CONCLUSIONS The evolution of white matter injury in stroke rats could be characterized by longitudinal multi-parametric DTI study. Corpus callosum was damaged in early stage while internal and external capsule were damaged at all stage of ischemic stroke. The external capsule injury was the most serious in white matter during ischemic stroke.

PULMONARY CIRCULATION

GW28-e0266

The clinical implications of serum cyclophilin A in patients with pulmonary hypertension secondary to COPD

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OBJECTIVES Cyclophilin A (CyPA) is a secreted protein and involved in the pathogenesis of various cardiovascular diseases. However, the association between CyPA and pulmonary hypertension is still unknown. In this study, we aimed to investigate the role of CyPA in the progression of pulmonary hypertension secondary to chronic obstructive pulmonary disease (COPD).

METHODS This study included healthy control group (n=45), pure COPD group (n=59) and COPD with pulmonary hypertension group (n=53). The three groups were well matched for age, gender, body mass index and smoking index. Basic clinical information was collected, and then all participants underwent pulmonary function testing and transthoracic echocardiography. Serum concentrations of CyPA, matrix metalloproteinase 9 (MMP-9) and C-reactive protein (CRP) were measured by enzyme linked immunosorbent assay.

RESULTS Compared with the healthy control group, pulmonary function was significantly decreased in COPD patients with or without pulmonary hypertension ($P<0.05$). And pulmonary function in the COPD with pulmonary hypertension group was worse than that in the pure COPD group ($P<0.05$). The serum level of CyPA was significantly higher in the pure COPD group than that in the healthy control group ($P<0.05$), and further increased in the COPD with pulmonary hypertension group ($P<0.05$). Spearman rank correlation analysis demonstrated that serum CyPA had positive correlations with serum MMP-9 and CRP in the COPD with pulmonary hypertension group ($r=0.452$ and 0.538, both $P<0.01$). Furthermore, serum CyPA correlated positively with pulmonary artery systolic pressure in the COPD with pulmonary hypertension group ($r=0.572$ $P<0.01$).

CONCLUSIONS Serum CyPA may be a valuable marker for predicting the severity of pulmonary hypertension secondary to COPD.

GW28-e0454

Training effectiveness improvements of cardiopulmonary resuscitation skills by using monitor/defibrillator with qualified cardiopulmonary resuscitation (Q-CPR) feedback in undergraduate medical students

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OBJECTIVES To evaluate the training effectiveness improvements of CPR skills by using monitor/defibrillator with Q-CPR feedback in undergraduate medical students.

METHODS Seventy-two medical students(the fourth year of the 8-year) in the emergency department were enrolled in this study. Thirty-two students were training by using monitor/defibrillator with Q-PCR feedback and assigned into experimental group, whereas the other 40 students were assigned into control group and trained with traditional lecture and demonstrating. Knowledge test, skill performance and personal satisfaction assessment of the course were applied to evaluate the training effectiveness.

RESULTS Scores of skill performance and personal satisfaction assessment in the experimental group were higher than those in the control group; Quality evaluation in chest compression, ventilation and defibrillation were improved in both groups, whereas performance improvement in chest compression in experimental group was significantly better than that in control group.

CONCLUSIONS Monitor/defibrillator with Q-CPR feedback is a useful tool in improving precise performance of basic life support skills in CPR training for medical students.

KIDNEY DISEASE

GW28-e0239

Associations between long-term air pollution exposures and estimated glomerular filtration rate in Shanghai, China

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OBJECTIVES To investigate the associations between long-term air pollution exposures and estimated glomerular filtration rate (eGFR) in Shanghai, China (from October 2014 to May 2015).

METHODS A cross-sectional study was conducted in two hospitals affiliated to Tongji University (Tenth People's Hospital and Tongji Hospital) in Shanghai, China (N=4084). Serum creatinine was measured at each hospitalization, and eGFR was calculated using the CKD-EPI creatinine equation. Air pollution data and meteorological data (October 2014 to May 2015) were obtained from the database of Shanghai Environmental Monitoring Center (SEMC). Daily average concentration of particles with an aerodynamic diameter $\leq$ 10 μm (PM_{10}), fine particles ($\leq$ 2.5 μm; $PM_{2.5}$), ozone (O_3), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), and carbon monoxide (CO) were calculated from monitoring stations in the 7 districts of Shanghai. Generalized linear models was used to evaluate the associations between air pollution and eGFR.

RESULTS During the study period, the average concentration of $PM_{2.5}$, PM_{10}, O_3, NO_2, SO_2 and CO were 56.71 μg/m^3, 79.58μg/m^3, 90.43 μg/m^3, 52.07μg/m^3, 20.12μg/m^3 and 0.87 mg/m^3 respectively. After controlling for potential confounders, an interquartile range (IQR) increase (45μg/m^3) in $PM_{2.5}$ was associated with a 0.50 ml/min/1.73 m^2 lower eGFR [95% confidence interval (CI): -0.93,-0.0.7]. A 58.5 μg/m^3 IQR increase in PM_{10} was associated with a 0.70 ml/min/1.73 m^2 lower eGFR [95% CI: -1.19, -0.20], and a 0.47 mg/m^3 IQR increase in CO was associated with a 0.94 ml/min/1.73 m^2 lower eGFR [95% CI: -1.47, -0.41]. The effects were stronger among patients $\geq$ 65 years old, BMI $\geq$ 24 kg/m^2, female patients, and patients with hypertension, diabetes mellitus, hyperlipidemia, coronary heart disease, and patients who smoke or drink currently. These associations were not statistically significant in O_3, SO_2 and NO_2.

CONCLUSIONS The findings of this cross-sectional study indicated that long-term air pollution exposure to PM2.5, PM10 and CO was associated with lower estimated glomerular filtration rate.

GW28-e0960

Seipin deficiency causes renal injury and reversed both by adipose tissue transplantation and leptin respectively in mice

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OBJECTIVES *Seipin* deficiency is responsible for type 2 Berardinelli-Seip Congenital lipodystrophy (BSCL2) with severe loss of adipose tissue (AT), hyperlipidemia, insulin resistance (IR) and hepatic steatosis. Some patients with *Seipin* deficiency were reported died due to the renal failure. However, the function of *Seipin* in kidney was poorly understood. We supposed loss of fat played important role in the renal injury. Here in this study we investigated the effects of *Seipin* deficiency on renal injury and used two treatments to improve the renal injury.

METHODS 3-month-old *Seipin*$^{-/-}$(SKO) and wild-type (WT) mice were used in this study. The body weight, 24h urinary albumin excretion (UAE) and creatinine clearance were detected. For improve the renal injury, AT were transplanted to SKO mice (SKO-AT) for 3 months or SKO mice were injected by i.p. with leptin (SKO-Leptin) for 14 days respectively. Renal relative parameters, plasma leptin and adiponectin levels were studied. We evaluated glucose homeostasis and relevant genes expressions as well.

RESULTS *Seipin* mRNA expression levels in WT mice were higher in AT and testicles, and could also be found in kidney, which is mainly expression in glomeruli. SKO groups showed higher body weight, food intake and polyuria. Increased kidney weight/tibia length, 24 hours' urinary excretion of Na$^+$, K$^+$, Cl$^-$, Ca^{2+}, UAE, creatinine clearance, surface areas of glomerulus and mesangial were also increased compared with WT control groups. A few glomerular lipids