GW28-e1144

Vagal reflex influences the recurrence of patients with atrial fibrillation after cryoablation

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OBJECTIVES The effect of vagal reflex during cryoablation in the treatment of atrial fibrillation (AF) should be clarified in order to avoid recurrence.

METHODS From Jan 2014 to Apr 2015, this study analyzed 103 patients of paroxysmal/ persistent AF undercryoablation retrospectively. Patients were divided into two groups based on whether vagal reflexes occurred. The baseline characteristics, operation parameters and success rate have been compared between the two groups. Vagal reflex in operation was defined as significant sinus bradycardia, sinus arrest, II or III degree atrioventricular block in operation with or without blood pressure. The primary endpoint was the recurrence rate of atrial fibrillation after 12-month accepted cryoablation.

RESULTS There were 28 patients in vagus reflex group and 75 patients in control group. There was no significant difference in hypertension, diabetes mellitus, cerebral infarction, left atrial diameter between the two groups. Application of 23mm balloon, operation time, X-ray exposure were also no significant different between the two groups. There were 2 cases occurred severe vagal reflex, one of which could not restore autonomic sinus rhythm after 3 minutes of ventricular pacing and finally restore till 6 minutes after injection of atropine. There were 7 patients recurrence of AF in vagus reflex group and 25 in control group. The recurrence rate of AF were significant different between the two groups.

CONCLUSIONS Vagal reflex during cryoballoon isolation of pulmonary vein in the treatment of atrial fibrillation can reduce postoperative recurrence of AF. It may be associated with improved vagus ganglia, autonomic nervous system of left atrium injury by cryoablation.

GW28-e1146

Effectiveness and safety of anticoagulation therapy with dabigatran etexilate in patients undergoing catheter ablation and cardioversion procedures for atrial fibrillation

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OBJECTIVES NOACs were widely used in atrial fibrillation patients, but the data of that used in AF patients underwent cardioversion. To evaluate effectiveness and safety of anticoagulation therapy with Dabigatran Etexilate in patient with atrial fibrillation (AF) undergoing catheter ablation and direct current cardioversion (CV).

METHODS A cohort of 96 patients who underwent catheter ablation and CV of AF was enrolled. The 96 patients were divided into two groups, 60 patients in Dabigatran Group and 36 patients in Warfarin Group. In Dabigatran Group, Dabigatran (110mg or 150mg, bid) was given for at least 2 month. In Warfarin Group, INR was adjusted in the range between 2.0 and 3.0 during standard medication of warfarin. None of the patients changed anticoagulant during the anticoagulation therapy.

RESULTS (1)There were no differences in baseline characteristics between two groups. (2)There were no differences between 2 groups on the death and thromboembolism events, including cerebral, systemic and pulmonary emboli (0/60 patients in Dabigatran Group and 0/36 patients in Warfarin Group, $P>0.05$). There were no TIMI major bleeding events in both groups. There were no significant differences in minor bleeding events between Dabigatran Group (2/60 patients) and Warfarin Group (2/36 patients) ($P>0.05$). (3)The length of hospital stay (including total, pre-ablation and post-ablation hospital stay) was significantly shorter in Dabigatran Group than in Warfarin Group.

CONCLUSIONS Compared with oral warfarin, the effectiveness and safety of oral Dabigatran have no inferior effect in the patients undergoing catheter ablation and CV of AF. Dabigatran could be safely and effectively used in these AF patients with low or middle risk of thromboembolism, and could significantly decrease the length of hospital stay.

GW28-e1147

Different approaches for catheter ablation of para-Hisian accessory pathway: Implication for mapping and ablation

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OBJECTIVES Catheter ablation of para-Hisian accessory pathways (APs) has been challenging because of the neighboring conduction tissue. Some different approaches, including the inferior vena cava approach (IVC-A), the non-coronary cusp approach (NCC-A) or the superior vena cava approach (SVC-A), have been reported [4-6]. However, when should the para-Hisian AP be mapped and ablated by the IVC-A, NCC-A or SVC-A is not clarified.

METHODS This study included 55 consecutive patients (mean age 53±11 years, 36 males) with para-Hisian APs. According to the approach with successful ablation, these patients were divided into IVC-A, NCC-A and SVC-A groups. The clinical characteristics, surface electrocardiogram (ECG), intra-cardiac electrogram findings, and response to ablation were analyzed.

RESULTS The para-Hisian APs were eliminated by IVC-A in 48 of the 55 (87.3%) patients, including initial ablation by arbitrary NCC-A failed in all 9 consecutive patients. The incidences of para-Hisian APs requiring NCC-A (4/55 patients, 7.3%) and SVC-A (3/55 patients, 5.5%) were relatively low. During mapping at the para-Hisian region, the focal ventricular and atrial potentials fused well during retrograde AP conduction in 45/48 patients in IVC-A group, 0/4 patients in NCC-A group and 1/3 patients in SVC-A group, respectively. There was no significant difference in the pre-excitation characteristics among the IVC-A, NCC-A and SVC-A groups.

CONCLUSIONS Most of the para-Hisian APs can be safely and effectively ablated by IVC-A, and ablation in the NCC is not an initial or a preferred approach. The degree of VA fusion in the para-Hisian region during retrograde AP conduction can differentiate or predict successful ablation by IVC-A, NCC-A or SVC-A in most patients with para-Hisian AP.

GW28-e1148

Catheter Ablation and Electrophysiological Identification of Epicardial Atrioventricular Accessory Pathway Located in the Great Cardiac Vein

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OBJECTIVES It has been reported that the most common form of epicardial accessory pathway (AP) results from a connection between an extension of the coronary sinus (CS) myocardial coat along the middle cardiac vein(MCV), posterior coronary vein(PCV), or neck of a CS diverticulum and the left ventricular epicardium. The purpose of the study was to determine the incidence and electrophysiological identification of epicardial accessory pathway originated in the great cardiac vein(GCV).

METHODS The epicardial APs represent 1.9% (53/2823 patients) of all cases with left APs referred to our institution for ablation. Among the 53 epicardial cases, incidence of the rare APs arising from the region of GCV was 7.5% (4/53).

RESULTS A CS myocardial coat extension (CSE) potential which preceded the earliest atrial activation at CS with activation sequence from distal to proximal during ventricular pacing and orthodromic reciprocating tachycardia was recorded in the GCV in all the 4 patients. The intervals of ventricular activation to CSE potential remained unchanged at the site of earliest retrograde LA activation after intra-atrial conduction block.

CONCLUSIONS CSE potentials in the distal CS bridging ventricular and atrial electrograms during retrograde AP conduction supports the hypothesis of epicardial APs originated in the GCV.

GW28-e1149

Three-dimensional reconstruction analysis of the esophagus, left atrium, and pulmonary veins: Implications for cryoablation of atrial fibrillation

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