Results: 74 individuals were diagnosed with diabetes during a 15-year follow-up period (incidence: 10.8%). Time of diabetes onset was 11.2±3.8 years. Pulse pressure, as an indirect indicator of arterial stiffness, could not be a predictor of diabetes in middle-aged population from community both at 7-8 years and 15 years follow-up after adjustment for potential risk factors including age, sex, smoking, alcohol intake, regular physical exercise, family history of diabetes, body mass index, high-density lipoprotein cholesterol, triglyceride and fasting plasma glucose (both P>0.05). The areas under the ROC curves were 0.568 (95% CI: 0.530-0.606, P=0.368) and 0.561 (95% CI: 0.523-0.599, P=0.084) for PP, respectively.
Conclusions: Brachial pulse pressure was an inappropriate predictor for diabetes in middle-aged community residents. Future researches may be warranted to assess whether this phenomenon are still exist in a large population.

GW25-e1392

Clinical research of noninvasive cardiac hemodynamics in middle-aged and old-aged patients with type 2 diabetes mellitus

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Objectives: To explore the characteristics of cardiac hemodynamics in middle-aged and old-aged patients with type 2 diabetes mellitus and the sensitive indicators to determine the early heart diseases by the Lifegard ICG Hemodynamic Monitor.
Methods: 218 individuals were divided into three groups: healthy controls (n=130), patients with pre-diabetes (n=23), and patients with type 2 diabetes mellitus (n=65). Body mass index(BMI), waist-hip ratio(WHR), fasting blood glucose(FPG), triglycerides(TG), total cholesterol(TC), systolic blood pressure(SBP), diastolic blood pressure(DBP), pulse pressure(PP) and mean arterial pressure(MAP) were measured in all subjects. Cardiac output(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) and heart rate(HR) were measured using the Lifegard ICG Hemodynamic Monitor.
Results: The data from statistical analysis demonstrated that there were significant differences in WHR, FPG, TC, SBP, DBP, PP, ACI, VI, PEP and STR in patients with type 2 diabetes mellitus compared with the healthy controls (P<0.05 or P<0.01). Furthermore, we also found that there were significant differences in FPG, ACI and VI in patients with pre-diabetes compared with the healthy controls (P<0.05 or P<0.01). Correlation analysis showed that ACI was negatively related with BMI, WHR, FPG, SBP, DBP, MAP and HR(P<0.01), PEP positively with BMI(P<0.01), VI negatively with BMI, WHR, FPG, SBP, DBP, MAP and HR(P<0.01), and STR positively with BMI and WHR (P<0.05 or P<0.01).
Conclusions: Cardiac hemodynamics impairment exit in patients with diabetes mellitus or pre-diabetes in various degrees. BMI is a common risk factor to induce the changes of the above indicators. ACI and VI are noninvasive and sensitive indicators in evaluating abnormalities of cardiac hemodynamics in diabetes mellitus.

GW25-e4204

Study on influence of intensive lifestyle intervention to blood glucose for patients with coronary heart disease combined impaired fasting glucose

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Objectives: Patients with Coronary heart disease (CHD) who early detection of blood glucose metabolic abnormalities can avoid to develop diabetes, protect blood vessels, and reduce the risk of cardiovascular events. The aim of this study was to explore the influence of blood glucose for patients with coronary heart disease (CHD) combined impaired fasting glucose (IFG) in intensive lifestyle intervention.
Methods: 96 patients with coronary heart disease in Cardiovascular Medical Center, the First Hospital of Jilin University, diagnosed impaired fasting glucose were randomly divided into experimental group of 48 patients and control group of 48 patients. Experimental group was given intensive lifestyle intervention. Control group was given conventional healthy lifestyle guidance. Two groups were given follow-up after 2 months, 6 months, 12 months.To monitor the change of blood glucose after the intervention of 12 months.
Results: Before intervention, blood glucose of experimental group (5.51±0.91mmol/L), the control group (5.49±1.05mmol/L), two groups showed no statistically significant difference (P>0.05). After intervention of 12 months, blood glucose of the experimental group (5.33±0.90mmol/L), the control group (5.46±0.95mmol/L), the results between two groups, before and after intervention of every group were statistically significant differences (P<0.05).
Conclusions: Patients with coronary heart disease combined impaired fasting glucose (IFG) by taking intensive lifestyle intervention programs to change their lifestyle can effectively control blood glucose, reduce the incidence of diabetes, improve the quality of life, save health resources, reduce the social burden and effectively prevent cardiovascular dangerous event.

