

thrombin-loaded alginate calcium microspheres (TACMs). The present work was to examine the biocompatibility of TACMs both in vitro and in vivo.

METHODS In vitro, cell cytotoxicity, hemolysis and inflammatory potential of TACMs were examined. Furthermore, superselective embolization of dog liver arteries was performed with TACMs to investigate histological changes. To clarify the embolic effect of TACMs mixed thrombus in vivo, hepatic artery injury animal model of 6 Beagles was established and transcatheter artery embolization for bleeding was performed.

RESULTS A good cytocompatibility of TACMs was observed in all in-vitro experiments. In vivo, no measurable clinical and biochemical toxic effects were observed in animal models. Moreover, the histological study of tissues of liver blood vessel showed signs of a slight inflammation. The results of transcatheter application of TACMs mixed thrombus for bleeding showed that the blood flow was shut down completely after the TACMs mixed thrombus was delivered and the post-procedural survival rate of animal models at 4 week was 100%.

CONCLUSIONS TACM has good biocompatibility, and thus has great potential to be applied safely and effectively as a new embolic agent.

GW28-e1211

Delayed pneumothorax in subclavian-vein catheterizations in RFCA for tachyarrhythmia patients



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OBJECTIVES The patients received (radiofrequency catheter ablation) RFCA therapy for tachyarrhythmia have some differences to the patients in emergency stations and intensive care units, most of which don't concomitant other diseases, and are physically in good condition, and catheters do not stay long in their bodies. There were few studies on the pneumothorax during RFCA therapy for arrhythmia patients. We therefore conducted the retrospective study to determine the incidence and feature of the pneumothorax in these patients.

METHODS 1021 subclavian-vein catheterizations that were performed in the procedures of RFCA using the Seldinger technique in our center were analyzed by retrospective investigation. The sex, age, weight, height, and body mass index (BMI; kg/m²) were investigated.

RESULTS In total, 1021 procedures were analyzed, including 524 men and 497 women. A total of 7 patients experienced pneumothorax (7/1021; 0.7%), all of which were women except of one boy with 13 years old. The differences between no pneumothorax group and pneumothorax group were not significant in age and weight ($P > 0.05$), but the sex and BMI were statistically significant, with BMI was 21.4 ± 1.6 in pneumothorax group, lower than no pneumothorax group (24.2 ± 3.6 , $P < 0.05$).

CONCLUSION Although patients accepted RFCA are physically in good condition and do not concomitant other diseases, they had the same incidence of pneumothorax in subclavian-vein catheterizations, compared to those in intensive units and emergency rooms, moreover, had more chances to develop delayed pneumothorax, and the patient's sex and BMI contributed to the occurrence of the complication.

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Value of Electrocardiographic Left Ventricular Hypertrophy as a Predictor of Poor Blood Pressure Control: Evidence from the China Stroke Primary Prevention Trial



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OBJECTIVES Recent studies have indicated that hypertension is not well controlled in many populations worldwide. Factors associated with poor blood pressure control must be clarified. Electrocardiographic left ventricular hypertrophy, which is detected by 12-lead electrocardiography, is a common manifestation of preclinical cardiovascular disease that strongly predicts cardiovascular disease morbidity and mortality. However, little information is available on the role of left ventricular hypertrophy in blood pressure control. We aimed to assess the relationship between electrocardiographic left ventricular hypertrophy and blood pressure control in the China Stroke Primary Prevention Trial.

METHODS The study population included a total of 17,312 hypertensive patients, selected from 20,702 adults who had participated in the China Stroke Primary Prevention Trial and had an electrocardiogram performed at the baseline visit. Subjects were divided into 2 groups according to the electrocardiogram results (defined by the Sokolow-Lyon criteria): left ventricular hypertrophy and normal. Baseline characteristics were compared between the groups. Unsatisfactory blood pressure control was defined as systolic blood pressure ≥ 140 mmHg or diastolic blood pressure ≥ 90 mmHg after antihypertensive treatment during the 4.5-year follow-up period. Multivariate analysis identified left ventricular hypertrophy as associated with unsatisfactory BP control.

RESULTS Left ventricular hypertrophy is common in hypertensive adults (approximately 8.1% in the study) and more prevalent in males (12.8%). The unsatisfactory blood pressure control rate was high in the total population (46.8%), especially in the left ventricular hypertrophy group (56.8%). In the multivariate regression analysis, the electrocardiographic left ventricular hypertrophy group had a significantly higher rate of unsatisfactory blood pressure control (OR 1.42, [95% CI 1.26, 1.61], $P < 0.001$), independent of traditional risk factors. Notable differences were also observed in males (OR 1.37 [95% CI 1.17, 1.60], $P < 0.001$), in females (OR 1.45 [95% CI 1.18, 1.77], $P < 0.001$), and especially in patients with comorbid diabetes (OR 2.32, [95% CI 1.31, 4.12], $P = 0.004$).

CONCLUSIONS Electrocardiographic left ventricular hypertrophy appears to be an independent predictive risk factor for poor blood pressure control, which suggests that patients with left ventricular hypertrophy, especially females and patients with comorbid diabetes, have greater difficulty achieving the target blood pressure during clinical follow-up.

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Effects of leptin on atrial ganglionated plexi neural activity and atrial fibrillation inducibility in a canine model



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OBJECTIVE Leptin, one of the main hormones controlling metabolism, has been associated with cardiac dysfunction. However, it is not clear whether leptin could affect atrial ganglionated plexi neural activity and atrial fibrillation inducibility.

METHODS Eighteen anesthetized dogs were randomly divided into two groups: leptin group ($n=9$, leptin microinjection into anterior right ganglionated plexi (ARGP)) and control group ($n=9$, equivalent saline microinjection into ARGP). The effective refractory period (ERP) at atrial and pulmonary vein sites, window of vulnerability (WV), ARGP function and neural activities were determined at baseline and 30 minutes after leptin or saline microinjection. At the end of the experiment, the ARGP tissue were taken for the detection of interleukin-6 (IL-6), tumor necrosis factor- α (TNF- α) and c-fos expression.

RESULTS At baseline, no significant differences in atrial electrophysiological characters were observed between the two groups. However, 30 minutes after leptin microinjection, the ERP at each recording site was significantly decreased and the Σ WV was greatly increased (37.3 ± 4.3 ms vs. 1.6 ± 1.5 ms, $p < 0.05$) compared to the control group. In addition, the ARGP function and neural activities were significantly enhanced and the expression of IL-6, TNF- α , c-fos were increased in the leptin group rather than the control group.

CONCLUSION Leptin could increase the inducibility of AF by enhancing ARGP function and neural activities. Inflammatory activation in ARGP may contribute to these results.