following for the incidence of AH and MI. Cox proportional regression model was used for assessment of relative risk (HR) of AH, MI.

**Results:** Low levels of ICC and SNI were revealed in 57.1% and 77.7% of women, respectively. MI was developed in 2.7% of women, AH in 51%. HR of MI over 16 years of study were in 4.9-fold (95% CI 1.108-21.762; P<0.05) and 2.9-fold (95% CI 1.049-8.200; P<0.05) higher for low ICC and SNI, respectively compared those with higher levels of SS, HR of AH over 5 years was 2.01 (95% CI 1.025-3.938; P=0.05) for low ICC whereas no statistical differences were for low SNI. AH risk in women with low ICC and low SNI within 10 years after the baseline was 1.93 (95% CI 1.138-3.261; P<0.05) and 1.88 (95% CI 1.090-3.255; P<0.05), respectively, over 16 years HR was 1.42 (95% CI 1.138-3.261; P<0.05) and 1.88 (95% CI 1.110-2.724; P<0.01), respectively. There was a tendency of increasing AH and MI incidence rate in married women with low indices ICC, SNI compared to those with higher levels of social support. Those women with higher and vocational education with low SS more likely to have a higher MI rate. Rates of AH were significantly higher in easy physical worker with low SS compared to engineers with low SNI (χ2=4.43; df=1; P<0.05).

There was found a tendency of an increase of AH and MI development in category “executives” and “first-line managers”.

**Conclusions:** The prevalence of low SS in women aged 25-64 in Russia is high. Over 16 years of study women with low ICC and SNI have significantly higher risk of MI and AH, especially in those married once occupied in manual class and managers.

**GW25-e1137**

**Association between Homa Index and Vascular Endothelial Dysfunction in type 2 Diabetic Patients**

Ramakumari1, Bhaskara Raju2, Aruna Devi2

| Nizams Institute of Medical Sciences,2Gandhi Medical College

**Objectives:** In recent years, flow mediated dilatation (FMD) has become a popular technique in cardiovascular medicine and clinical physiology, as evidence has occurred that depressed FMD is an independent prognostic index of incident and recurrent cardiovascular events which adds predictive value to the established risk factors. Insulin Resistance (IR) is defined as a disorder of insulin mediated glucose release. HOMA-IR which was accepted to determine the insulin sensitivity as a valuable standard. In this study, we evaluated the association between HOMA-IR (homeostasis model assessment ratio of insulin resistance) and vascular endothelial dysfunction, as assessed by endothelium-dependent flow-mediated dilatation (FMD) and nitroglycerin-mediated dilatation (NMD), in type 2 Diabetic (DM) patients.

**Methods:** Study Patients: Eighty four (84) consecutive out-patients from the Department of Cardiology were enrolled. Homeostasis model assessment ratio of insulin resistance (HOMA-IR) which was calculated as fasting insulin (µIU/ml) multiplied by fasting plasma glucose (FPG) (mg/dl) and divided by 405. The ultrasound method for measuring endothelium dependent and endothelium independent arterial dilatation has been used as described previously.

**Results:** The clinical characteristics were summarized in Table 1. Out of 84 patients, 42 patients were in control group and 42 patients were in diabetic group respectively. MI developed in 2.7% of women, AH in 51%. HR of MI over 16 years of study were in 4.9-fold (95% CI 1.108-21.762; P<0.05) and 2.9-fold (95% CI 1.049-8.200; P<0.05) higher for low ICC and SNI, respectively compared those with higher levels of SS, HR of AH over 5 years was 2.01 (95% CI 1.025-3.938; P=0.05) for low ICC whereas no statistical differences were for low SNI. AH risk in women with low ICC and low SNI within 10 years after the baseline was 1.93 (95% CI 1.138-3.261; P<0.05) and 1.88 (95% CI 1.090-3.255; P<0.05), respectively, over 16 years HR was 1.42 (95% CI 1.138-3.261; P<0.05) and 1.88 (95% CI 1.110-2.724; P<0.01), respectively. There was a tendency of increasing AH and MI incidence rate in married women with low indices ICC, SNI compared to those with higher levels of social support. Those women with higher and vocational education with low SS more likely to have a higher MI rate. Rates of AH were significantly higher in easy physical worker with low SS compared to engineers with low SNI (χ2=4.43; df=1; P<0.05).

There was found a tendency of an increase of AH and MI development in category “executives” and “first-line managers”.

