primary outcome is the detection rate of atrial fibrillation between the usual and intensive screening groups. Sample size estimation was based on a projected detection rate of atrial fibrillation of 2.0% by a single ECG recording at 12 months, an improvement of 50% with more frequent ECG recordings, a=0.05, power=80% and one-sided test.

RESULTS The outcome measure is the detection rate of atrial fibrillation in the usual and intensive screening groups. The primary comparison is between the usual and intensive screening groups. The hypothesis is that the detection rate of atrial fibrillation would be 50% higher in the intensive than usual screening groups. An exploratory comparison is between the intensive (ECG recordings quarterly) and more intensive (quarterly plus weekly in the first month after randomization) screening subgroups within the intensive group.

CONCLUSIONS The trial will provide evidence on the clinical effectiveness of more frequent ECG recordings by a handheld automated analysis system in the detection of atrial fibrillation. If proved effective, intensive screening by more frequent ECG recordings might have to be considered in people at high risk of atrial fibrillation. If not, for instance, for inadequate power of the trial, an extended follow-up with an even more intensive screening approach may be considered to increase the detection rate of atrial fibrillation.

GW28-e0872

Clinical relevance of different handgrip strength indexes and cardiovascular disease risk factors: a cross-sectional study in suburb-dwelling elderly Chinese

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OBJECTIVES Reduced muscle strength, as measured by handgrip strength (HS), has been associated with an increased risk of cardiovascular disease (CVD). The aim of this study was to examine the association between different HS indexes and CVD risk factors in elderly Chinese individuals. We also determine optimal cutoffs of HS indexes for predicting CVD risk factors.

METHODS Data were obtained from 603 men and 789 women aged $\geq$ 60 years (average age 66.8±6.4y). These study participants were recruited in the suburb area of Tianjin, China. An individual was considered a patient when they exhibited any one of three CVD risk factors: diabetes mellitus, hypertension and dyslipidemia. All participants were interviewed face-to-face. In addition, serum samples were collected from all participants, and all participants underwent measures of anthropometry and HS.

RESULTS The optimal cutoffs were 0.376 of HS/weight in men and 0.726 of HS/ body fat mass in women for predicting diabetes mellitus. The adjusted odds ratios (ORs) of at least one CVD risk factor for those with low muscle strength identified by HS/body fat mass were 2.14 (95% confidence interval [CI] : 1.53, 3.44; $p<0.001$) in men and 2.32 (95% CI: 1.60, 3.29; $p<0.001$) in women.

CONCLUSIONS HS/body fat mass appear to be the index best associated with CVD risk factors except diabetes mellitus in men. The optimal cutoffs of HS indexes have the potential to identify elderly adults at risk of CVD.

GW28-e0905

Plasma HDL-C Responses to Endurance Exercise Training: Is It a "wonder" Drug? A Meta-analysis of Randomized Controlled Trials

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OBJECTIVES Evidence is lacking for the exercise characteristics in increasing HDL-C level regardless of endurance exercise elevating HDL-C level. The aim of this study is to clarify the effect and characteristics of exercise in increasing HDL-C in randomized control trials (RCTs).

METHODS The potential RCTs were identified by using electronic and manual searches between 1999 and 2012. The original articles selected for all prospective studies that assessed potential associations between endurance exercise training and changing level of HDL in adults ($\geq$18 years of age at baseline) but excluded subjects having specific medical problems in which treatments such as with drugs would influence the effect of exercise (history of cancer, hemodialysis treatment and coronary heart disease). The methodological quality of each included trial was assessed by means of the instrument described by Jadad et.al. Results were expressed as WMD (weighed mean difference) and 95% confidence intervals (CIs). A univariate regression and a multivariate regression were performed to evaluate the exercise characteristics in HDL-C level. Subgroup analysis was used to explore sources of heterogeneity. Meta regression was used to examine the association between net change in HDL-C and lipid profiles of pre-exercise. Data were analyzed using Stata SE (12.0).

RESULTS 14 RCTs with total 777 subjects were included in this meta-analysis. Net change in HDL-C level was increased significantly (WMD: 4.41 mg/dl; 95% CI: 2.16- 6.66 mg/dl; P<0.001) in exercise intervention group. Univariate and multivariate analysis indicated that exercise length may be a good predictor of net change in HDL-C level (r=0.56, p=0.01 and r=0.43, p=0.006). By subgroup analysis, we found exercise length; subject's characteristics, continent, BMI and quality assessment effected the net change in HDL-C. Meta-regression showed that subjects with a lower TC level responded better to exercise training, leading to a higher net change of HDL-C level (p=0.012).

