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 heart failure). The available data were extracted from the main trial publications, subgroup analyses, or supplemental appendices. Statistical analyses were performed using Revman 5.3 software.

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 NOACs, 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: 0.40-0.84), perhaps driven by differences in comorbidities between both groups.

CONCLUSIONS Among AF patients with HF, single/high-dose NOACs have both 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 ChunLin Hu, Xuan Dai, Xiaoxing Liao, Hongyan Wei, Xin Li, Gang Dai
Department of Emergency, the First Affiliated Hospital, Sun Yat-sen University, Guangzhou 510080, China

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 saline (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 deficits after CPR. 3-MA pretreatment significantly attenuated the expression of LC3-II and Beclin-1 and worsened the neurological outcome after ROSC.

CONCLUSIONS Autophagy activation 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 Yan Xiong,1,2 Ngozi Okoro,1 Denise Mitchell,2 Megan Dwyer,1 Auna Leatham,1 Gilberto Salazar,1 Ahamed Idris1
1University of Texas Southwestern medical center; 2The First Affiliated Hospital of Sun Yatsen University

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 (TRO, 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 reduces 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 ≥18years 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 TRO, 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 TRO 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% (4,812) 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 TRO criteria, accounting for 1.1% of this special population. EMS immediate resuscitation (OR 0.25, 95%CI 0.10-0.64) was significant in predicting survival of OHCA victims without ROSC in the field. Of concern, 1.7% (47/2827) of victims who met TRO 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 Salicylic acid renders aspirin resistance via breaking the functional balance of COX-1/COX-2 in diabetic mice Haowen Zhang,1 Haijing Hao,1 Xiaohu Chen2
1First Clinical Medical College, Nanjing University of Chinese Medicine; 2Department of Cardiology, Jiangsu Province Hospital of Traditional Chinese Medicine; 3State Key Laboratory of Natural Medicines, Key Lab of Drug Metabolism and Pharmacokinetics, China Pharmaceutical University

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). The 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) and aspirin (40 mg/kg, i.g) plus SA (30 mg/kg, i.g) and followed by NaHCO3 (600 mg/kg, i.g, 0.5% CMC-Na), equal molar volume of SA (30 mg/kg, i.g) plus aspirin (40 mg/kg, i.g) followed by NaHCO3 (600 mg/kg, i.g) and aspirin (40 mg/kg, i.g) plus SA (30 mg/kg, i.g) and followed by NaHCO3 (600 mg/kg, i.g), equal molar volume of SA (30 mg/kg, i.g) plus aspirin (40 mg/kg, i.g) and followed by NaHCO3 (600 mg/kg, i.g) and aspirin (40 mg/kg, i.g) plus SA (30 mg/kg, i.g) and 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