**Conclusions:** The prevalence of low SS in women aged 25-64 in Russia is high. Over 16 years of study women with low ICC and SNI have significantly higher risk of MI and AH, especially in those married once occupied in manual class and managers.

**GW25-e1150**

**Association between hypertension and sleep disturbance in general Chinese population: a cross-section survey**

La Kai1, Hu Dayi2,3,4

1Department of Cardiology, the First Affiliated Hospital of Chongqing Medical University,2Heart Center, Peking University People’s Hospital

**Objectives:** To investigate the potential association between the prevalence of hypertension and sleep disturbance in general Chinese population.

**Methods:** A cross-section survey on the prevalence of cardiovascular risk factors among Chinese adults was conducted from September to December 2013 in two cities of North China, Beijing and Tangshan. In this study, hypertension was defined as systolic blood pressure (SBP)>140mmHg and (or) diastolic blood pressure (DBP) >90mmHg or medication for previously diagnosed hypertension. Sleep profiles of included subjects were assessed using the Pittsburgh Sleep Quality Index (PSQI). Sleep quality was qualified by the total PSQI score. Sleep duration was calculated from No. 1, 2 and 3 items of Incidence of snore was categorized into “often” and “never or seldom” according to whether the frequency of snore is above 3/day (item5e). Work shift of every subject was also recorded which was classified into “regular dayshift” “occasional nightshift” and “regular work by turns”. Besides demographic and behavior information including age, gender, physical activity and smoking, the following risk factors such as body mass index (BMI), waist circumstance (WC), total triglyceride (TG) and total cholesterol (TC), low-density lipoprotein cholesterol (LDL-C) and high-density lipoprotein cholesterol (HDL-C) and fasting blood glucose (FBG) were also measured. Sleep quality, sleep time, incidence of often snore as well as work shift were compared between subjects with or without hypertension and their contributions to the prevalence of hypertension were explored using the multiple logistic regression analysis. **Results:** A total of 5462 subjects were included in this study and the overall prevalence of hypertension was 27.2% among them. The hypertensive population had a poor sleep quality (4.26±3.17 vs 3.55±2.90; P<0.05), shorter sleep duration (6.74±1.20h vs 6.98±1.48h, P<0.05) and higher incidence of often snore (22.1% vs 11.5%; P<0.05) compared with the population with normal BP. After adjusting age, gender, family history, smoking, physical activity, TC, TG, WC and BMI, the multiple logistic analysis showed that poor sleep quality, sleep duration, often snore during sleep as well as regular work by turns was significantly correlated with the incidence of hypertension among Chinese adults and the corresponding odd ratio (OR) for them was 1.81 (1.44-2.29; P<0.05), 0.82 (0.77-0.87; P<0.05), 2.32 (1.91-2.81) and 1.09 (1.88-2.50; P<0.05), respectively.

**Conclusions:** This study demonstrated that sleep quality, sleep duration, often snore during sleep and regular shift work were all associated with prevalence of hypertension. Special attention should be paid to the hypertension risk for patients with sleep disturbance and regular shift workers.

**GW25-e2125**

**Gender Difference of Effects for ‘Empty-Nest’ on the Cognition and Its Risk Factors in Healthy China Population above 60 Years Old**

Han Lulu1, Yu Kai1, Jin Bo1, Han Wen1, Chen Xiangmei2, Bai Xiaojuan2

1Shengjing affiliated Hospital of China Medical University,2General Hospital of Chinese PLA

**Objectives:** The aim of this study was to estimate the differences of cognition and risk factors of cognition decline between empty nest and non-empty nest elderly in healthy China population.

**Methods:** In cross-sectional study, we examined 475 healthy elderly (aged 60 - 91 years) living free from chronic disease and diabetes mellitus. Participants were categorized into non-empty nest and empty nest group. The Mini-Mental State Examination (MMSE) was performed as a assessment of cognition. Carotid intima-media thickness (CIMT) was analyzed using M-mode ultrasonography.
GW25-e2128

The changes of bone mineral density and atherosclerosis indexes with aging and estrogen levels in healthy women

Bai Xiaojun1, Zhao Xin1, Liang Dongke2, Han Lulu1, Yu Kai2, Jin Bo3, Chen Xianguan3

1Shengjing Affiliated Hospital of China Medical University, 2First Affiliated Hospital of China Medical University, 3General Hospital of Chinese PLA

Objectives: Both the age and estrogen levels are risk factors of osteoporosis and atherosclerosis-related disease belong to the ordinary diseases of elderly in women. The aim of this study was to observe the changes of bone mineral density (BMD) and subclinically atherosclerosis indexes with the increase of age in women and the level of estrogen in postmenopausal women in healthy population in China.

