

(RTEs) of T lymphocytes was impaired in patients with coronary artery disease (CAD).

**METHODS** Content of signal-joint T cells receptor excision circles (sj-TREC) in T lymphocytes, a molecular marker of RTEs, were assessed among CAD patients and age-matched controls. Monochrome multiplex quantitative PCR method was used to assess samples' telomere length, a known indicator of increased cell division. Neutrophils to lymphocytes ratio (NLR) was calculated to reflect the severity of inflammatory status. Patients were grouped according to Gensini score (GS) tertile (low GS <18; intermediate GS 18-41, high GS >41). Predictive value of sj-TREC for disease status was evaluated according to ordinary logistic regression models.

**RESULTS** Average copy numbers of sj-TREC per  $10^6$  T lymphocytes among patients with non-ST-elevation acute coronary syndrome (NSTACS), stable angina (SA) and controls were  $877 \pm 494$ ,  $1222 \pm 539$  and  $1803 \pm 817$ , respectively ( $P < 0.001$ ). No significant difference of telomere length was found among three groups. NLR was significantly higher in NSTACS patients ( $3.9 \pm 2.9$ ) than SA patients ( $2.4 \pm 1.1$ ,  $P < 0.01$ ) and controls ( $2.1 \pm 0.9$ ,  $P < 0.001$ ). Negative correlation between sj-TREC and NLR was uncovered ( $R = -0.3312$ ,  $P < 0.0001$ ). Sj-TREC level between SA and NSTACS patients was significantly different in the 50-64 years cohort ( $P < 0.001$ ), but not in the 65-80 cohort. Sj-TREC level showed a negative correlation with age among healthy controls ( $R = -0.5052$ ,  $p = 0.0005$ ) and SA patients ( $R = -0.5158$ ,  $p = 0.005$ ), but not NSTACS patients ( $R = -0.1415$ ,  $P = 0.0991$ ). Content of sj-TREC in high GS group ( $GS > 41$ ) was most significantly reduced than low GS group ( $GS < 18$ ) ( $P < 0.001$ ). Ordinal logistic regression analysis revealed that higher sj-TREC level was independently associated with absence of CAD ( $OR = 0.35$ ,  $P < 0.001$ ) and low Gensini score ( $OR = 0.21$ ,  $P < 0.001$ ).

**CONCLUSIONS** Significantly reduced sj-TREC level in SA and NSTACS patients mainly resulted from decreased thymic output rather than increased T cell proliferation. Patients with more severe inflammatory status had lower RTEs of T cells. Content of sj-TREC could be influenced both by age and CAD status. Sj-TREC level from elderly patients was too low to notice a significant difference between SA and NSTACS patients. Unlike the case with controls and SA patients, content of sj-TREC was so low in NSTACS patients that it appeared no longer significantly related to age among them. Patients with higher GS had more complicated plaques and might have poorer thymic function. Ordinal logistic regression analysis demonstrated that higher sj-TREC level was an independent protective factor to CAD status. In conclusion, accelerated thymic involution may be partly responsible for the development of CAD via the alteration of equilibrium of peripheral T cells compartments and interruption of maintained immune tolerance.

#### GW26-e4557

##### Alloctryptopine attenuates cardiac transmural dispersion of repolarization and protects ischemia reperfusion induced arrhythmias in rabbits

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**OBJECTIVES** Ischemia reperfusion injury is known to impair cardiac function in ischemic heart diseases (IHD). Alloctryptopine is a botanical alkaloid extracted from *Corydalis decumbens* (Thunb) Pers Papaveraceae. Lately great attention has been paid to its anti-arrhythmic effects. We hypothesized that alloctryptopine can provide protection against ischemia reperfusion (I/R) injury through reducing transmural heterogeneity of repolarization in rabbit heart.

**METHODS** The LADs ligation were conducted to block the blood flow and reperfuse the myocardium of 48 alloctryptopine pretreatment rabbits. Body-surface electrocardiograms and monophasic action potential (MAP) were recorded before and after acute ischemia and reperfusion. Transmembrane action potential durations from epicardium, midcardium and endocardium were simultaneously recorded together with the occurrence of triggered activities and malignant ventricular arrhythmias.

