Objectives: Metabolic syndrome (MetS) heightens the risk of cardiovascular disease and dyslipidemia in MetS contributes to this risk. The primary goal according to NCEP-ATPIII is to normalize low-density lipoprotein cholesterol (LDL-C) levels, after which non-high-density lipoprotein cholesterol (non-HDL-C) goal attainment should be attempted in MetS. However, little is known regarding lipid-lowering therapy outcomes, including lipid goal attainment in MetS patients in China. The aim of this study was to objectively lip- id-lowering therapy and LDL-C and non-HDL-C goal attainment in MetS patients in China.

Methods: Data regarding patient demographics, information on lipid-lowering agents used, lipid parameters and cardiovascular risk profiles were analyzed for 25,317 patients including in the DYSIS-China, a cross-sectional, observational study of patients treated with lipid-lowering agents at 122 centers across China. All patients were >45 years of age and had been treated with a lipid-lowering agent for at least 3 months. MetS was defined according to the NCEP-ATPIII criteria and the lipid criteria of the 2007 Chinese Guidelines on Prevention and Treatment of Dyslipidemia in Adults.

Results: The prevalence of MetS in our study patients was 39.9% and 37.4% according to the criteria of NCEP-ATPIII and 2007 China Guideline, respectively. LDL-C goal attainment was less frequent among MetS patients compared with patients without MetS (46.9% vs 68.6% according to NCEP-ATPIII criteria; 52.2% vs 67.1% according to the 2007 Chinese guideline criteria, respectively; P<0.001). Similar results were obtained regarding non-HDL-C goal attainment in patients with MetS and those without MetS (51.0% vs 72.0% according to 2007 Chinese Guideline criteria; P<0.001). As the risk class increased, the frequency of LDL-C- and non-HDL-C goal attainment decreased. The most prescribed agent was statin therapy in MetS patients with MetS and those without MetS (84.6% vs 88.7% according to NCEP-ATPIII criteria; 84.6% vs 88.5% according to the 2007 China guideline criteria, respectively; P<0.05). In multivariate logistic regression analysis, male sex, hypertension, diabetes mellitus, coronary heart disease, systolic blood pressure, and fasting plasma glucose were correlated inappropriate LDL-C and non-HDL-C goal attainment. The type of the lipid-lowering agent was not significantly correlated with LDL-C goal attainment but was with non-HDL-C goal attainment.

Conclusions: Goal attainment for both LDL-C and non-HDL-C occurs less frequently in MetS patients than in those without MetS. Combination therapy and the residual risk due to elevated non-HDL-C levels should be considered in MetS patients. Strategies for controlling multiple risk factors in order to decrease the residual risk related to dyslipidemia in MetS patients should be recommended in the future guidelines.

GW25-0522

Relationship between job stress and metabolic syndrome in occupational population

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Objectives: To estimate job stress status and to evaluate its relation with Metabolic syndrome (MetS) in occupational population in Shanghai.

Methods: The present stress scale (NIOSH) including five components was employed to calculate the job stress score according to stress scale reported by Karasek et al. Metabolic syndrome was diagnosed according to the definition of International Diabetes Federation (IDF). Student t-test was used to indicate the difference between two groups. The multiple logistic regression analysis was conducted to explore its relation with MetS.

Results: From June 2011 to February 2012, 2687 participants who were inhabitants of Lujiazui community were recruited and underwent the questionnaire survey. The mean age was 44.49±10.75 years and age of MetS group was older than control group (P<0.05) significantly. The prevalence of MetS was 15.60% in occupational population in Shanghai. The job stress score indicated there were significant differences between MetS group and non-MetS group on job support (P=0.004), job demand (P=0.043), job skill (P=0.001), and job strength (P=0.002). While there was no difference between two groups only on social support (P=0.186). As for the working time, the average working time was 41.70 hours every week in occupational population in Shanghai and it was more than mean value of 38.40 hours in general job population in China. The stress score of MetS group was higher than normal group (t=5.26, P<0.001), and their mean value (SD) were 106.11 (18.58) and 102.84 (18.70), respectively. The OR value (95% CI) were 1.46 (1.07, 2.01), 1.29 (1.01, 1.67) and 1.50 (1.15, 2.02), respectively.

Conclusions: The average working hours (per week) of occupational population in Shanghai was more than that in general population. The components of job stress have stronger relationship with MetS, especially in job control, job demand and job skill.

