

26.7 ± 10.1 and 28.0 ± 10.6 mmHg, $p=0.3730$, MG 5.5 ± 3.6 and 5.5 ± 3.3 mmHg, MVA 2.06 ± 0.42 and 1.90 ± 0.40 cm², $p=0.0090$.

CONCLUSION The groups with and without prior mitral commissurotomy in MBV were compared and no differences were found in pre- and post-procedure, as mean pulmonary artery pressure, mean mitral gradient, mitral valve area, and mitral regurgitation. Although PMCG was older, with higher ES, its hemodynamics data were similar. When the entire group was divided based on echo scores, those with echo scores >8 had high MV ($p=0.0090$), and smaller mitral valve areas post-valvuloplasty. The valve anatomy was more important than prior commissurotomy.

CRT-700.49

Mitral Balloon Valvuloplasty Long-term Follow-up of Single Balloon Versus Inoue Balloon Techniques. Independent Predictors of Survival and Event-Free Survival



Ivana Picone Borges Aragao,¹ Rodrigo Peixoto,¹ Ricardo Peixoto,¹ Alexandre Augustus Brito Aragao,¹ Ivan Lucas Picone Borges Anjos,² Livia Liberata Barbosa Bandeira,² Vanessa Freitas Marcolla,¹ Edison Carvalho Sandoval Peixoto¹
¹Polícia Militar do Estado do Rio de Janeiro - Governo do Estado, Rio de Janeiro, Brazil; ²Severino Sombra University, Vassouras, Brazil

BACKGROUND The single balloon (SB) is the less expensive technique to perform mitral balloon valvuloplasty (MBV). This study aimed to demonstrate that MBV done with SB Balt has a similar outcome and long-term follow-up (FU) than MBV done with the Inoue worldwide accepted technique. From 1987 to 12/31/2013, a total of 526 procedures were performed, being 313 with a FU, 57 (18.8%) with Inoue balloon (IB), the IB group (IBG) and 256 (82.1%) SB Balt group (SBG). The mean FU in IBG was 33±27 (2 to 118) months and in SBG 55±33 (1 to 198) months ($p<0.0001$). Univariate analysis and multivariate Cox analysis were utilized to determine independent prediction of survival variables and event free survival (EFS) in both technique groups being major events (ME): death, cardiac surgery and new MBV.

RESULTS In IBG and SBG there were 43 female patients (75.4%) and 222 (86.7%) procedures, ($p=0.0276$), mean age was 37.3±10.0 (19 to 63) and 38.0±12.6 (13 to 83) years ($p=0.7138$), sinus rhythm 51 (91.1%) and 215 (84.0%), ($p=0.1754$), echo score (ES) 7.6±1.3 (5 to 10) and 7.2±1.5 (4 to 14) points ($p=0.0528$), echo mitral valve area (MVA) pre-MBV 0.96±0.18 and 0.93±0.21 cm² ($p=0.2265$). Post-MBV mean MVA (Gorlin) were 2.00±0.52 and 2.02±0.37 cm² ($p=0.9550$) and at the end of the FU: echo MVA 1.71±0.41 and 1.54±0.51 cm² ($p=0.0552$), new severe mitral regurgitation in 5 (8.9%) and 17 (6.6%) patients ($p=0.5633$), new MBV in 1 (1.8%) and 13 (5.1%), ($p=0.4779$), mitral valve surgery in 3 (5.4%) and 27 (10.4%), ($p=0.3456$), deaths 2 (3.6%) and 11 (4.3%) deaths, ($p=1.000$), cardiac deaths 1 (1.8%) and 9 (3.5%), ($p=1.0000$), ME 5 (8.9%) and 46 (18.0%), ($p=0.1449$). In univariate analysis and in multivariate Cox analysis the SB or IB do not predict survival or event-free survival and independent risk factors to survival in multivariate Cox analysis with 2 models with 5 and 6 variables were age <50 years ($p=0.016$, HR=0.233, CI 95% 0.071-0.764), ES ≤8 ($p<0.001$, HR=0.105, CI 95% 0.34-0.327), MBV dilatation area ($p<0.001$, HR=16.838, CI 95% 3.353- 84.580) and no mitral valve surgery in the FU ($p=0.001$, HR=0.152, CI 95% 0.050-0.459) and to event-free survival: no prior commissurotomy ($p=0.012$, HR=0.390, CI 95% 0.187-0.813) and post-MBV MVA ≥1.50 cm² ($p<0.001$, HR=7.969, CI 95% 3.413-18.608).

