ratio of energy delivery and the average temperature reached during an ablation session had no effect on MEG generation.

Conclusions: Several biophysical parameters of energy delivery demonstrated a significant correlation with a higher rate of microembolism production during PV with the PVAL. Most of these parameters can be linked to a variable or poor electrode-tissue contact. Modifications in the catheter design and in the software regulation of the temperature handling of the generator might improve the safety of this technology.

5852 | BENDIX

Incidence of periprocedural complications with dabigatran versus other current anti-coagulation modalities for patients undergoing an atrial fibrillation ablation

K. Strider, E. Daud, J. Hummel, R. Augustini, R. Weiss, J. Tyler, T. Rhodes, M. Hounsee, M. Sachdev, S. Kalbfleisch. The Ohio State University Medical Center, Columbus, United States of America

Purpose: In October of 2010, the FDA approved dabigatran etexilate to prevent thromboembolic events in patients with atrial fibrillation (AF). There is a paucity of data to evaluate the risk of periprocedural complications (PC) in patients undergoing an AF ablation using dabigatran as the anticoagulation agent.

Methods: We retrospectively reviewed 422 charts of patients with persistent or paroxysmal AF who underwent a radiofrequency ablation from January of 2011 to January 2012 at our institution. We placed patients into groups based on their peri-procedural anticoagulation: dabigatran (150 mg BID, 15 with 110 mg BID). Pre-dose samples were obtained in the morning.

Methods: Plasma concentrations were measured using liquid chromatography with mass-spectrometry (LC-MS/MS) and effects estimated by Heparin Titration (HTI, r² = 0.76) and Ecarin clotting assay (ECT, r² = 0.81.

Conclusions: We found a moderate to strong correlation between dabigatran concentrations in plasma and the HTI and ECA assays. These methods may thus be used to roughly estimate the intensity of dabigatran anticoagulation in a clinical setting. However, low values should be cautiously interpreted, especially for HTI. LC-MS/MS is the gold standard and the only method that can be used to monitor low levels or infer absence of dabigatran. The aPTT assay was insufficiently sensitive to dabigatran and PT-INR is not useful at all. Most real life patients with a normal CrCl had plasma concentrations of dabigatran in the low range (compared to FDA-data from the RE-LY study). Thus, the bleeding risk may not be imminent while protection against stroke could be limited in prothrombotic real life AF patients.

Rapid Fire – Move to the Third Dimension

5855 | BENCH

Dobutamine stress echocardiography: is 3D ready for prime time?

P. Belkova, B. Shitvalkar, K. Wouters, C. Van De Heyning, C. De Maeyer, P. Verheer, C. Vrints. Antwerp University Hospital, Antwerp, Belgium

Purpose: Accurate and reproducible evaluation of regional function remains challenging in Dobutamine stress echocardiography (DSE), especially in patients with occlusion. We retrospectively reviewed 422 charts of patients with persistent or paroxysmal AF who underwent a radiofrequency ablation from January of 2011 to January 2012 at our institution. We placed patients into groups based on their peri-procedural anticoagulation: dabigatran (150 mg BID, 15 with 110 mg BID). Pre-dose samples were obtained in the morning.

Methods: We included 146 consecutive patients indicated for DSE (GE Vivid 7). All patients had a standard 2D acquisition (eye balling), longitudinal strain (LS) by speckle tracking, 3D analysis by endocardial and epicardial endocardial segmentation and full volume acquisitions with and without myocardial contrast (MCE, Sonovue, single shot 0.4 ml given at rest and peak stress) for left ventricular opacification. Chi-square test was done to assess the relationship between echocardiographic data and early recanalization. Kappa statistic was performed to assess agreement between 2D and 3D echocardiography.

Results: The mean age was 63±12 years (61% males, BMI 26.4±4.3) and 78/146 (53%) with known coronary artery disease. Only one third of the patients had a well-controlled medical regimen at baseline with a mean HbA1C 7.0±1.7% and a mean systolic blood pressure of 137±21 mmHg. 85% of the patients were smokers, 49% had hypertension, 16% had coronary artery disease. 24 patients had a groin hematoma, 2 had hemoptysis, 1 had a spontaneous or traumatic intracranial hematoma and 9 had other complications. Of the 9 major complications, 5 patients had pericardial tamponade, 3 had a TI or stroke, and 1 patient had a MI. Of the 34 minor complications, 24 patients had a groin hematoma, 2 had hemoptysis, 1 had a spontaneous orbital hematoma, 3 had a GI bleed and 1 had a small pericardial effusion, and 3 had hemothorax. Each anti-coagulation group had comparable amount of patients with paroxysmal and persistent AF (p = NS). There was no difference in the rate of major or minor PCs between any of the anticoagulation groups (p = 0.67 and 0.39 for D vs WC and major and minor PC respectively and p = 0.99 and p = 0.06 for D vs WH for major and minor PCs respectively).

