19 to 82 years). According to recorded symptom durations, patients with APE were stratified into 4 subgroups: <1 day, 1 to 3 days, 3 to 7 days and ≥7 days. Every subject underwent CTPA to confirm the presence of thrombus in the main pulmonary artery and its branches. Venous blood samples were withdrawn immediately at baseline for routine blood tests before CTPA and prior to any therapy measures.

**RESULTS** The percentage of neutrophils (%N) levels presented an increasing trend with symptom duration, in which the peak was 1 to 3 days (75.4±7.1%). Significantly higher %N values were observed in patients with APE compared with the group of non-APE (68.3±11.5 vs. 61.3±7.3%, P < 0.001). %N was positively correlated with D-Dimer (r = 0.472, P < 0.001) and hsCRP (r = 0.387, P < 0.001). In multivariable logistic regression analysis, %N remained independently associated with APE (odds ratio [OR] = 1.078, 95% confidence interval [CI] 1.030-1.128, P < 0.001) after adjustment with smoking, drinking, diabetes, hyperlipidemia, CAD, heart rate, right ventricular diameter, Troponin I, aspirin, and β-blocker. Receiver-operating characteristic curves analysis revealed that the admission %N presented the best diagnostic value for the APE subgroup of 1 to 3 days, providing a sensitivity of 75% and a specificity of 94% (area under the curve [AUC] = 0.914, 95% CI 0.836-0.992; P < 0.001). The optimal cut-off value of %N to detect the presence of APE in this subgroup was 72.8%. The AUC of %N for the APE subgroup of <1 day and 1 to 3 days were 0.743 (95% CI 0.593-0.792; 1-0.007) and 0.719 (95% CI 0.585-0.852; P = 0.002), respectively. The cut-off value of %N was 68.8% for the first subgroup. In the subgroup of ≥7 days, %N showed no significant diagnostic value.

**CONCLUSIONS** A high %N level on admission is significantly and independently associated with APE. The increase of %N reaches the peak on the stage of 1 to 3 days from the onset of APE. The potential diagnostic role of %N on admission for APE patients with the symptom duration of 1 to 3 days is suggested.

**GW29-e1254**

**The Molecular Mechanism of Coronary Heart Disease based on circUTY13/let-7c-5p/TGFβ1 Network Regulation**

Fei Lin, Zhigang Chen, Xuebui Wang, Guoan Zhao
The First Affiliated Hospital of Xinxing Medical University

**OBJECTIVES** The morbidity and mortality of Coronary Heart Disease(CHD) in China showed a continuous increase, but its pathogenesis is not completely understood. With the deepening of the research on circular RNA(circRNA) and microRNA(miRNA), it can be speculated that circRNA-miRNA-mRNA lead to the development of CHD. To study the impact of screening characteristic circRNA and miRNA expression profile using microarray technology on CHD, and then exploring the role of these circRNA-miRNA-mRNA in gene regulation. The aim is to screen new types of molecular makers and molecular target for therapy in CHD.

**METHODS** All participants were examined by Coronary Angiography to verify the presence of CAD and severity of coronary artery stenosis according to diagnostic criteria. We selected 20 CAD patients and 20 clinically matched control subjects and isolated total RNAs from their arterial blood samples for microarray analysis. And the expression profiling of circRNA and miRNA genes in peripheral blood of control group and CAD have been analyzed by gene chip. Processing and sorting the data of circRNA and miRNA expression chips mainly used Expression microarray analysis system v1.0. We predicted circRNA which is possible to combine with miRNA. Moreover, we have conducted bioinformatics analysis.

**RESULTS** Though microarray assay analysis, we found that 110 circRNA expression profiles in the angina group is significant compared with the control group, there were 73 circRNA up-regulated and 27 down-regulated (P < 0.05, fold≥2). In the analysis of miRNA expression, there were 13upregulated and 5downregulated in the angina group (P < 0.05 and fold≥2). Enrichment analysis showed that the circRNAs participate in a variety of disease development processes, biological processes, molecular functions, cellular components, and pathways (P < 0.05).Further verify results showed that circUTY13 and let-7c-5p in patients of CHD was remarkably expressed with qPCR platform. Moreover, we have confirmed the transforming growth factor-β1 (TGFβ1) as mRNA via bioinformatics analysis.