CONCLUSIONS MBV with BSB and IB were equally efficient. There were similar survival and EFS in the FU. Independent predictors of survival were age <50 years, ES≤8 points, MBV dilatation area > 7 mm² and no mitral valve surgery in the FU. Independent risk factors of EFS were no prior commissurotomy and post-MBV MVA≥1.50 cm².

CRT-700.50

Echocardiographic Score Influence, Survival and Event-free Survival in Long-term Follow-up of Percutaneous Mitral Balloon Valvuloplasty



Ivana Picone Borges Aragao,¹ Edison Carvalho Sandoval Peixoto,¹ Rodrigo Trajano Sandoval Peixoto,¹ Ricardo Trajano Sandoval Peixoto,¹ Livia Liberata Barbosa Bandeira,² Ivan Lucas Picone Borges Anjos,³ Caio Teixeira Santos,² Sandra Maria Barroso Werneck Vilagra,² Henrik Werneck Vilagra,² Marlon Mohamad Vilagra,² Vanessa Freitas Marcolla,¹ Patricia Rangel Sobral Dantas,² Eucir Rabello,² Alexandre Augustus Brito Aragao¹
¹Polícia Militar do Estado do Rio de Janeiro - Governo do Estado, Rio de

Janeiro, Brazil; ²Severino Sombra University, Vassouras, Rio de Janeiro, Brazil; ³Severino Sombra University, Vassouras, Rio de Janeiro, Brazil

BACKGROUND Percutaneous mitral balloon valvotomy (PMBV) has emerged as an alternative to surgical treatment of mitral stenosis about 30 years ago.

OBJECTIVE To identify the independent predictors of death and combined events (death, new mitral balloon valvotomy, or mitral valve surgery) in long-term follow-up of patients undergoing PMBV.

METHODS From 1987 to 2013 a total of 317 patients were followed-up 156 ± 144(1987 e 2013) months. The techniques were the single-balloon (84.4%), Inoue-balloon (13.8%), and double-balloon techniques (1.7%). The total group was divided in two: echocardiographic score >8 and ≤ 8 points groups. Multivariate Cox regression analyses were performed to identify independent risk factors of long-term survival and event-free survival.

RESULTS The mean age was 38.0±12.6 years old (range, 13 to 83). Before the procedure, 84,42% patients had echo score ≤ 8, and 15.57% score > 8. Females comprised 85%, and 84% patients were in sinus rhythm. During follow-up, survival of the total group was 95.5%, echo score group ≤ 8 was 98.0% and echo score > 8 was 82.2% ($p<0.0001$), whereas combined event-free survival was 83.4%, 86.1%, and 68.9%, respectively. The predictors of combined events were a previous history of mitral valvular commissurotomy, atrial fibrillation, the presence of severe mitral valve regurgitation during the procedure and post-procedure mitral valve area < 1.5 m².

CONCLUSION PMBV is an effective procedure. Survival was high, even higher in the group with lower echocardiographic scores. Over 2/3 of the patients were event-free at the end of follow-up. Independent predictors of survival were pre-procedure echo score ≤ 8 and the absence of severe mitral valve regurgitation during the procedure.

CRT-700.51

Incidence and Treatment of Severe Mitral Regurgitation in Contemporary Clinical Practice



Stephanie Wu, Audrey Chai, Sandra Arimie, Anilkumar Mehra, Leonardo Clavijo, Antreas Hindoyan, Ray Matthews, David Shavelle
 University of Southern California, Los Angeles, CA

INTRODUCTION Mitral regurgitation (MR) is present in approximately 15% of those over the age of 50 years. The purpose of this study was to determine incidence and contemporary treatment for patients with severe MR evaluated at a tertiary academic medical center.

METHODS The echocardiography database at Keck Medical Center of USC was searched from 2011 to 2016 to identify all patients with moderate-severe and severe MR, excluding those with prior mitral valve surgery. MR was classified as primary based upon a primary leaflet abnormality and secondary based upon left ventricular (LV) enlargement with normal leaflets. Demographics, comorbidities, NYHA class, and echocardiographic measurements were collected. Society of Thoracic Surgery Adult Cardiac Surgery Risk calculator (STS score) was used to assess operative risk. Eligibility for surgery was determined based upon current AHA/ACC guidelines. Treatment recommendations were classified as referral to cardiology, referral to cardiothoracic surgery (CTS) and performance of mitral valve surgery or performance of MitraClip.