GW25-4295

Best single predictor of metabolic syndrome via comparing the predicting ability of various anthropometric and atherogenic parameters among Uighur population in Xinjiang

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Objectives: This study aimed to identify the best single predictor of metabolic syndrome (MetS) by comparing the predicting ability of various anthropometric and atherogenic parameters among Uighur population in Xinjiang, northwest of China.

Methods: 4787 Uighur participants were selected from the Cardiovascular Risk Screening (CRS) which was carried out from October 2007 to March 2010. Anthropometric data, blood pressure, serum concentration of serum total cholesterol, triglyc- eride, low density lipoprotein cholesterol (LDL-C), high density lipoprotein cholesterol (HDL-C) and fasting glucose were documented. Prevalence of MetS and its individual components were confirmed according to IDF criteria. Area under the receiver’s operating characteristic curve (AUC) of each variable for the presence of MetS was compared. The sensitivity (Sen), specificity (Spe), distance in the receiver’s operating characteristic curve (ROC) and cutoffs of each variable for the presence of MetS were calculated.

Results: 23.7% of men had the MetS while 40.1% of women had the MetS in Uighur population in Xinjiang, the prevalence of MetS was significantly different between men and women (P<0.001). In men, the WHR had the highest AUC value (AUC=0.838), it was followed by TG/HDL-C (AUC=0.826), BMI (AUC=0.812), WHR (AUC=0.781) and BA (AUC=0.799). In women, the TG/HDL-C had the highest AUC value (AUC=0.815), it was followed by WHR (AUC=0.780), WHR (AUC=0.730), BMI (AUC=0.719) and BA (AUC=0.699). Similarly, among all 5 anthropometric and atherogenic parameters, the WHR had the shortest ROC distance of 0.32 (Sen=85.40%, Spe=71.6%), the optimal cutoff of WHR was 0.85 in men. In women, TG/HDL-C had the shortest ROC distance of 0.35 (Sen=75.29%, Spe=75.18%), the optimal cutoff of TG/HDL-C was 1.22.

Conclusions: WHR was the best predictor of metabolic syndrome in Uighur men while TG/HDL-C was the best predictor of metabolic syndrome in Uighur women.

GW25-4416

Epidcardial adipose tissue thickness in patients with metabolic syndrome: A Systematic Review and Meta-analysis

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Objectives: Many clinical imaging studies demonstrated a strong correlation between epicardial adipose tissue (EAT) and metabolic syndrome (MS) over the past decade. However, inconsistent results regarding this were reported in other studies. In our study we performed a meta-analysis to examine whether the patients with MS have an increased EAT thickness measured by echocardiography when compared with control subjects without MS.

Methods: A literature search was performed through PubMed, Ovidsp, and Web of Knowledge (January 1, 2000 to September 30, 2013). Pooled-weighted mean differences (WMD) and 95% confidence intervals (95% CI) were calculated by using random-effects models. Heterogeneity was assessed by using I2 statistics and the Cochran’s test between studies.

Results: At last, a total of 13 studies about EAT thickness measured by echocardiography were included, which included 956 had MS and 1108 were controls without MS. EAT thickness was more increased in patients with MS than controls without MS, the summary WMD of EAT thickness was 1.37 mm (95% CI 1.09-1.64, P<0.0001). Moderate heterogeneity was detected among the identified groups (Cochran’s Q=42.1 and I2=69.1%). Meta-regression analysis found that waist circumference was a factor for heterogeneity. Egger’s test found no evidence of bias (P=0.087), as did the Begg’s test statistic (P=0.91). Subgroup meta-analysis indicated that the summary WMD of EAT thickness was 1.36mm (95% CI 1.08-1.63, P<0.001) at end-diastole through echocardiography, but the summary WMD of EAT thickness was 1.85mm (95% CI 0.26-3.96, P=0.018) at end-systole. Conclusions: EAT recognized visceral fat is influenced easily by MS. EAT thickness measured by echocardiography become increased in patients with MS. However, the differences exist between end systole and end-diastole.

GW25-6446

Apolipoprotein E gene polymorphism and risk for coronary heart disease in the Chinese population: A meta-analysis of 61 studies including 6634 cases and 6393 controls

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Objectives: Numerous studies have evaluated the association between the apolipoprotein E (apoE) gene polymorphisms in coronary heart disease (CHD). However, the results remain uncertain. We carried out a meta-analysis to derive a more comprehensive estimation of the association in Chinese population.

