drink for prevention of obesity-related cardiovascular diseases. Large-scale clomocal trial is warranted to clarify the usefulness of kosen-cha.

GW27-e1046

Smoking Status-dependent Association between Monocyte Chemoattractant Protein-1 and Blood Pressure

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OBJECTIVES Expression levels of monocyte chemoattractant protein-1 (MCP-1) are increased in atherosclerotic regions and functions as an inducer of monocyte migration to the blood vessel wall. Although serum MCP-1 levels are higher in patients with cardiovascular diseases, the precise correlations between serum MCP-1 levels and factors associated with smoking and atherosclerosis is unknown.

METHODS Serum MCP-1 levels were measured in 207 smokers and 80 nonsmokers using enzyme-linked immunosorbent assay.

RESULTS Sex-adjusted analysis in smokers revealed that the MCP-1 levels were positively correlated with age ($\beta = 0.311$, $p < 0.001$), smoking duration ($\beta = 0.342$, $p < 0.001$), systolic blood pressures (SBP; $\beta = 0.225$, $p = 0.001$), and diastolic blood pressures (DBP; $\beta = 0.137$, $p = 0.001$), but not with body mass index. Multivariate regression analysis showed that smoking duration and SBP were independent determinants of MCP-1 levels. However, among nonsmokers, MCP-1 levels were positively correlated with age and BMI, but not with SBP or DBP.

CONCLUSIONS MCP-1 levels were positively correlated with blood pressure among smokers and with BMI among nonsmokers. These results suggest the association between the MCP-1 levels and blood pressure is dependent onsmoking status.

GW27-e1106

Anomalous ductus arteriosus connection in fetus: an anomaly always associated with right aortic arch

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OBJECTIVES To analyze the sonographic features of anomalous ductus arteriosus (DA) connection in fetus, and to investigate the relationship between anomalous DA connection and right aortic arch.

METHODS Detailed fetal echocardiography was performed on 1753 pregnant woman referring to our hospital from January 1st 2014 to October 19th 2015. The three-vessel-trachea (3VT) view, DA transverse and long-axis view were chosen to observe the connection, course, diameter and flow direction of DA. A left/right/double-sided DA or aortic arch was determined by its relative position to fetal trachea. The presence of vascular ring was evaluated in 3VT view. Other associated cardiovascular malformations were also evaluated during the examination.

RESULTS Seventeen fetuses (gestational age 24.2±1.7 weeks) had anomalous DA connection according to detailed fetal echocardiography. A right-sided aortic arch with mirror image branching was detected in all 17 cases. Fifteen fetuses demonstrated a right-sided DA which abnormally connected between right pulmonary artery (RPA) and descending aorta (DAo). The left two cases revealed a left-sided DA abnormally connected between left pulmonary artery (LPA) and left subclavian artery (LSA). No vascular ring around the trachea was detected in all 17 cases. All cases demonstrated associated cardiac anomalies, including tetralogy of Fallot (6/17), double outlet right ventricle (6/17), transposition of the great arteries (2/17) and other cardiac anomalies. Reversed blood flow across DA was observed in six cases. Mean diameter of DA was 0.25±0.09cm, and an abnormally narrowed DA was detected in five cases (z-score < -2).

CONCLUSIONS In our study, anomalous DA connection was always associated with right aortic arch with mirror image branching, and no vascular ring was detected. The right-sided DA with anomalous connection between RPA and DAo was more frequently seen than the left-sided DA abnormally connecting between LPA and LSA. A narrowed DA and reversed flow across DA can occasionally be observed.

GW27-e1108

The application of fetal cardiovascular cast in the demonstration of aorta and/or aortic branching anomalies

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OBJECTIVES To investigate the application of fetal cardiovascular cast in the demonstration of aorta and/or aortic branching anomalies.

METHODS From January to June 2015, 18 cases with aorta and/or aortic branching anomalies diagnosed by fetal echocardiography were terminated upon parental requests. Fetal cardiovascular cast models were made by the method of corrosion casting technique. The casting material was injected into the specimen via umbilical vein. Then the adhesion tissue was dissolved by strong acid after the casting fluid was solidified, in order to demonstrate the real geometries. The origin, course, diameter, branching of aorta and aortic valve anomalies were carefully observed and analyzed.

RESULTS A total of 18 fetuses prenatally diagnosed with aorta and/or aortic branching anomalies were enrolled in this study (18.2 to 34.7 gestational weeks), and all specimens were successfully made into cast models. Twenty-nine abnormalities in aorta and/or aortic branching were demonstrated by these casts, including: aortic origin anomalies in 9 cases (double outlet right ventricle 8/9, transposition of great arteries 1/9), aortic valve anomalies in 2 cases (aortic valve atresia 1/2, aortic valve stenosis 1/2), aortic diameter anomalies in 5 cases (dilation of aorta 2/5, coarctation of aorta 3/5), aortic course anomalies in 4 cases (right aortic arch 2/4, interrupted aortic arch 2/4) and aortic branching anomalies in 9 cases (aortic mirror image branching 2/9, aberrant right subclavian artery 1/9, common trunk of right brachiocephalic artery and left common carotid artery 4/9, left vertebral artery anomalously originated from aortic arch 2/9).

CONCLUSIONS The fetal cardiovascular cast is capable of demonstrating aorta and aortic branching anomalies clearly and objectively. It will help us to understand the spatial relationship of aorta and its major branches, and to provide valuable information for prenatal diagnosis.