RESULTS The levels of serum CRP was 13.05±3.68 mg/L and blood Hcy was 21.17±8.63 μmol/L in patients with coronary heart disease were higher than those in the control group (5.02±1.60 g/L, 8.15±2.03 μmol/L), the differences were statistically significant (P < 0.05). The levels of serum CRP and blood Hcy in the acute myocardial infarction subgroup of coronary heart disease patients (19.62±3.03 mg/L, 32.10±7.02 μmol/L) were higher than those in the unstable angina pectoris subgroup (12.98±6.11 mg/L, 20.82±6.04 μmol/L) (P < 0.05); while, the levels of serum CRP and blood Hcy in the unstable pectoris angina subgroup were higher than those in the stable angina pectoris subgroup (7.65±4.81 mg/L, 14.01±4.30 μmol/L), the differences were statistically significant (P < 0.05).

CONCLUSIONS The levels of serum CRP and blood Hcy are high expression in patients with coronary heart disease, and their expression level can be used as predictors to prompt the severity and type of coronary heart disease.

GW26-e2480
Long-term follow-up study of peripheral blood EMPs, EPCs levels in acute coronary syndrome patients with or without diabetes
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OBJECTIVES Explore the levels of peripheral blood CD144+/Annexin V− EMPs, EPCs in patients of acute coronary syndrome (ACS) with or without diabetes during long-term follow-up. Discuss the relationship among EMPs, EPCs, coronary artery acute ischemic events and Abnormal glucose metabolism.

METHODS Study included 66 patients with acute coronary syndrome (ACS) according to the coronary angiography. Based on clinical optimal renalase low-expression model for the subsequent experiments. The renalase gene low-expression in the heart tissue of rats can be induced in stress conditions, such as atherosclerosis and oxidative stress. This study was designed to examine the correlation between APN and autophagy in apolipoprotein E-deficient (ApoE−/−) mice.

METHODS Adult ApoE−/− mice were fed a high fat diet for 12 weeks. After 8 week feeding, mice were treated with 10 ug/kg APN or vehicle every day for 4 weeks. The size of aortic plaque was measured by oil red O staining and autophagosomes were detected by transmission electron microscope. Western blot was used to evaluate the expression of autophagy marker protein, LC3II.

RESULTS The size of aortic plaque was reduced by APN. And the levels of autophagosomes decreased in APN group compared with control group. Furthermore, APN also decreased LC3II and LC3II/protein expression ratio.

CONCLUSIONS These data suggest the autophagy in ApoE−/− mice caused by high diet could be ameliorated by APN.

GW26-e0455
Establishing the renalase gene low-expression modal in cardiac tissue of Sprague-Dawley rats via lentivirus-mediated RNA interference technology
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OBJECTIVES Renalase is a novel secretory amino oxidase and expressed in kidneys and heart. To research the protective mechanism of renalase in local heart tissue, we established the low-expression renalase model with lentivirus-mediated RNA interference technology.

METHODS Three renalase-targeting oligonucleotides were designed after analyzing the mRNA of renalase. Lentivirus particles were prepared by LV expression Systems (using the trono 3 plasmid component system), and then, LV-RNLS-shRNAs and LV-NC-shRNA were respectively transfected into H9C2 cells in different culture dishes. The optimal oligonucleotide was screened by real-time PCR and western blotting. The renalase gene low-expression in the heart tissue of rats via pericardial cavity injection. And real-time PCR and western blotting were used to detect renalase gene expression in the heart.

RESULTS In the cell screening experiment, the efficacy of the inhibition of renalase mRNA expression was 95.7%, and that of renalase protein expression was 83.1% in H9C2 cells. When the oligonucleotide was injected into the pericardial cavities of the SD rats on the 10th day, it inhibited 63.9% of the expression of renalase protein in the heart tissues.

CONCLUSIONS LV-Rnls-RNAi (19813-1) can be used to establish an optimal renalase low-expression model for the subsequent experiments.

OTHERS

GW26-e3574
Adiponectin stabilizes aortic plaques in ApoE−/− mice via regulating the level of autophagy
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OBJECTIVES Adiponectin (APN), an adipose-derived adipokine, offers anti-atherogenic effects although the precise mechanism remains unclear. Autophagy reported as the major intracellular degradation system can be induced in stress conditions, such as atherosclerosis and oxidative stress. This study was designed to examine the correlation between APN and autophagy in apolipoprotein E-deficient (ApoE−/−) mice.