Methods: Case-control studies in Chinese and English publications were identified by searching databases of PubMed, EMBASE, Web of Science, CNKI, CBM, Wanfang, VIP and hand searching of relevant journals and the reference lists of retrieved articles. Odds ratio (OR) and 95% confidence interval (CI) were applied to assess the strength of the associations. Subgroup analysis and sensitivity analysis were performed to explore the between-study heterogeneity.

Results: We finally identified 61 relevant studies which comprised 6634 case-patients and 6393 controls. The pooled OR for ε4 carriers was 96% higher than the ε3/3 genotype for CHD (OR, 1.96; 95% CI 1.70-2.24; P<0.001). However, there was no evidence of statistically significant association between ε2 carriers and risk of CHD (OR, 1.02; 95% CI 0.91-1.13; P=0.729). In the subgroup analysis, different endpoints may partially account for the heterogeneity. No publication bias was found.

Conclusions: Our meta-analysis suggests that the apoE ε4 allele may be a risk factor for CHD in the Chinese population, however, ε2 allele has no significant association.

GW25-e1413
Early detection of regional and global left ventricular myocardial function using strain and strain rate imaging evaluation longitudinal strain in patients with Metabolic syndrome

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Objectives: Strain and strain rate imaging (SRI) has been found clinically useful in the assessment of cardiac systolic and diastolic function as well as providing new insights into cardiac physiology and mechanics in cardiomypathies, and identifying early subclinical changes in various pathologies. The aim of this study was to evaluate the regional and global left ventricular myocardial function in metabolic syndrome with SRI so that we can provide more myocardial small lesions in patients with MS, which is robust and reliable basis for early detection of LV dysfunction.

Methods: 39 consecutive adults with metabolic syndrome were enrolled in the study. There was a control group of 36 healthy adults. In addition to classic echocardiographic assessment of LV global functional changes, SRI was used to evaluate regional and global left ventricular function. Including: peak systolic strain, peak systolic strain rate, peak diastolic strain rate, peak diastolic strain rate.

Results: There were no statistically significant differences between MS and controls in all traditional parameters of left ventricular structural and systolic function. On the other hand, significant differences were observed between MS and the control group in most of the parameters of peak systolic strain (~22.00 vs -27.42±6.11, P<0.000), peak systolic strain rate (~1.37±0.39 vs -2.26±1.16, P<0.000), peak diastolic strain rate (1.73±0.68 vs 3.04±1.11, P<0.000; 1.88±0.95 vs 1.90±0.80, P<0.005) in regional left ventricular function. There was no significant difference in left ventricle (LV) systolic functions measured by conventional echocardiography between MS and controls. However, there was significant decrease in LV regional function detected by SRI in MS than controls. Multiple stepwise regression analyses revealed that S and SR significantly were negatively correlated with BP (~0.402, P=0.002; ~0.515, P<0.000), W. Circum (~0.501, P<0.000; ~0.556, P<0.000), FPG (~0.375, P=0.005; ~0.345, P=0.001), UA (~0.375, P=0.005; ~0.345, P=0.001), suggesting that risk factors were relevant to regional systolic dysfunction.

Conclusions: In ms patients with normal LV ejection fraction (LVEF), risk factors contributed to the impairment of systolic and diastolic function of the regional myocardium. The early identification of metabolic syndrome by strain and strain rate may be an indication that aggressive preventive measures should not be postponed until left ventricular regional function has developed. Especially early left ventricular regional systolic dysfunction, have to date been sparsely investigated. We present the first demonstration that metabolic syndrome is independently associated with LV systolic dysfunction. These findings suggest that assessment of myocardial function using SRI could be more accurate in MS patient evaluation than conventional echo-cardiography alone.

GW25-e1463
Relationship of hyperuricemia and sleep apnea hypopnea syndrome in aged patients

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Objectives: Numerous studies have evaluated the association between the apolipoprotein E (apoE) gene polymorphisms in coronary heart disease (CHD). However, the results remain uncertain. We carried out a meta-analysis to derive a more comprehensive estimation of the association in Chinese population.