Methods: A total of 229 qualified healthy women who were screened from 1500 participants from fifteen communities in Shenyang between September 2007 and June 2008 were followed up in 2011 for their BMD, ankle-brachial index (ABI), pulse wave velocity (PWV), and carotid intima-media thickness (CIMT). The women were assigned into four groups according to ages and another four groups according to menopause. The estrogen were detected in 159 postmenopausal women and compared with BMD, ABI, PWV and CIMT.

Results: There were significant differences in total hip BMD among the women from different age groups and among those with menopause or not (P<0.01). There were significant differences found in lumbar spine BMD among women younger than 70 years and among those with menopause shorter than 20 years (P<0.01). There were significant differences in PWV among different age groups and the groups with menopause or not (P<0.01). In women the lumbar BMD (r=-0.587, P<0.001) and total hip BMD (r=-0.575, P<0.001) were significantly correlated with age. In the postmenopausal women, the subclinical atherosclerosis index PWV (r=-0.250, P<0.01) and CIMT (r=0.174, P=0.028) were significantly correlated with the level of estrogen. The lumbar BMD (r=-0.571, P<0.001) and total hip BMD (r=0.457, P<0.001) were significantly correlated with the level of estrogen.

Conclusions: The level of BMD and subclinical atherosclerosis index are related to the age. Furthermore, these indicators are also closely related to the level of estrogen in postmenopausal women.

GW25-e2304

Optimal waist to height ratio cutoffs for hypertension, diabetes, and dyslipidemia for the Han and Uighur adults in China

He Chunhui1,2, Ma Yitong1,2

1Department of Cardiology, First Affiliated Hospital of Xinjiang Medical University, 2Urumqi, People’s Republic of China, 3Xinjiang Key Laboratory of Cardiobvascular Disease Research, Urumqi, People’s Republic of China

Objectives: Optimal cutoffs for obesity indices are rarely studied in Asians. We evaluated these cutoffs for diabetes, hypertension, dyslipidemia and any risk factor for the Chinese Han and Uighur general population in Xinjiang Uighur Autonomous Region. We aimed to identify cutoffs for waist to height ratio (WHHR; in cm/cm) for categorization of obesity among Han and Uighur adults in Xinjiang.

Methods: In the multicenter study, 10200 Han and Uighur participants were selected from the Cardiovascular Risk Survey (CRS) which was carried out from Oct. 2007 to Mar. 2010. The age of the participants were from 35 to 101 years old with the mean age of 52.47 years in Han and 50.70 years in Uighur. Anthropometric data, blood pressure, serum total cholesterol, triglyceride, low density lipoprotein (LDL), high density lipoprotein (HDL), and fasting glucose were documented. The prevalence, sensitivity, specificity and distance on the receiver operating characteristic (ROC) curve of each WHHR values were calculated.

Results: The prevalence of hypertension and diabetes for Han and Uighur adults in Xinjiang were different and the prevalence of diabetes appeared to be higher with WHHR in Uighur population. The highest short distance in the receiver operating characteristic curves for hypertension, dyslipidemia, diabetes, or > 2 of these risk factors suggested a WHHR cutoff of 0.54 for both men and women in Han population and 0.55 in men and 0.57 in women among Uighur population.

Conclusions: The optimal WHHR cutoffs for hyperglycemia, hypertension and dyslipidemia for the Han population were 0.54, while higher cutoffs for WHHR were needed in the identification of Uighur patients at high risk of cardiovascular disease.

GW25-e3075

Ethnic Differences in the Prevalence of Major Cardiovascular Risk Factors and Cardiovascular Diseases among Uygur, Han and Kazakh populations of Xinjiang: A Cross-Sectional Study

Jing Tao1,2, Ma Yitong1,2

1Department of Cardiology, First Affiliated Hospital of Xinjiang Medical University, Urumqi, People’s Republic of China, 2Xinjiang Key Laboratory of Cardiovascular Disease Research, Urumqi, People’s Republic of China

Objectives: To describe prevalence of major CVD risk factors (hypercholesterolemia, hypertension, obesity, diabetes, and smoking) and CVD (coronary heart disease [CHD] and stroke) among these different ethnicities in Xinjiang. And assess cross-ethnic associations of CVD risk factors with CVD among these ethnic groups respectively.