RESULTS From 2011 to 2016, 1918 echocardiograms were performed and 412 patients with moderate-severe or severe MR were identified (82 patients/year). Mean age was 67.8±17.0 years, 231 (56%) were male, mean ejection fraction (EF) was 42±19% and 42% had EF<35%. Primary MR was present in 158 (38%). Congestive heart failure (CHF) was present in 292 patients (71%). Mean STS score was 8.0±7.9 and 27% had an STS score >10. One hundred nineteen patients (75%) were eligible for mitral valve surgery; 96 patients received mitral valve surgery and 16 patients received MitraClip. The majority of patients were referred by cardiology (359, 87%) and 227 (55%) were referred to CTS. Of those eligible for surgery, lack of follow-up was the most common reason for not receiving mitral valve surgery. The presence of CHF symptoms and other significant valve disease were associated with referral to CTS. Primary MR, lower STS score and higher EF were associated with receiving mitral valve surgery.

CONCLUSION The incidence of moderate-severe and severe MR in patients evaluated at a tertiary academic medical center was approximately 80 patients per year. Although the majority of patients were evaluated by cardiology, only 50% were referred to cardiothoracic surgery. Additional study is required to understand referral

patterns and improve access to newer therapies for MR, such as MitraClip.

CRT-700.52

Optimal Mitral Valve-in-valve Sizing and Positioning Using Braile Inovare[®] Transcatheter Valve: An In Vitro Analysis



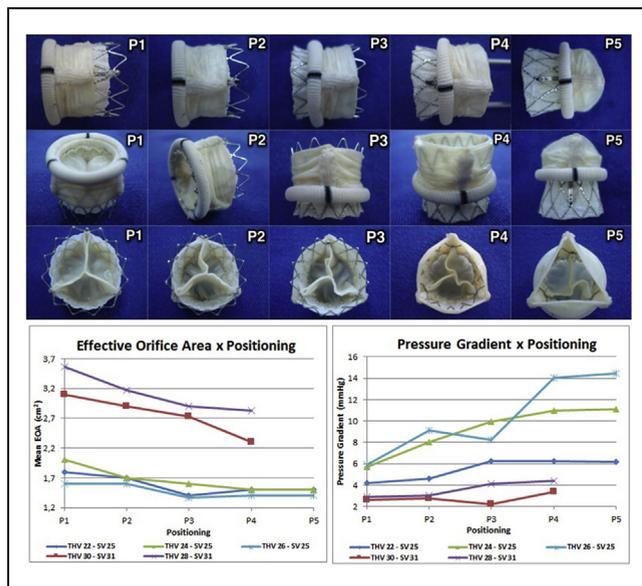
Giovanni Braile Sternieri,¹ Danilo Antonio da Silva,² Vinicius Ladeia Semenzim,³ Glaucia Frazzato,³ Sofia Braile,⁴ Valeria Braga Braile,³ Honório Palma,⁵ Domingo Marcolino Braile³
¹PUC-Campinas, Campinas, Brazil; ²Braile biomédica, São José do rio preto, Brazil; ³Braile biomédica, Sao Jose do Rio Preto, Brazil; ⁴UNOESTE, Presidente Prudente, Brazil; ⁵Universidade de São Paulo, São Paulo, Brazil

BACKGROUND Transcatheter Heart Valves (THV) are the most innovative solutions for heart valve diseases. Valve-in-valve (ViV) procedure is a good alternative to reoperation, once 20-35% of mitral surgery need reintervention within 10 years and this kind of procedure is risky. The appropriate positioning for mitral ViV implantation using the bioprosthesis as a reference is not well defined and there are few studies exploring this subject. Therefore, this study prospectively the influence on in vitro hydrodynamic performance of Inovare[®] THV (Braile Biomédica, Brazil), a balloon expandable one, in regard to mitral ViV implantation in different depths and oversizing.

METHODS Inovare[®] THV of 22, 24, 26, 28 and 30 mm were implanted within four Braile's surgical valve (SV) sizes (25, 27, 29 and 31 mm) on a pulse duplicator, testing different hemodynamic conditions. Oversizing from 4 to 24% and 5 different implantation depths were considered.

RESULTS Results show an optimal deployment depth range. Deeper positioning (ventricular) shows better hemodynamic performance in comparison to upper positioning (atrial), besides an appropriate oversizing of Inovare[®] THV related to Braile bioprosthesis is a determinant factor to define the best depth range implantation.

CONCLUSION Considering that there are no previous reports for mitral ViV with Inovare[®] THV, these findings may encourage researchers to study other correlations concerning mitral ViV, extending these analyzes for better and safer clinical results.



