Catheter Ablation versus Antiarrhythmic Drugs for Atrial Fibrillation: An Overview of Systematic Reviews

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Objectives: Atrial fibrillation (AF) is the most frequent arrhythmia seen in clinical practice. Antiarrhythmic drug (AAD) has a modest long-term efficacy and the potential for serious side effects. Catheter ablation (CA) is now considered as a viable alternative to AAD in maintaining sinus rhythm in patients with AF. Numerous systematic reviews comparing CA with AAD for AF have already been published. Then, it is necessary and important to summarise the results of these SRs in an overview. To conduct an overview of SRs that evaluates the efficacy and safety of CA comparing with AAD for patients with AF.

Methods: We searched the Cochrane Library, PubMed, EMBASE, Web of Science and Chinese databases (CBM, CNKI and Wanfang) electronically and also retrieved papers from other sources, such as searching the reference lists of all included reviews and carrying out a citation search of those papers which cited studies included in the reviews. All cases were collected to form a database with AAD for AF and CA. We did not restrict inclusion by the kinds of CA or AAD. Two investigators independently screened studies, extracted data and assessed the methodological quality. A non-Cochrane systematic review showed similar survival of patients with AF undergoing CA compared with AAD after 12 months of follow-up, and with no difference in the rates of stroke or transient ischemic attack. Synthesized results of other sixteen SRs demonstrated that CA is superior to AAD for patients with paroxysmal or persistent AF, which was associated with higher efficacy rates and a lower rate of serious complications. Additionally, three SRs performed the economic evaluation compared between CA and AAD, and the synthesized analysis indicated that compared to the AAD strategy, CA had a higher costs with better effectiveness.

Conclusions: Evidence from the present SRs suggest that CA may be a better treatment option compared to AAD in the management of AF. We can consider CA as a relatively effective and well-tolerated procedure for maintaining sinus rhythm. However, the comparison of long-term efficacy and safety between CA and AAD, as well as economic variable, should be further evaluated by more large sample and high quality studies. Ongoing clinical trials in the future may provide further information for guidance on these treatment options for AF.

GW25-c3147
Radiofrequency catheter ablation Of right atrioventricular accessory pathway via unconventional left subclavian venous access

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Conclusions: Combining the advantages of efficient, safe, durable, high intelligence, information can be stored. Model IRL can be obtained from the burden of atrial fibrillation, ventricular rate during atrial fibrillation, the diurnal average heart rate, heart rate variability and trends in activity. It provide objective basis for clinical judgment, ablation of atrial fibrillation occurred recurrence rate and other cardiac events, and help for the reasonable application of antiarrhythmic drugs, help to reduce the risk of ischemic and hemorrhagic events; anti arrhythmic drugs or radio frequency ablation again provide reasonable and effective therapy.

GW25-c31729
Combining use of Amiodarone and Ensmol In Management of Patients with Ventricular Electrical Storm

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Conclusions: IRL has the advantages of efficient, safe, durable, high intelligence, information can be stored. Model IRL can be obtained from the burden of atrial fibrillation, ventricular rate during atrial fibrillation, the diurnal average heart rate, heart rate variability and trends in activity. It provide objective basis for clinical judgment, ablation of atrial fibrillation occurred recurrence rate and other cardiac events, and help for the reasonable application of antiarrhythmic drugs, help to reduce the risk of ischemic and hemorrhagic events; anti arrhythmic drugs or radio frequency ablation again provide reasonable and effective therapy.

GW25-c3372
Variation and significance of serum CARP, hs-CRP in patients with atrial fibrillation

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Objectives: To explore the changes of serum levels of CARP, hs-CRP in patients with atrial fibrillation and its significance, and survey the relationship among CARP, hs-CRP and cardiac function.

Methods: 124 patients of our department were divided into atrial fibrillation group (n=64) and sinus rhythm group (n=60) according to ECG. The two groups were compared in the aspects of patients’ basic characteristics, the variation of serum CARP, hs-CRP and cardiac function, and the correlation among them.

Conclusions: CARP and hs-CRP may serve as an independent index of atrial fibrillation. The levels of serum CARP, hsCRP may serve as an independent index of atrial fibrillation. The levels of serum CARP, hsCRP may serve as an independent index of atrial fibrillation. The levels of serum CARP, hsCRP may serve as an independent index of atrial fibrillation.
2012. The references in the included literature were also retrieved. The extracted data was analyzed using RevMan 5.1 software.

**Results:** Twelve qualified trials involving 1,131 AF patients were included. The results of meta-analysis showed that: in an overall pooled estimation, compared with PVI alone, the rates of sinus rhythm maintenance (relative risk 1.17, 95% confidence interval 1.04-1.32, P=0.008) were increased by PVI plus adjunctive ablation of CFAEs. Subgroup analysis demonstrated that PVI plus adjunctive ablation of CFAEs increased the rates of sinus rhythm maintenance in paroxysmal AF (relative risk 1.12, 95% confidence interval 1.01-1.24, P=0.03) and persistent AF (relative risk 1.32, 95% confidence interval 1.14-1.53, P<0.0003). Adjunctive ablation of CFAEs significantly increased mean procedural, fluoroscopy, and RF application time. The risk/benefit profile of adjunctive ablation of CFAEs needs further evaluation with additional studies and long-term follow-up.