Methods: Multicenter, population-based Cardiovascular Risk Survey study in Xinjiang including individuals of Uygur (n=4104), Han (n=4852), Kazak (n=3554) aged 18 to 74 years. Analyses involved 12510 participants with complete data enrolled between October 2007 and March 2010.

Results: Age-standardized prevalence of CVD risk factors varied among different ethnicities (all P<0.001); hypertension and obesity rates were highest among Kazak participants (for men, 58% and 24%; for women, 49% and 22%, respectively); hypercholesterolemia prevalence was highest among Han men (62%) and Uygur women (58%); smoking rate was highest among Han men (64%) and Kazak women (16%); diabetes prevalence among three ethnic men and women were all less than 10%. In Han, self-reported CHD and stroke prevalence was low (3.9% and 4.1% in men; 2.2% and 3.8% in women, respectively) and also varied among three ethnicities (P<0.001). In multivariate-adjusted models, hypertension and diabetes were directly associated with CHD (odds ratios [ORs], 1.8 and 2.1) and stroke (ORs, 1.9 and 4.7) in Han participants. In Kazak, hypertension and smoking contributed to the risk for CHD (ORs, 1.8 and 1.9), but only hypertension for stroke (ORs, 9.4). In Uygur, hypertension and hypercholesterolemia were directly associated with both CHD (ORs, 1.4 and 1.7) and stroke (ORs, 2.5 and 2.7).

Conclusions: Ethnic groups living in Xinjiang had striking differences in prevalence of major CVD risk factors and CVD. Significantly, the contributions of major risk factors to CVD were also different in ethnic groups. Ethnic-specific strategies should be developed to prevent CVD in different ethnic groups.

GW25-e3354

Prehypertension increased the Risk of Coronary Heart Disease: A Meta-analysis

Huang Yuli1, Cai Xiaojuan2, Zhu Dingji1, Liu Changhua1, Hu Yanzhao1, Xu Dingli1, Nanfang Hospital, Southern Medical University, Guangzhou, PR China, 2The First People’s Hospital of Shunde, Foshan, PR China

Objectives: We had reported that prehypertension [blood pressure (BP) 120-139/80-89 mmHg] was associated with composite cardiovascular disease (CVD) and stroke risk. However, the effects of abnormal BP on coronary and cerebral arteries are not identified in coronary heart disease (CHD) associated with prehypertension is controversial. This meta-analysis sought to evaluate the risk of CHD associated with prehypertension, as well as its different subgroups.

Methods: The PubMed, EMBASE, and Cochrane Library databases and conference proceedings were searched for prospective cohort studies with data on prehypertension and risk of CHD. Two independent reviewers assessed the reports and extracted data. Prospective studies were included if they reported multivariate-adjusted relative risks (RRs) with 95% confidence interval (CIs) for the associations between CHD and prehypertension, or its two sub-ranges (low range prehypertension: 120-129/80-84 mmHg; high range prehypertension: 130-139/85-89 mmHg). We conducted subgroup analyses according to BP ranges, CHD endpoint, age, sex, ethnicity, and study characteristics.

Results: Pooled data included the results with 561,664 participants from 17 prospective cohort studies. Prehypertension increased the risk of CHD (RR=1.43, 95% CI 1.26-1.63, P<0.001) compared with optimal BP (<120/80 mmHg). In the subgroup analyses, even low range prehypertension increased the risk of CHD (RR=1.27, 95% CI 1.07-1.50, P=0.007), and the risk tended to increase for high range prehypertension (RR=1.58, 95% CI 1.24-2.02, P<0.001). The difference between low range and high range prehypertension was not significant (P=0.15).

Conclusions: After adjusting for multiple cardiovascular risk factors, prehypertension is associated with increased risk of CHD. The risk is also increased in people with low range prehypertension.

GW25-e3364

MTHFR C677T gene mutation affect the level of plasma homocysteine but do not related to early renal damage in patients with diabetes

Yun Lin2,1, Xu Rui1, Li Guohua1, Yao Yucai1, Li Jiamin1, Yan Suhua1

1Department of Cardiology, Qufu Foshan Hospital of Shandong Province, Shandong University, P.R.China, 2Shandong Academy of Medical Sciences, Jinan, P.R.China

Objectives: To investigate the possibility that the C677T polymorphism of methyltetrahydrofolate reductase (MTHFR) gene may be an independent risk factor for