OTHERS

GW26-e2302
Non-vitamin K Antagonist Oral Anticoagulants (NOACs) in Patients with Atrial Fibrillation and Heart Failure: A Systemic Review and Meta-analysis of randomized trials
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OBJECTIVES The relative efficacy and safety of non-vitamin K antagonist oral anticoagulants (NOACs) against warfarin have been assessed for stroke prevention in atrial fibrillation(AF) in several clinical subgroups. However, no pooled analysis has been undertaken across the four landmark phase 3 randomized controlled trials (RCTs) to assess the effects of all NOACs against warfarin in the subgroup of patients with AF and heart failure (HF). We performed a systematic review and meta-analysis of RCTs to determine the relative efficacy and safety of NOACs against warfarin among subgroup patients with AF and HF. Additionally, we compared outcomes between AF patients with HF and without HF.
METHODS A comprehensive literature search was conducted using the Cochrane Library, MEDLINE, and Scopus databases from inception to April 2015 without language restrictions. The following search terms were used: (dabigatran OR rivaroxaban OR apixaban OR edoxaban) AND (atrial fibrillation OR stroke OR systemic embolic events by 14% (Odds Ratio [OR]: 0.86, 95%Confidence interval [CI]: 0.76-0.98). Low-dose NOACs had comparable efficacy to warfarin for the stroke or systemic embolic events (OR 1.02; 95%CI: 0.86-1.21). A 24% reduction in major bleeding was seen with single/high-dose NOACs, compared with those with warfarin (OR: 0.76, 95% CI: 0.67-0.86). For low-dose NOACs, the OR for major bleeding was 0.64 but without significant difference (95%CI: 0.38-1.07). Among the 42361 patients allocated to a NOAC, the outcomes were compared between AF patients with HF and those without HF. Regardless of high- or low-dose NOAC regimens, the incidences of both major bleeding and the composite of stroke or systemic embolism in AF patients with HF were similar to those without HF. In patients with AF and HF, a 41% reduction in intracranial bleeding was observed (OR: 0.59, 95% CI: 0.40-0.83), perhaps driven by differences in comorbidities between both groups.

RESULTS Four RCTs were identified and included in the present study: 19122 patients with AF and HF were allocated to a NOAC (13384 receiving single/high-dose NOAC), and 13390 to warfarin. Single/high-dose NOACs significantly reduced the incidence of stroke or systemic embolic events by 14% (Odds Ratio [OR]: 0.86, 95%Confidence interval [CI]: 0.76-0.98). Low-dose NOACs had comparable efficacy to warfarin for the stroke or systemic embolic events (OR 1.02; 95%CI: 0.86-1.21). A 24% reduction in major bleeding was seen with single/high-dose NOACs, compared with those with warfarin (OR: 0.76, 95% CI: 0.67-0.86). For low-dose NOACs, the OR for major bleeding was 0.64 but without significant difference (95%CI: 0.38-1.07). Among the 42361 patients allocated to a NOAC, the outcomes were compared between AF patients with HF and those without HF. Regardless of high- or low-dose NOAC regimens, the incidences of both major bleeding and the composite of stroke or systemic embolism in AF patients with HF were similar to those without HF. In patients with AF and HF, a 41% reduction in intracranial bleeding was observed (OR: 0.59, 95% CI: 0.40-0.83), perhaps driven by differences in comorbidities between both groups.

CONCLUSIONS Among AF patients with HF, high-dose NOACs had more favorable efficacy and safety profile compared with warfarin. Low-dose regimens had similar efficacy and safety as warfarin. NOACs were similarly effective or even safer in AF patients with HF compared to those without HF.

GW26-e2942
The autophagy in neuron injury after cardiopulmonary resuscitation in rats
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OBJECTIVES Recent studies show the existence of autophagy in cerebral ischemia; however, no studies have been found to examine the role of autophagy in cerebral injury after cardiopulmonary resuscitation (CPR). This study was to determine the role of autophagy in rats model of ventricular fibrillation (VF)/CPR.

METHODS Experiment 1: 48 adult Wistar rats were subjected to VF by an external transthoracic alternating current, left untreated for 6 minutes, and then administered CPR to observe the existence of autophagy after return of spontaneous circulation (ROSC). Experiment 2: 72 rats were pretreated with intraperitoneal injections of either control group, the autophagy inducer rapamycin (Rapamycin group) or the autophagy inhibitor 3-methyladenine (3-MA group) after ROSC at once to evaluate the contribution of autophagy to neuronal injury after ROSC.

RESULTS Our results showed that autophagy activation attenuated 2 to 4 hours after ROSC and was related to the decrease in 5-AMP-activated protein kinase (AMPK) activity after ROSC. Rapamycin treatment significantly increased the expression of LC3-II and Beclin-1 after ROSC, attenuated the activation of caspase-3, promoted neuron survival and decreased neuron apoptosis, and improved the neurological score after CPR. In contrast, 3-MA pretreatment significantly attenuated the expression of LC3-II and Beclin-1 and worsened the neurological outcome after ROSC.