**Objectives:** To analyze the difference of the safety and effectiveness of pulmonary vein isolation (PVI), the outcome of long-term follow-up after first-time ablation between saline-irrigated radiofrequency catheter ablation (RFCA) and cryoballoon ablation (CBA) for patients with atrial fibrillation (AF).

**Methods:** 26 patients with type A Wolff-Parkinson-White syndrome (WPW syndrome) and diameter of radial artery were randomized to undergo CBA, as same as RFCA, can achieve the high safety and the effectiveness of immediately PVI, the long-term follow-up outcome for patients with PAF.

**Results:** A total of 158 patients were enrolled (CBA: 103; RFCA: 55). There were no difference on the immediate rate of PVI achievement (98.3% vs. 98.1%) and the incidence rate of procedure-related complications (2.9% vs. 3.6%). The CBA group had a shorter the mean time(20.14, 32.0min vs. 28.16, 43 min, P=0.0001) and a lower mean accumulated dosage of X-ray exposure (39783 [24528, 245559] mGy/cm2 vs. 63306 [26478, 138753] mGy/cm2, P=0.0007), a shorter mean procedure time (115 [80, 151] min vs. 159 [120,218] min, P=0.0001) and a shorter mean ablation time (35 [24, 55] min vs. 49 [17,71] min, P=0.0004) than the RFCA group. During a mean 18±8 months follow-up, 37 patients were lost to follow up, and the successful-treatment rate was 66.9% (81/121). There was no difference of the successful-treatment rates between the CBA group and the RFCA group on the 3rd, 6th, 9th, 12th, 18th month follow-up: 95.8%, 95.8%; 76.1%, 76.1%; 60.6%, 60.6% in sequence; RFCA group: 90.0%, 78.0%, 78.0%, 72.0%, 72.0% in sequence). The CBA group was significantly superior to the RFCA group in the incidence and the differences between the groups of class, class III and class IV were significant (P<0.01). The correlation between levels of serum CARNP and BNP was positive (r=0.917, P<0.01). The levels of serum CARNP negatively correlated with left ventricular ejection fraction (r=−0.848, P<0.01). The CBA group was closely related to BNP and patients with heart failure, which demonstrate that CARNP testing might be new biochemical markers of helpful to assist diagnosing heart failure.

**Objectives:** The aim of this study was to investigate the predictive value of CHA2DS2-VASc score for left ventricular mechanics impairment and intra-ventricular dyssynchrony in atrial fibrillation patients.

**Methods:** Echocardiographic examinations were performed in 100 patients with nonvalvular atrial fibrillation and 43 control subjects. Global longitudinal strain (GLS) and circumferential strain (GCS) were acquired as a measure of longitudinal and circumferential systolic mechanics while early diastolic global longitudinal strain rate (eGLSR) and circumferential strain rate (eGCSR) were acquired as a measure of longitudinal and circumferential diastolic mechanics of left ventricle respectively. Standard deviation of time to regional peak longitudinal strain (SDT-S) and early diastolic strain rate (SDT-eSR) were acquired as a measure of intra-ventricular dyssynchrony. Both the whole subjects and the subjects with atrial fibrillation were divided into three groups: low-risk group (CHA2DS2-VASc=0), moderate-risk group (CHA2DS2-VASc=1) and high-risk group (CHA2DS2-VASc ≥2). Results: In the whole subjects, GLS was significantly reduced in high-risk group than in low-risk group (14.29±4.38% vs. 16.83±3.43%, P<0.01) and moderate-risk group (14.29±4.38% vs. 17.12±4.18%, P<0.01). EGCSR was lower in high-risk patients than low-risk patients (1.93±0.76% vs. 2.41±0.90%, P<0.05) while SDT-S was significantly increased in high-risk patients than low-risk patients (4.28±4.84 ms vs. 38.78±12.87 ms, P<0.05) and moderate-risk patients (49.41±23.44 ms vs. 37.81±17.15 ms, P<0.05). Subgroup comparison between subjects with atrial fibrillation and the control subjects showed GCS (19.58±8.50% vs. 29.68±8.36%, P<0.001), GCS (15.45±4.48% vs. 18.87±3.04%, P<0.005) and eGCSR (1.09±0.78% vs. 2.61±0.76%, P<0.01) were significantly reduced in subjects with atrial fibrillation than control subjects while SDT-eSR was higher (44.12±20 ms vs. 31.9±7 ms, P=0.010) in subjects with atrial fibrillation than in control subjects. Stepwise multivariate regression analysis revealed CHA2DS2-VASc score to be an independent predictor of LVEF and GLS in the whole subjects (β=−0.33, adjusted R²=0.10, P<0.01; β=−0.29, adjusted R²=0.34, P=0.001) and in subjects with atrial fibrillation (β=−0.32, adjusted R²=0.09, P=0.026; β=−0.26, adjusted R²=0.29, P=0.010) as well. Stepwise multivariate regression analysis revealed CHA2DS2-VASc score plus adjunctive ablation of CFAEs needed further evaluation with additional studies and long-term follow-up.