GW25-e2517

Xinjiang Kazak adult population Blood glucose level and Ankle-to-Brachial Index: Results from the Cardiovascular Risk Survey

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Objectives: To understand the blood glucose levels and ankle length index (ABI) and peripheral arterial disease (PAD) of the Kazak population in Xinjiang, explore Kazak population in Xinjiang impaired fasting glucose, diabetes and the related risk factors for ankle arm index (ABI).
Methods: Four-stage selected random samples maternal age 35 and over were used to analyze the prevalence and the relationship between the risk factors of peripheral artery disease and blood glucose level. The sampled adult population were collected 6 locality,including Urumqi Kelamayi, Fukang, the Turfan Basin locality, Hetian locality, Yili Kazakh autonomous prefecture,they were from 23 municipalities and 7 locality and 5 autonomous county in Xinjiang. The proportion of male to female accounted for 50% each. Each individual were answered a questionnaire,received physical examination, biochemical indicator survey and ankle brachial index(ABI) examination. A logistic regression analysis was also made to identify possible risk factors and their powers on the prevalence of PAD complicated in diabetes or impaired fasting glucose.
Results: A total number of 3750 adults were surveyed, the impaired fasting glucose total prevalence was 6.3%, the prevalence of male and female were 6.9% and 6.1% respectively; The overall incidence of diabetes was 3.1%, the prevalence of male and female were 3.7% and 2.2% respectively; PAD prevalence was 5.6%, the prevalence of male and female were 6.4% and 4.9% respectively; The risk factors PAD with impaired fasting glucose or diabetes were age, smoking, body mass index, triglyceride and total cholesterol with significant differences (P<0.05).
Conclusions: The results of this study shows that the higher prevalence of PAD and impaired fasting glucose, diabetes in Xinjiang Kazak adults. The prevalence of PAD and increase substantially with aging. The risk factors of PAD complicated in impaired fasting glucose or diabetes include age, smoking, body mass index, triglyceride and total cholesterol.

Obesity

GW25-e1706

Mechanisms of the preventive effects of breast milk to adult obesity in SGA rats

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Objectives: Small for gestational age (SGA) infant is in high risk of being obese when growing up. Nutritional programming is the probable pathogenesis. But the exact mechanisms are still not clear. Leptin is an important factor to adjust the lipid metabolism. Leptin deficiency or leptin resistance is related to obesity. Many researches had shown that breast feeding in early infantile period may prevent obesity in adults. We hypothesize that breast feeding in early infantile period might prevent obesity in later life period through activate leptin-OBRb-JAK2/ STAT3-SOCS3 signal pathway.
Methods: We developed intrauterine growth retardation (IUGR) rat model through feeding restriction during pregnant period of the mother rat, whose pups were SGA rats. The nutritional status, which included the body weight, nose-to-tail length and body mass index (BMI), of the pups was measured in infantile and adult period (0d, 7d, 18d, 30d and 60d of life) after breast feeding or formula feeding in early life (within 21 days of life). AZD1480, a JAK2 inhibitor, was used to block the leptin-OBRb-JAK2/STAT3-SOCS3 pathway peripherally (subcutaneously injection) or centrally (intraventricular injection) from the first day till 30th day of life.
Results: The birth weight of the SGA rats were lower than mean-2SD of the birth weight of the appropriate for gestational age (AGA) rats born from the normal feeding pregnant rats. The SGA rats were fed by breast milk or formula milk. The weight and BMI of the SGA rats at the 30th day of life grew to be close to those of the AGA rats at the relevant day. The weight and BMI of the SGA rats fed by breast milk were similar to the AGA rats at the 60th day of life. The BMI of the female SGA rats fed by formula milk at the 60th day of life were 0.66±0.01g/cm^2 compared with 0.59±0.05g/cm^2 in female AGA rats at the relevant day (P<0.05). Otherwise the differences of the weight and BMI between the male SGA and AGA rats at the 60th