CONCLUSIONS Autophagy induction after ROSC shows remarkable tolerance to VF/CPR ischemic insults, and improves neurological outcomes.

GW26-e0263
Survival from Out-of-hospital Cardiac Arrests Without Return of Spontaneous Circulation in the Field
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OBJECTIVES Prompt and proper field resuscitation is vital for survival from out-of-hospital cardiac arrest (OHCA). Return of spontaneous circulation (ROSC) in the field is one of the most important determinants contributing to survival and favorable neurological outcomes following OHCA. However, nearly one third of the survivors in our site were patients without ROSC achieved in the field. In this study we described the demographics, pre-hospital characteristics and outcomes of patients with OHCA in our resuscitation research center, who were treated on scene and transported to hospitals, and compared survivors who did and did not have ROSC in the field, as well as those who met the universal Termination of Resuscitation (TOR, no ROSC, not EMS witnessed, and not shocked) criteria in the field.

METHODS Resuscitation Outcomes Consortium (ROC), is a clinical research network consisting of eleven regional centers and a data coordinating center in North America that has registry systems and conducts multi-center clinical trials focusing on OHCA and out of hospital trauma. Its goal is to evaluate strategies for pre-hospital treatment of patients with OHCA or life-threatening trauma. Between 2006 throughout April 2011, a total of 10,994 non-traumatic OHCA cases were screened and enrolled in Dallas Fort Worth (DFW) ROC site in Texas. We included cases aged >18 years with non-traumatic OHCA treated and transported to a hospital within DFW ROC site. Demographic characteristics, key pre-hospital factors and resuscitative interventions in the field, for all these treated and transported cases, including survivors with and without ROSC, as well as those who met TOR, were reported.

RESULTS Included were 5,099 OHCA cases; 82.1% (4,243) were patients without ROSC in the field, of which 66.6% (2,827) met TOR criteria in the field but still were treated and transported. Of treated cases, 5.6% (287) survived to hospital discharge; of the 94.4% (4,812) who died, 82.6% (3,975) died in the Emergency Department, while 17.4% (837) died in the hospital. Further analysis of the survivors showed that 72.5% (208) of the survivors had ROSC in the field, and 27.5% (79) did not. Of interest, 10.8% (31) of survivors met TOR criteria, accounting for 1.1% of this special population. EMS immediate resuscitation attempt on witnessed arrest (OR 4.159, 95%CI: 1.125-16.819), shock-able initial rhythm (OR 3.035, 95%CI 1.079-8.643), and advanced airway management (OR 0.329, 95%CI 0.104-1.041) were top three significant factors to predict survival of OHCA victims without ROSC in the field. Of concern, 1.7% (47/2827) of victims who met TOR criteria presented initial shock-able rhythm but no shocks were delivered in the field by EMS personnel.

CONCLUSIONS In the DFW ROC site, 27.5% of OHCA survivors were patients without ROSC achieved in the field and 10.8% of the survivors met Termination of Resuscitation criteria in the field. Our data suggest that all treated OHCA patients should be transported to the hospital.

GW26-e1558
Saliicylic acid renders aspirin resistance via breaking the functional balance of COX-1/COX-2 in diabetic mice
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OBJECTIVES Aspirin resistance (AR) has become a serious clinical concern. Diabetes is an established risk factor of AR, but the key mechanisms remain elusive. The objective of this study was to uncover whether there was an underlying link between pathogenic accumulation of salicylic acid (SA), the major metabolite of aspirin, and AR in the diabetic state.

METHODS One hundred 8-week-old female C57BL/6 mice were randomly divided into normal control group (n=20) and high-fat diet and streptozotocin (HFD/STZ) induced diabetic group (n=80). For diabetic model mice were then randomly divided into four groups and treated respectively with vehicle (0.5% CMC-Na), aspirin (dissolved in 0.5% CMC-Na), equal molar volume of SA (30 mg/kg, i.g) plus aspirin (40 mg/kg, i.g) and aspirin (40 mg/kg, i.g) followed by NaHCO3 (600 mg/kg, i.g). The levels of blood glucose, 24-h urine protein, cholesterol and triglycerides were measured and the pathological changes in the renal tissues were examined by optical microscopy. qRT-PCR analysis was performed to detect the renal organic anion transporters (OATs), sodium-coupled monocarboxylate transporters (SMCTs) and uric acid transporter 1 (URAT1). Platelet function was analyzed using flow cytometry analysis of platelet P-selectin (CD62P), Thromboxane (TX) B2 and 6-keto-prostaglandin (PG) F1α contents were determined by radioimmunoassay and the concentration of SA in plasma was measured with high-performance liquid chromatography (HPLC). The