**RESULTS** The acute ischemia and subsequent reperfusion shortened the monophasic action potential duration (MAPD) of epicardium, midcardium and endocardium and increased transmural dispersion of repolarization (TDR) in operation alone group. Treatment of alloctryptopine preferentially prolonged the MAPD<sub>50</sub> and MAPD<sub>90</sub> of epicardium and endocardium rather than midcardium, thereby reduce

the TDR of ischemia/reperfusion myocardium from  $52.3 \pm 8.7$  ms/ $69.0 \pm 8.0$  ms to  $30.5 \pm 5.0$  ms/ $33.0 \pm 7.0$  ms ( $P = 0.002$ ). Nine rabbits were observed early-afterdepolarizations (EADs) and thirteen rabbits were experienced frequent ventricular tachyarrhythmias during LADs ligation. Alloctryptopine intervention successfully suppressed the I/R-induced arrhythmias by 35.4% ( $P = 0.018$ ).

**CONCLUSIONS** Alloctryptopine maintains the electrophysiological heterogeneity of repolarization among myocardial layers and effectively prevents I/R induced arrhythmias.

#### GW26-e4600

##### Clinical effect of recombinant human brain natriuretic peptide combined with levosimendan on acute myocardial infarction complicated with heart failure

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**OBJECTIVES** To observe the efficacy and safety of recombinant human brain natriuretic peptide (rh-BNP) combined with levosimendan in treating patients with acute myocardial infarction complicated with heart failure.

**METHODS** Hospitalized patients who suffered from anterior wall AMI with heart failure (KillipII~III) within 12 to 24 hours from the onset of chest pain were randomized into two groups ( $n = 30$ , respectively): control group (receiving dobutamine and/or cedilanid on the basis of essential therapy) and experimental group (receiving rh-BNP combined with levosimendan on the basis of essential therapy). The hemodynamics, clinical parameters of test and adverse events were observed before and after treatment.

**RESULTS** In experimental group, compared with those before treatment, there were statistical differences in respiratory rate (RR), heart rate (HR), systolic blood pressure (SBP), arterial blood gas oxygen saturation (SaO<sub>2</sub>), cardiac index (CI), extravascular lung water index (EVLWI) at 2h and the following time points after treatment (all  $P < 0.05$ ). In control group, compared with those before treatment, there were statistical differences in RR, HR, SaO<sub>2</sub>, CI, EVLWI at 6h after treatment and in the next time points (all  $P < 0.05$ ). RR, HR, SBP, SaO<sub>2</sub>, CI, EVLWI at 2h and 6h after treatment had statistical differences between two groups, and the differences in RR, HR, CI, EVLWI persisted for 72 hours after medicine administration. There was a statistically significant difference between two groups in urine volume, plasma NT-proBNP concentration, left ventricular ejection fraction (LVEF) and length of stay in CCU (all  $P < 0.05$ ). For adverse events monitoring, there was no significant change between two groups in hepatic parameters, electrolyte level and coagulation function before and after treatment.

**CONCLUSIONS** rh-BNP combined with Levosimendan is superior to the conventional drugs in improving hemodynamics, increasing urine volume, decreasing the plasma NT-proBNP concentration, improving clinical symptoms, increasing LVEF, and reducing the length of stay in CCU in patients with acute myocardial infarction complicated with heart failure, which has better tolerance and safety.

#### GW26-e0268

##### Incidence and Predictors Of Prolonged Dual Antiplatelet Therapy Among Patients After Percutaneous Coronary Intervention

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**OBJECTIVES** The optimal duration of dual antiplatelet therapy (DAPT) after percutaneous coronary intervention (PCI) remains controversial. The present study sought to elucidate the frequency and predictors of DAPT beyond 12 months after stent deployment in Chinese population.

**METHODS** We examined the incidence of extended DAPT at 12 months follow-up among patients after successful PCI enrolled in a 28-site Chinese registry. Predictors of prolonged DAPT beyond 12 months were evaluated using multivariable cox proportional hazards model.

**RESULTS** Among 2,130 patients, DAPT was continued in 46% ( $n = 983$ ) beyond 12 months after stent implantation. There was a significant heterogeneity of DAPT duration among centers. Compared to those