CONCLUSIONS Our study suggests that regular endurance exercise increases HDL-C level with longer exercise length and lower TC level. Higher HDL-C level by endurance exercise results in limiting risk for atherosclerosis and prevent cardiovascular disease in healthy as well as in metabolic syndrome.

GW28-e0929

EFFECTS OF COMPREHENSIVE LIFESTYLE INTERVENTION ON CARDIOVASCULAR HEALTH BEHAVIORS AND FACTORS IN MALE WORKERS IN KAILUAN COMMUNITY

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OBJECTIVES To observe the status of ideal cardiovascular behaviors and factors in male workers in Kailuan community. To investigate the effects of health education and comprehensive lifestyle intervention on cardiovascular health behaviors and factors in male workers.

METHODS Randomly selected Tang Shan Kuang and Fan Ge Zhuang to participate in this study. To complete the first questionnaire survey (including birth date, marital status, telephone number, cultural level, monthly economic income, personal health information, history of hypertension, history of diabetes) and anthropometric measurements (including height, weight, blood pressure) and biochemical indicators collection(including fasting blood glucose, total cholesterol, triglycerides, high density lipoprotein, low density lipoprotein) from July 2013 to August 2013. Health education and multiple lifestyle interventions were conducted in the intervention community for 2 years from September 2013. To analyze the changes of cardiovascular health behaviors (smoking status, body mass index, physical exercise and healthy diet) and factors (total cholesterol, blood pressure and fasting blood glucose) in community male workers after intervention.

RESULTS In 2013, 1738 male workers participated in the survey and 1677 cases were included in the statistical analysis at the end of 2015.

(1) After intervention, the dietary habits, physical exercise, blood pressure and total cholesterol were improved, and the difference was statistically significant (P <0.01). There was no significant difference in smoking, body mass index and fasting blood glucose.

(2) The systolic blood pressure decreased from (140.75 ± 18.20) mmHg to (128.98 ± 15.27) mmHg and diastolic blood pressure decreased from (87.96±10.64)mmHg to (83.58±9.18)mmHg. The total cholesterol was decreased from (5.41 ± 2.72) mmol / L to (4.74 ± 1.06) mmol / L and the high-density lipoprotein cholesterol increased from (1.37 ± 0.35) mmol / L to (1.54 ± 0.41) mmol/L and low-density lipoprotein decreased from (3.29 ± 0.81) mmol / L to (2.38 ± 0.88) mmol / L. The difference was all statistically significant (P <0.01).

(3) The total number of ideal cardiovascular health behaviors and factors were increased from (2.58±1.11) to (3.01±1.09) in the male

population after comprehensive intervention, and there was significant difference between the two groups (P <0.01);

(4) The average cardiovascular health score increased from (7.15±2.11) to (8.16±2.00) after the intervention, and there were significant differences between before and after the intervention (P <0.01).

CONCLUSIONS The prevalence of ideal cardiovascular behaviors and factors of male workers in Kailuan community was low. Comprehensive lifestyle intervention could improve the cardiovascular health behaviors and factors.

GW28-e0933

Heart Rate and Heart Rate Variability Change While Falling Asleep During Driving a Car

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OBJECTIVES Heart rate (HR) decreases and heart rate variability (HRV) increases during sleeping. However it is not investigated how they change during falling asleep while driving a car. This is basic study for developing heart rate monitoring system inside a car for preventing falling asleep while driving a car.

METHODS Healthy volunteers are monitored with 24hour holter monitoring systems for HR and HRV starting 8AM to 11AM for 24hours. They are instructed to push the button if they feel sleepy or arrhythmia while driving a car. If the volunteers cannot help sleeping while driving a car, they are ought to change seat with person at passenger seat and feel free to sleeping at the passenger's seat while sleeping.

RESULTS Four healthy volunteers who are planning to drive a long journey were enrolled. They are all male and 40.2 years old of mean age. Their mean driving time is 5 hours majorly at express way. They felt sleepy 2±1 hours after starting driving and the mean duration of falling asleep time is 17±4minutes. While driving their mean heart rate was 86±5 beats/min and this decreases by 15±5% while they feel sleepy. HRV increased by 10% 0.16Hz to 0.18Hz while they are falling asleep. One volunteer change the seat from driver's to passengers when he cannot help sleeping, the HR and HRV changed much more from 89 beats/min to 65 beats/min and from 0.09 Hz to 0.23Hz. When they slept at night the HR decreased from 86 beats/min to 75 beats/min by 12.8% and HRV increased from 0.1Hz to 0.25Hz.