CRT-700.53

Immediate Hemodynamic & Echocardiographic Results of Percutaneous Transvenous Mitral Commissurotomy in Patients of Symptomatic Mitral Stenosis with Mitral Annular Calcification



Toufiqur Rahman, MD
 National Institute of Cardiovascular Diseases, Dhaka, Bangladesh

OBJECTIVES To see the immediate hemodynamic and echocardiographic results of Percutaneous Transvenous Mitral Commissurotomy (PTMC) in patients with mitral stenosis with mitral annular calcification.

BACKGROUND Rheumatic mitral stenosis is a very common problem in our population having an incidence of 54 percent among rheumatic heart disease with a female preponderance of 2:1. Percutaneous balloon mitral commissurotomy is appealing because the mechanism of valve dilation closely parallels the mechanism of surgical mitral commissurotomy. Mitral annular calcification (MAC) is degenerative, fibrous calcification of the mitral valve annulus. Wilkins scoring system does not examine MAC, which is characterized by calcium and lipid deposition within the annular fibrosa of the mitral valve and might independently influence the PTMC result .

METHODS A prospective study was done during the period of August 2003 to June 2017. One Thousand Nine hundred and eighty (1980) patients with rheumatic mitral stenosis who underwent PTMC were evaluated clinically, by echocardiography and by catheter, during and after procedure. Out of 1980 patients, 120 patients had mitral annular calcification (Group-1) and 1860 patients had no mitral annular calcification (Group-2).

RESULTS Most of the population are female, 70% in Group-1 and 78% in group-2. After PTMC mean mitral valve area increased from 0.80 ± 0.11 cm² to 1.46 ± 0.27 cm² as measured by echocardiography in group-1 and from 0.85 ± 0.32 cm² to 1.81 ± 0.33 cm² in group-2. Mitral valve gradient reduced to 11.63 ± 4.15 mm Hg from 32.46 ± 03.94 mm Hg after PTMC in group-1 and 10.45 ± 3.76 mm Hg from 26.64 ± 04.12 mm Hg after PTMC in group-2.

CONCLUSION PTMC is an effective procedure for patients with mitral annular calcification, but the result is inferior to patients with no mitral annular calcification .So, mitral annulus evaluation may be considered in the echocardiographic assessment of the mitral apparatus prior to PTMC.

OTHER

CRT-700.54

Alcohol Septal Ablation Produces Similar Changes to CBC as Atherosclerotic Myocardial Infarction but Platelet Counts Are Not Elevated. Is There Less Inflammation With ASA?



Billy J. Mullinax, Mira Patel, Alex Canova, Ashley Waring, Christopher Neilsen, Valerian Fernandes
 Medical University of South Carolina, Charleston, SC

OBJECTIVES To study blood cell count changes after alcohol-induced septal infarct in Hypertrophic Obstructive Cardiomyopathy (HOCM) patients.

BACKGROUND Atherosclerotic myocardial infarction (MI) is a proinflammatory and prothrombotic state associated with neutrophilic leukocytosis, anemia, and increased platelet count and platelet size. The degree of leukocytosis correlates with infarction size and, together with increased platelets, amplifies myocardial inflammation. Alcohol Septal Ablation (ASA) produces a targeted infarction in the hypertrophied septum to reduce left ventricular outflow obstruction. The inflammatory and thrombotic effects of this iatrogenic alcohol-induced infarction have not been studied.

METHODS We evaluated 215 consecutive patients who underwent ASA with pre- and post-ASA hemoglobin, WBC count, platelet counts, and troponin.

RESULTS A total of 215 patients (age 61.37 ± 13.18, 91M, 124F) who underwent ASA were included in the study. Alcohol (2.10 ± 0.69cc) was injected into a targeted septal artery, producing a peak troponin of 53.46 ± 48.80 ng/ml. After ASA, WBC increased from 7.07 ± 2.03 to 8.22 ± 2.57 (p<0.001), hemoglobin decreased from 13.30 ± 1.82 to 12.22 ± 1.98 (p<0.001), and platelet counts decreased from 200 ± 56 to 177 ± 48 (p <0.001). Different tertiles of hemoglobin, WBC, and platelet counts showed no correlation to peak troponin values following ASA. The volume of alcohol injected did not affect the pre- and post-ASA hemoglobin, WBC, and platelet counts.

CONCLUSIONS Compared to atherosclerotic MI, alcohol-induced infarction also leads to an increase in WBC count and anemia, but unlike atherosclerotic MI there is a reduction in platelet count. This suggests that ASA produces a similar inflammatory response with a