPE 2 DIABETES MELLITUS

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Objective To explore the characteristics of cardiac haemodynamics in middle-aged and old with type 2 diabetes mellitus, and to discussion the sensitive indicators to determine the early heart disease by Lifegard ICG Haemodynamic Monitor.
Methods 218 individuals (mean age 62.11 ± 10.71 years) were recruited in this study. Cardiac outpute (CO), cardiac index (CI), systemic vascular resistance (SVR), systemic vascular resistance index (SVRI), stroke volume (SV), stroke index (SI), thoracic fluid content (TFC), acceleration index (ACI), left cardiac works index (LCWI), pre-ejection period (PEP), left ventricular ejection time (LVET), velocity index (VI), contraction time ratio (STR), heart rate (HR) and mean arterial pressure (MAP) were measured using Lifegard ICG Haemodynamic Monitor.
Results (1) Compared with the healthy controls, there was significant difference in the waist-hip ratio (WHR), fasting blood glucose (FPG), total cholesterol (TC), systolic blood pressure (SBP), diastolic blood pressure (DBP), pulse pressure (PP), acceleration index (ACI), velocity index (VI), pre-ejection period (PEP), contraction time ratio (STR) of patients with type 2 diabetes mellitus ($p<0.05$ or $p<0.01$). (2) Compared with the healthy controls, there was significant difference in the fasting blood glucose (FPG), acceleration index (ACI), velocity index (VI) of patients with pre-diabetes ($p<0.05$ or $p<0.01$). (3) Correlation analysis: ACI related negatively with body mass index, waist-hip ratio, fasting blood glucose, systolic blood pressure, diastolic blood pressure, mean artery pressure and heart rate; PEP related positively with body mass index; VI related negatively with body mass index, waist-hip ratio, fasting blood glucose, systolic blood pressure, diastolic blood pressure, mean artery pressure and heart rate; STR related positively with body mass index and waist-hip ratio.
Conclusion Cardiac haemodynamics impaired to varying degrees in diabetes mellitus and pre-diabetes, the body mass index is the common risk factor on the reduction of these indicators. ACI and VI measurements are noninvasive and sensitive indicators of evaluating abnormalities of cardiac haemodynamics in diabetes mellitus.

e0308 PROTEOMIC FEATURES INDUCED BY INSULIN ON VASCULAR SMOOTH MUSCLE CELLS FROM SPONTANEOUS HYPERTENSIVE RATS IN VITRO

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Hyperinsulinemia is a risk factor in atherosclerosis formation that it stimulated VSMCs proliferation and migration. To understand the underlying molecular mechanism involved in the processes of

cellular response to insulin, VSMCs from WKY and SHR were isolated and cultured, and its proteome were comparatively analysed with normal control by 2-DE. Results showed that the proliferation of VSMCs from SHR be more sensitive to insulin stimulation than that VSMCs from WKY. The detectable spots ranged from 537 to 608 on the gels in VSMCs of SHR, and 413±31 spots in VSMCs of WKY. The different expressed protein spots in VSMCs of SHR were then isolated and measured by MALDI-TOF-MS. A total of 18 spots showed a sharp clear spectrum, and 13 spots matched with the known proteins from database. These proteins were mainly involved in cytoskeleton, glycometabolism and post-translational processes. Among these proteins, OPN and matrix gla protein were up-regulated expression proteins, whiled α-SM actin was down-regulated. Furthermore, these preliminarily identified proteins confirmed by RT-PCR and western blotting analysis were coincident with the changes in 2-DE check. In addition, the cytoskeleton changes and migration rate of VSMCs from SHR treated by insulin increased significantly. The results showed that insulin plays a crucial role in activating proliferation and migration of VSMCs, by regulating the phenotype switch of VSMCs.

e0309 THE COMPARISON STUDY OF CORONARY ARTERY LESION IN TYPE 2 DIABETIC PATIENTS WITH CORONARY HEART DISEASE BETWEEN UYGUR AND HAN NATIONALITY