Conclusions: Dabigatran is becoming a widely used medication for patients with AF; but little is known about the risk of PCs for patients using dabigatran around the time of an AF ablation. In our series of 422 patients there was no difference in the rate of major or minor PCs for patients on periprocedural dabigatran as compared to warfarin based anti-coagulation strategies.

5854 | BENDIX

Methods to monitor dabigatran: first clinical experience in patients with atrial fibrillation

M. Skeppholm1, J. Muhrbeck2, J.P. Antecu1, J. Erint1, Y. Ronquiot-Ni1, A. Poirel1, E. Beck1, P. Hjelmsdal1, R.E. Malmstrom1,1 Karolinska Institute, 2Karolinska Institute, Dept of Coagulation Research, Institute for Molecular Medicine and Surgery, Stockholm, Sweden; 3Karolinska Institute, Dept of Clinical Sciences, Cardiovascular Medicine, Stockholm, Sweden

Purpose: Atrial fibrillation (AF) is a major cause of thromboembolic stroke. The oral direct thrombin inhibitor dabigatran is increasingly used in patients with AF. Routine laboratory monitoring is currently not recommended for dabigatran, but there are situations (e.g. surgery, bleeding or thromboembolism during treatment, compliance) when measurements of the drug and/or its effect are desirable. We compared measurements of dabigatran plasma concentrations with four functional methods in a well-defined real-life cohort of patients with AF.

Methods: We studied 73 patients with AF, median age 68 (range 49-86) years, 66% men, mean CHA2DS2-VASc score 1.6. 58 were treated with dabigatran 150 mg BID, 15 with 110 mg BID. Pre-dose samples were obtained in the morning.

Results: The median dabigatran concentration by LC-MS/MS was 51 ng/mL with marked variation (range 9-163). There were moderate to strong correlations between LC-MS/MS and effects estimated by HTI (r² = 0.76) and ECT (r² = 0.81). The lowest calibration for HTI was 30 ng/mL. APTT correlated more weakly with dabigatran concentrations (r²=0.40; p=0.001); PT-INR could be normal even at therapeutic dabigatran concentrations and could be prolonged despite low concentrations. PT-INR did not correlate with LC-MS/MS. Median CrCl was 86 mL/min (range 39-155) and there was no obvious correlation between CrCl and plasma concentrations, HTI or ECT.

Conclusions: We found a moderate to strong correlation between dabigatran concentrations in plasma and the HTI and ECA assays. These methods may thus be used to roughly estimate the intensity of dabigatran anticoagulation in a clinical setting. However, low values should be cautiously interpreted, especially for HTI. LC-MS/MS is the gold standard and the only method that can be used to monitor low levels or infer absence of dabigatran. The aPTT assay was insufficiently sensitive to dabigatran and PT-INR is not useful at all. Most real life patients with a normal CrCl had plasma concentrations of dabigatran in the low range (compared to FDA-data from the RE-LY study). Thus, the bleeding risk may not be imminent while protection against stroke could be limited in prothrombotic real life AF patients.

5856 | BENDIX

Regional contractility as predictor for left ventricular reverse remodeling after recanalization for chronic total occlusions - a 3D echocardiographic study

T. Benedek, M. Chiu, C. Matei, Z.S. Suciuc, B. Jako, K. Pal, I. Benedek. University Hospital, Gazi University, Ankara, Turkey

Introduction: The present study aims to identify 3D echocardiography-derived parameters to predict regression of LV remodeling in patients with chronic total occlusion (CTO) of Left Anterior Descending Artery (LAD), based on 3D assessment of regional and global contractility.

Methods: In total, 38 subjects with successful reopening of an LAD chronic total occlusion were enrolled. Regression of ventricular remodeling (RR) was defined as ≥15% reduction of LV end-diastolic diameter at 3 months after the occluded LAD. Patient groups were: gr.1 - 22 pts with RR, gr.2 - 16 pts without RR.

Results: All patients underwent computerized 3D echocardiography with complex assessment of global and regional function and remodelling, based on classic parameters (EF, ventricular volumes) and on 3D regional index of contraction amplitude (ICCA) defined as the sum of maximum contraction amplitude divided by segments irritated by the infarct-related artery divided by the number of these segments. Results: Group 1 presented lower baseline values for EF (46.60±6.08% vs 49.39±3.46, p=0.008) and higher baseline values for EDV (49.38±3.46 ml ver-