Methods: Case-control studies in Chinese and English publications were identified by searching databases of PubMed, EMBASE, Web of Science, CNKI, CBM, Wanfang, VIP and hand searching of relevant journals and the reference lists of retrieved articles. Odds ratio (OR) and 95% confidence interval (CI) were applied to assess the strength of the associations. Subgroup analysis and sensitivity analysis were performed to explore the between-study heterogeneity.

Results: We finally identified 61 relevant studies which comprised 6634 case-patients and 6393 controls. The pooled OR for ε4 carriers was 96% higher than the ε3/3 genotype for CHD (OR, 1.96; 95% CI 1.70-2.24; P<0.001). However, there was no evidence of statistically significant association between ε2 carriers and risk of CHD (OR, 1.02; 95% CI 0.91-1.13; P=0.729). In the subgroup analysis, different endpoints may partially account for the heterogeneity. No publication bias was found.

Conclusions: Our meta-analysis suggests that the apoE ε4 allele may be a risk factor for CHD in the Chinese population, however, ε2 allele has no significant association.

GW25-e2305
Best predictor of metabolic syndrome by the predicting ability comparison of various anthropometric and atherogenic parameters among Kazakh population in Xinjiang

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Objectives: The present study aimed to investigate the best single predictor of metabolic syndrome (MetS) according to comparing predicting ability of various anthropometric and atherogenic parameters among Kazakh population in Xinjiang, northwest of China.

Methods: 4094 Kazakh participants were recruited from the Cardiovascular Risk Survey (CRS) which was carried out from October 2007 to March 2010. Anthropometric data, blood pressure, concentrations of serum total cholesterol (TC), triglyceride (TG), low density lipoprotein cholesterol (LDL-C), high density lipoprotein cholesterol (HDL-C) and fasting plasma glucose (FPG) were documented. Prevalence of MetS and its individual components were confirmed according to IDF criteria. Area under the receiver’s operating characteristic curve (AUC) of each variable for the presence of MetS was compared. The sensitivity (Sen), specificity (Spe), shortest distance in the receiver’s operating characteristic curve (ROC) and cutoffs of each variable for the diagnosis of MetS were calculated.

Conclusions: 56.6% of men had the MetS and 31.0% of women had the MetS in Kazakh population in Xinjiang. In men, the WHR had the highest AUC value (AUC=0.821), it was followed by BMI (AUC=0.801), TG/HDL-C (AUC=0.792), WHR (AUC=0.776) and BAIF (AUC=0.666). In women, the WHR also had the highest AUC value (AUC=0.835), it was followed by BMI (AUC=0.789), WHR (AUC=0.778) and TG/HDL-C (AUC=0.728) with the optimal cutoff of WHR was 0.47 in men and 0.44 in women. The WHR also had the highest ROC distance of 0.35 (Sen=81.09%, Spe=68.50%), the optimal cutoff for WHR was 0.55 in men. In women, WHR also had the shortest ROC distance of 0.35 (Sen=84.59%, Spe=70.89%), the optimal cutoff for WHR was 0.55 in women. The UA/Cr had the highest AUC value (AUC=0.821), it was followed by BMI (AUC=0.801), TG/HDL-C (AUC=0.792), WHR (AUC=0.776) and BAIF (AUC=0.666). In women, the WHR also had the highest AUC value (AUC=0.835), it was followed by BMI (AUC=0.789), WHR (AUC=0.778) and TG/HDL-C (AUC=0.728) with the optimal cutoff of WHR was 0.47 in men and 0.44 in women. The WHR also had the highest ROC distance of 0.35 (Sen=81.09%, Spe=68.50%), the optimal cutoff for WHR was 0.55 in men. In women, WHR also had the shortest ROC distance of 0.35 (Sen=84.59%, Spe=70.89%), the optimal cutoff for WHR was 0.55 in women.

GW25-e0094
Value of Arterial Stiffness in Predicting Risk of Adverse Cardiac Events

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Objectives: To investigate the predictive value of arterial stiffness index estimation for adverse cardiac events.

Methods: A total of 198 patients with risk factors of coronary artery disease (CAD) underwent two noninvasive tests of arterial stiffness at least two times in 5 years, including pulse wave analysis (PWA) and carotid ultrasonography, and were divided into increased arterial stiffness (IAS) group (n=87) and control group (n=111), by central pulse pressure higher than 45 mmHg or not during follow-up. Adverse cardiac