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Objective To study the characteristics of coronary artery lesion between Uygur and Han nationality type 2 diabetic patients with coronary heart disease.
Methods 648 patients were analysed retrospectively in our hospital. The coronary artery lesion was evaluated by the number, location and Gensini scores.
Results Compared with the Han patients, mean age in the Uygur patients was lower in same Gensini scores group ($p<0.05$). Along with the age increasing, Gensini scores increased gradually. Gensini scores of Uygur patients were significantly higher than those of Han patients in same age groups. The prevalence of three-vessel lesion was the highest in both Han (46.9%) and Uygur patients (45.9%). Severity of coronary artery disease increased with age, the prevalence of single-vessel lesion gradually reduced and the prevalence of three- vessel lesion gradually increased.
Conclusions Severity of coronary artery disease increased with age. Severity of coronary artery lesion in Uygur patients is significantly more serious than in Han patients at the same age. Compared with Han patients, the age of onset of similar degree coronary atherosclerosis in the Uygur patients is younger.

e0310 ASYMMETRIC DIMETHYLARGININE AND CAROTID ATHEROSCLEROSIS IN TYPE 2 DIABETES MELLITUS

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Objective Circulating levels of asymmetric dimethylarginine (ADMA), an endogenous nitric oxide synthase inhibitor, are increased in diabetes mellitus (DM). This study was to assess the relationship between plasma ADMA level and carotid atherosclerosis in patients with type 2 DM.
Methods A total of 72 newly diagnosed and untreated type 2 DM individuals without manifest cardiovascular disease and 72 healthy controls were studied. Carotid atherosclerosis was determined by ultrasonographically evaluated intima-media thickness (IMT) and plaque score in all subjects. Plasma concentration of ADMA was measured by high-performance liquid chromatography.
Results Fasting blood glucose, haemoglobin A1c, insulin, triglyceride, and ADMA levels, and mean IMT, plaque score were higher in diabetic patients compared with the controls. Univariate and multivariate analyses demonstrated an independent association between ADMA and mean IMT in diabetic patients. On a multiple logistic regression analysis, ADMA was the sole predictor of carotid plaque formation (plaque score ≥1.1) (OR 2.43, 95% CI 1.19 to 4.94, $p<0.05$).
Conclusion Our results suggest that increased levels of ADMA are involved in the development of carotid atherosclerosis in type 2 DM.

Epidemiology and Preventive Medicine: Obesity

e0311 PREVALENCE OF CARDIOVASCULAR DISEASE BIOLOGICAL RISK FACTOR CLUSTERING AMONG OVERWEIGHT AND OBESE POPULATION IN BEIJING COMMUNITY—RESULTS FROM CCEIP

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Objective To investigate prevalence of CVD biological risk factor clustering among overweight and obese residents in Beijing community.
Method Cross-sectional data of 9786 subjects from CCEIP were obtained for analysis. Participants were divided into 3 groups (Normal, overweight and obese population) based on body mass index (BMI). Body examinations were done to record blood pressure. Overnight fasting plasma samples were drawn to determinate blood lipid and glucose levels.
Results 1) 10.5%, 22.5% and 37.9% subjects from normal, overweight and obese group had ≥2 biological CVD risk factors. (11.5%, 21.7%, 51.5% in men and 9.5%, 17.2%, 24.4% in women). The proportion of biological risk factor clustering patients elevated with the increase of BMI. Clustering hazard will increase by 21% when BMI increase every 1 unit. Clustering prevalence was higher in overweight and obese men than women (both $p<0.001$). 2) Prevalence of clustering increased with ageing in population. However, there was no significant difference among youth, middle aged and elderly obese male population (49.2%, 49.7% and 56.1%, $=2.52$ $p=0.285$). 3) The most common clinical symptoms complex of clustering was hypertension and dyslipidemia.
Conclusion The prevalence of CVD risk factor clustering was relatively high in overweight and obese population. Strengthen intervention should be taken in obese population, especially the young men, to prevent CVD events.

e0312 EVALUATION ON THE DIAGNOSTIC VALUE OF BODY MASS INDEX IN PREDICTING OBSTRUCTIVE SLEEP APNEAHYPOPNEA SYNDROME IN CHINESE ADULTS

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Objective To evaluate diagnostic value of body mass index (BMI) in screening and diagnosing obstructive sleep apnoea-hypopnoea syndrome and to determine the reference standard of body mass index (BMI) in both male and female population by receiver operating characteristic (ROC) curve.