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Modified HAS-BLED, ATRIA bleeding, and ORBIT scores as predictors of bleeding complication of catheter ablation for atrial fibrillation: a sub-analysis of JACRE Registry
K. Inoue1, K. Hirota2, K. Aonuma3, M. Kimura4, K. Kumagai5, Y. Miyachi6, E. Tsushima1, K. Okumura7 on behalf of JACRE registry investigators. 1Sakurabashi Watanabe Hospital, Osaka, Japan; 2Tokyo Medical and Dental University, Heart Rhythm Center, Tokyo, Japan; 3Tsukuba University Hospital, Cardiovascular Division, Institute of Clinical Medicine, Faculty of Medicine, Tsukuba, Japan; 4Hirotsu University Graduate School of Medicine, Division of Cardiology, Hirotsu, Japan; 5Fukuoka Sanno Hospital, Heart Rhythm Center, Fukuoka, Japan; 6Nippon Medical School of Chiba, Department of Cardiovascular Medicine Chiba Hokousai Hospital, Chiba, Japan; 7Hirotsu, Graduate School of Health Science, Hirotsu, Japan; 8Saiseiki Kumamoto Hospital, Division of Cardiology, Kumamoto, Japan

Background: Catheter ablation (CA) is an important treatment option for patients with atrial fibrillation (AF); however, a risk of bleeding complications is one of its drawbacks. Therefore, risk stratification of bleeding would be clinically valuable. Purpose: To assess whether bleeding risk scores for AF patients on oral anticoagulants, such as modified HAS-BLED (m-HAS-BLED), ATRIA bleeding, and ORBIT score, are useful to estimate the bleeding risk of CA for AF.

Methods: We investigated 1322 patients consecutively enrolled in JACRE registry, which is a prospective, multicenter registry of AF patients receiving CA. Rivaroxaban (n=1118) or warfarin (n=204) was administered during the CA perioperative period, and the incidence of complications up to 30 days after CA was recorded. m-HAS-BLED score excluding labile international normalized ratio elements from HAS-BLE score, ATRIA bleeding score, and ORBIT score were used to estimate the risk.

Results: Periprocedural bleeding complications were observed in 42 patients (3.2%), and the m-HAS-BLED, ATRIA bleeding, and ORBIT score were significantly associated with them [hazard ratio (95% confidence interval), 1.46 (1.06–2.01), 1.16 (1.00–1.35), and 1.29 (1.06–1.57), respectively]. Their incidence was similar between patients with moderate risk defined as m-HAS-BLED score of 2, ATRIA bleeding score of 2 to 5, and ORBIT score of 2 to 3 and those with each score of 0 or 1, respectively. Whereas, the risk of bleeding was significantly higher in those with m-HAS-BLED score of ≥3 [4.70 (2.06–10.73), ATRIA bleeding score of ≥6 [3.76 (1.47–8.19), and ORBIT score of ≥4 [3.68 (1.60–8.44)] than in those with each score of 0–1, respectively.

Conclusions: m-HAS-BLED score, ATRIA bleeding score, and ORBIT score could be beneficial to assess the periprocedural bleeding risk of CA for AF, and patients with each score of ≥3, ≥6, and ≥4 were stratified to be at high risk.

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Figure 1s

Figure 1s: Risk stratification of periprocedural bleeding complications of atrial fibrillation ablation by bleeding risk scores

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The impact of pulmonary veins anatomy on the outcomes of cryoballoon ablation in patients with atrial fibrillation
T.Y. Chichkova, S.E. Mamchur, E.A. Khomenko, I.N. Mamchur. Research Institute for Complex Issues of Cardiovascular Diseases, Kemerovo, Russian Federation

Background: A number of studies have shown that cryoballoon ablation (CBA) was noninferior to radiofrequency ablation (RFA) with respect to efficacy and safety for the treatment of patients with drug-refractory paroxysmal atrial fibrillation (AF). Circumferential contact of cryoballoon and pulmonary vein (PV) ostium is an important factor for achievement of pulmonary vein isolation (PVI). However, the presence of different anatomical variants of PVs can make challenge for PV occlusion. There is no consensus about the impact of PV anatomy on CBA outcomes.

Purpose: We aimed to assess the impact of pulmonary vein anatomical patterns on cryoballoon outcomes in patients with drug-refractory paroxysmal AF.

Material and methods: The single-center prospective study included 94 patients (males: 51.1% (48), mean age 55.9±9.8) with symptomatic paroxysmal AF resistant to antiarrhythmic therapy. The mean AF duration was 4 years (1.5; 5). Recurrent AF after previous RFA occurred in 5 patients. Prior to CBA a multislice computerized tomography (MSCT) was performed for visualization of PV anatomy. The PV variation pattern was evaluated according the model described by Marom.

The patients were divided into 2 groups – a group of typical PV anatomy (4 separate ostia of PVs) and a group of variant PV anatomy (1.1a, 1.b, 2.b, 3.a, Marom, 2004). Baseline characteristics were similar in the both groups. Cryoballoon procedures were performed using 28-mm second generation balloon in all the patients. Circular mapping catheter was used to verify PVI in more than 95% of the cases.

Results: PV variations were in 13.8% (13) of the cases. Left common trunk/ostium was revealed in 11 patients. There were no significant differences between the groups in procedural data – duration of procedure (75 min (46; 105) vs 60 min (52; 70), p=0.40) and fluoroscopy time (17min (16; 23.7) vs 20 min (16.3; 23.8), p=0.64).

The rate of procedural complications such as phrenic nerve palsy (6.9% vs 3.7%) and complications of vascular access (3.19% vs 2.5%) did not differ between the groups (p>0.05). Postoperative pericarditis occurred in 2 cases with the presence of left common trunk/ostium and was not observed in the group with typical anatomy.

The presence of left common trunk/ostium was associated with long-term failure of cryoballoon procedure (picture 1). The presence of accessory veins didn’t affect CBA outcomes.

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Causes and risk factors for 30-day readmissions in patients with atrial fibrillation and atrial flutter after a cardiac ablation
A. Lemos1, K. Sudi1, S.A. Ahsan1, F. Ghooltaba1, C. Basadre2, E. Aziz1, 1Icahn School of Medicine at Mount Sinai S. Luke's and Mount Sinai W, New York, United States of America; 2University of Texas Health Science Center, San Antonio, United States of America

Background: Readmissions constitute a major healthcare burden among patients undergoing cardiac ablation for atrial fibrillation (AF) and/or atrial flutter (Aflutter). We aimed to study the etiologies for readmissions and the factors affecting readmission after cardiac ablation for AF and Aflutter.

Methods: All adult patients readmitted within 30 days after undergoing cardiac ablation for AF and/or Aflutter were included from the National Readmission Database (2014). ICD9 codes were used to identify AF, Aflutter, cardiac ablation, and the etiologies for readmission based on their primary diagnosis. Multivariate logistic regression was used to assess for statistical significance and a p-value less than 0.05 was considered significant.

Results: We included 17,478 patients that underwent cardiac ablation for AF and/or Aflutter during January to November of 2014. Twelve percent (2,089) were readmitted within 30 days. We found that the presence of congestive heart failure, hypertension, diabetes, acute respiratory failure, end stage renal disease, chronic lung disease and peripheral vascular disease were risk factors for a readmission within 30 days of discharge. Weekend admission, length of stay more than 3 days, female gender, and age more than 75 years were also risk factors for recurrent AF. Cardiac conditions represented more than 50% of the etiologies for 30-day readmissions.

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