CONCLUSIONS This pilot study the first time demonstrated the HR decreased and HRV increased while feeling sleepy while driving a car. HR decreased significantly when the driver slept at the passenger's seat at the car as well as sleeping at night.

GW28-e1102

Magnetic resonance markers of bilateral neuronal metabolic dysfunction in patients with unilateral internal carotid artery occlusion

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OBJECTIVES To evaluate cerebral hemodynamic, metabolic and anatomic changes occurring in patients with unilateral occlusion of internal carotid artery.

METHODS Twenty two patients with unilateral occlusion of ICA and twenty eight age and sex matched healthy subjects were included in the study. In both groups we performed proton magnetic resonance spectroscopy (1 H-MRS), semi-automated hippocampal volumetry in T1-weighted scans and transcranial Doppler examination (TCD) with calculation of Breath Holding Index (BHI). Metabolic, anatomic, and hemodynamic features were compared between the two groups.

RESULTS The N-acetylaspartate(NAA)/choline(Cho) ratio was significantly lower in both hemispheres of enrolled patients compared with controls, while no statistically significant correlations were found for

lactate (Lac), creatine (Cr) and Cho alone. The volume of hippocampus was significantly reduced on both sides in patients in comparison with healthy subjects. No statistically significant differences in NAA concentration and hippocampal volume were found between the two hemispheres of examined patients, thus suggesting a bilateral impairment.

CONCLUSIONS Patients with unilateral ICA occlusion have reduced NAA/Cho ratio in the white matter of both hemispheres and have bilateral atrophy of hippocampus. The alteration of hemodynamics alone cannot explain these changes. Lac is not a reliable marker of metabolic impairment in the chronic stage of ICA occlusion. The work has been supported by AZV 16-30965A grant.

LIPID RESEARCH

GW28-e0051

Effects of APOA1 and APOB100 on Progression of Coronary Artery Lesion

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OBJECTIVES The retrospective study was designed to analyze the dynamic relationship between the Apolipoprotein A1,B100 and the progression of coronary artery lesion.

METHODS Patients who underwent the second coronary angiography or coronary 320-slice CTA at a minimum review interval of 6 months after their first examinations in the Third Affiliated Hospital of Sun Yat-sen University from 2010 to 2015 (n=245) ,were divided into non progress group(n=114) and progress group(n=131). We compared the differences of clinical and Biochemical data between two groups, and tried to find out the relationship by Logistic Regression analysis.

RESULTS The baseline levels of APOA1(1.33±0.29 vs 1.24±0.25, P=0.015), APOA1/AOPB100(1.56±0.65 vs 1.38±0.44, P=0.014)in non progress group were higher than those in progression group. The baseline levels of APOB100 were similar in both groups. The follow-up levels of APOA1 were higher than the baseline levels in both groups, the variation was significant in progression group(1.24±0.25 vs 1.31±0.28, P=0.006). The levels of APOA1 and APOA1/APOB100 were correlated with progression of coronary artery lesion negatively in single-variate logistic regression analysis. The level of APOA1(OR=0.245, P=0.005) was correlated with progression of coronary artery lesion negatively in multivariate logistic regression analysis.

CONCLUSIONS APOA1 may have the effect of delaying the progression of coronary artery lesion, and may predict the progression of coronary artery lesion.

GW28-e0393

Association between circulating oxidized low-density lipoprotein and atherosclerotic cardiovascular disease: a meta-analysis of prospective observational studies

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OBJECTIVES Although basic research has suggested that oxidized low-density lipoprotein (ox-LDL) is involved in the pathogenesis of atherosclerosis, population observational studies have yielded conflicting results about the association between circulating ox-LDL and atherosclerotic cardiovascular disease (ASCVD). Therefore, we performed a systematic review and meta-analysis of currently available prospective observational studies to verify the association between circulating ox-LDL and ASCVD.

METHODS We systematically searched PubMed and the Cochrane Library from their inception to April 27, 2017, for nested case-control studies, case-cohort studies, and prospective cohort studies on the relationship between ox-LDL and ASCVD. Studies which did not assess the hazard ratio, relative risk, or odds ratio of ox-LDL or which did not adjust for other risk factors were excluded. The summarized effect size was combined using fixed-effect models