**CONCLUSIONS** circRNA is closely related to the development of CHD, and its mechanism may be related to combine circRNA with miRNA and inhibit mRNA involved in CHD. The results showed that circUTY13/let-7c-5p may regulated TGFβ1 by TGFβ-β pathway involving in the pathogenesis of CHD. Therefore it has been a significant research issue to explore the mechanism of atherosclerosis about circRNA-miRNA.

**GW29-e1297**

**Elevated serum endocan levels are associated with major adverse cardiovascular events in patients with coronary artery disease**

Fuqing Sun, 1 Yifei Chen, 2 Yongfang Lin, 1 Ping Chen 1
1 Fuqing Municipal Hospital; 2 Fujian Medical University

**OBJECTIVES** We aimed to investigate the association between serum endocan levels and major adverse cardiovascular events (MACE) in patients with stable coronary artery disease.

**METHODS** We studied 622 consecutive angina patients (mean age 61±8years, 71% men) including 470 with stable coronary artery disease and 152 with acute coronary syndromes (ACS) from January, 2012 to December, 2015. The composite endpoint of major adverse cardiovascular events (MACEs) including non-fatal acute myocardial infarction, hospital admission with class IIIb unstable angina and cardiac death was assessed at 2-year follow-up. Serum endocan levels were determined using commercially available sandwich enzyme-linked immunosorbent assay (ELISA). Cox regression models were used to estimate the association between serum endocan levels and MACEs.

**RESULTS** Patients with MACEs had significantly higher serum endocan levels compared to those without MACEs (1.59 [range 0.93 to 1.98] ng/ml vs. 0.82 [range 0.60 to 1.12] ng/ml, P < 0.05 and fold change 1.73, P < 0.01). Multivariable Cox proportional hazards analyses, serum endocan levels were significantly associated with 2-year MACEs (hazard ratio 1.45 for highest vs lowest endocan quintile, 95% confidence interval 1.25 to 1.73, P < 0.01).

**CONCLUSIONS** Elevated serum endocan levels were associated with an increased risk of MACEs in patients with coronary artery disease independently of traditional cardiovascular disease (CVD) risk factors. Measurement of serum endocan levels may emerge as a valuable tool for evaluating future CVD risk in patients with coronary artery dis ease.

**GW29-e1315**

**Cardiac biomarkers predicting MACE in patients undergoing noncardiac surgery:a meta-analysis**

Lijun Zhang, 1 Xiantao Zeng, 2 Meiyan Liu 1
1 Department of Cardiology, Beijing Anzhen Hospital Affiliated to Capital Medical University; 2 Center for Evidence-Based and Translational Medicine, Zhongnan Hospital of Wuhan University

**OBJECTIVES** The present meta-analysis was aimed to systematically evaluate the effectiveness and accuracy of brain natriuretic peptide (BNP), cardiac troponin (cTn) and high sensitive C reactive protein (hs-CRP) for predicting postoperative major adverse cardiovascular events (MACE) in patients undergoing noncardiac surgery.

**METHODS** A total of 24 relevant studies with 7,340 participants were collected from five databases, namely PubMed, Embase, China National Knowledge Infrastructure (CNKI), CQVIP and the Wanfang database, until August 15, 2017. And the Review Manager 5.3 software was used for data syntheses in the meta-analysis. The present meta-analysis was aimed to systematically evaluate the effectiveness and accuracy of brain natriuretic peptide (BNP), cardiac troponin (cTn) and high sensitive C reactive protein (hs-CRP) for predicting postoperative major adverse cardiovascular events (MACE) in patients undergoing noncardiac surgery.

**RESULTS** The present meta-analysis was aimed to systematically evaluate the effectiveness and accuracy of brain natriuretic peptide (BNP), cardiac troponin (cTn) and high sensitive C reactive protein (hs-CRP) for predicting postoperative major adverse cardiovascular events (MACE) in patients undergoing noncardiac surgery.

**CONCLUSIONS** The present meta-analysis was aimed to systematically evaluate the effectiveness and accuracy of brain natriuretic peptide (BNP), cardiac troponin (cTn) and high sensitive C reactive protein (hs-CRP) for predicting postoperative major adverse cardiovascular events (MACE) in patients undergoing noncardiac surgery.
GW29-e1523
Circulating long non-coding RNAs as biomarkers for preeclampsia patients are associated with cardiovascular outcomes

Yue Yuan, Guangjin Qu, Jing Shi, Xuejie Han, Xinbo Zhao, Yue Li
The First Affiliated Hospital of Harbin Medical University

OBJECTIVES Placental long non-coding RNAs (IncRNA) play a critical role in the pathogenesis of preeclampsia (PE). The levels of plasmatic IncRNAs in PE patients and the relation to clinical outcomes have not been investigated, yet. Four IncRNAs considered to have implications in the pathogenesis of preeclampsia and abundant expressions in plasma were investigated: metastasis associated lung adenocarcinoma transcript 1 (MALAT1), imprinted maternally expressed transcript (H19), growth arrest specific 5 (GAS5) and FGD5 antisense RNA1 (FGD5-AS1). We first detected the differences of above circulating IncRNAs levels in pregnant women with and without preeclampsia. Then we identified the associations between the plasmatic IncRNAs and the extent of preeclampsia, and we also assessed the relation with PE-related cardiovascular outcomes.

METHODS qRT-PCR analysis was conducted to evaluate MALAT1, H19, GAS5 and FGD5-AS1 expression in the plasma of 190 pregnant women at 34-36 gestational weeks. In addition, clinical assessment including conventional blood index, fetal Doppler Ultrasound and echocardiography were performed at prenatal examination and delivery respectively.

RESULTS The plasmatic levels of these IncRNAs were much lower in PE women when compared with healthy pregnancies (P < 0.001). In univariate analyses, the decreased plasma levels of all four IncRNAs were associated with the severity of PE (P < 0.001). MALAT1 (P = 0.0002), GAS5 (P = 0.00001) and FGD5-AS1 (P = 0.00001) performed as diagnostic biomarkers for severe PE by multivariable logistic analyses. The data also showed that MALAT1, H19 and GAS5 were related to fetal growth restriction (FGR) in PE patients. Moreover, the lower plasma levels of these four IncRNAs had the predictive value of de novo left ventricular diastolic dysfunction.

CONCLUSIONS The present study reveals a strong association of circulating MALAT1, H19, GAS5 and FGD5-AS1 with PE pregnancies and related clinical outcomes. This provides a more precise insight into the pathophysiology of preeclampsia, as well as offering the potential value of IncRNAs as novel biomarkers and therapeutic targets in future.

COMMUNITY MANAGEMENT

GW29-e0057
3D food printing can help elder to digest and swallow foods

Wang Shui Hua,1 Li Na,2 Zhang Yu Dong2
1 Jiangsu Key Laboratory of 3D Printing Equipment and Manufacturing;
2University of Leicester

OBJECTIVES Three-dimensional printing (3D printing) is commonly used as a means of rapidly producing prototypes for manufacturing technology, which can further be personalized or customized products, since it is suitable for the design and manufacture of complicated structure. Now 3D printing can be used to actually manufacture products and so it may be used in many diverse fields, especially the elder people's long-term care in geriatric rehabilitation.

METHODS Jiangsu key laboratory of 3D printing equipment and manufacturing has developed a series of products for the elder people to improve their quality of life. The process is that the raw ingredients are liquidized, and mixed with a suitable and safe solid material. This combination is used as the ink, and then the 3D printer prints out items, with the help of scanning and designing realistic food model.

RESULTS The printed results look the same as the realistic food, but it is much easier to swallow and digest. Thus, it is possible to create personalized nutritious food, thereby promoting physical health for older consumers.

CONCLUSIONS We demonstrated that 3D printing technology can be used to make food that is delicious, nutritious, and easily swallowed and digested. It can help those elderly people who have problems eating or digesting some foods to have a good meal.

GW29-e0627
Antithrombotic therapy in extremely elderly patients with coronary heart disease and atrial fibrillation: a cross-sectional analysis in cadres’ sanatorium

Liu Qiu, Jun Liu, Nina Wang, Jia Liu, Shaozhi Xi, Xuyun Wang, Tong Yin
Department of Cardiology & National Clinical Research Center for Geriatric Diseases, Chinese PLA General Hospital, Beijing, China

OBJECTIVES This study aimed to investigate the present situation of antithrombotic therapy in the extremely elderly patients with coronary heart disease (CHD) and/or atrial fibrillation (AF).

METHODS A cross-sectional analysis was performed on the extremely elderly patients (≥80 years old) with CHD and AF, who lived in a