RESULTS The incidence of AKI was 9%, and patients with worse baseline renal function were at higher risk of developing AKI (OR: 1.32, 95% CI 1.09-1.61, p=0.004 for each 10ml/min decrease in the glomerular filtration rate). In-hospital bleeding events occurred more frequently in the AKI group (5.3% versus 15.6%, p=0.037). After a median follow-up of 18 months, patients in the AKI group had a higher mortality (HR 2.59, 95% CI 1.36-4.92, p=0.004), more embolic events (HR 6.14, 95% CI 2.23-16.92, p=0.001) and major bleeding events (HR 2.36, 95% CI 0.89-6.24, p=0.083). The occurrence of AKI was an independent predictor of mid-term mortality (HR 2.00, 95% CI 1.02-3.91, p=0.044).

CONCLUSION The occurrence of AKI is relatively frequent in patients undergoing LAAC, and patients with lower renal glomerular filtration rate were at high risk of developing this complication. Acute kidney injury was correlated with worse mid-term outcomes, highlighting the importance of further preventive strategies in this population.

MITRAL VALVE

CRT-700.46

Mitral Balloon Valvuloplasty: Risk Factors for Lack of Success, Severe Mitral Regurgitation and Major Complications

Ivana Picone Borges Aragao,[1] Michele Pereira Nascimento,[1] Ricardo Trajano Sandoval Peixoto,[1] Rodrigo Trajano Sandoval Peixoto,[1] Ivan Lucas Picone Borges Anjos,[2] Livia Liberata Barbosa Bandeira,[2] Lahis Werneck Vilagra,[2] Alexandre Augustus Brito Aragao,[1] Vanessa Freitas Marcolla,[1] Edison Carvalho Sandoval Peixoto[1]
[1]Military Police from Rio de Janeiro State Government, Rio de Janeiro, Brazil; [2]Severino Sombra University, Vassouras, Rio de Janeiro, Brazil

BACKGROUND Mitral balloon valvuloplasty is not always successful and free from complications.

OBJECTIVES To determine the independent risk factors for an unsuccessful procedure, severe mitral regurgitation and major complications in mitral balloon valvuloplasty.

METHODS Longitudinal prospective study of 518 mitral balloon valvuloplasties performed between July 6, 1987 and December 31, 2004, on 429 (82.8%) female patients and 89 (17.2%) male patients with a mean age of 37.5±12.8 years. Major complications were considered to be perforation with cardiac tamponade, stroke and severe mitral regurgitation per procedure. The continuous variables were transformed in categorical variables and the chi-square or Fisher exact tests to compare the categorical variables, and logistic regression and multiple logistic regression were used to identify independent factors for predicting success, incomplete procedure, severe mitral regurgitation and major complications.

RESULTS Success was noted in 452 (94.2%) procedures, with major complications occurring in 22 (4.2%) patients, of which 10 were severe mitral regurgitation; there were no per-procedure deaths, with 4 (0.8%) in-hospital deaths. In the multiple logistic regression, lower age predicted success in the procedure; the only variable that predicted an incomplete procedure was the initial period of the procedure, and a score >11 points predicted severe per-procedure mitral regurgitation. There was no independent predictor of major complications in this study.

CONCLUSIONS Success was related to younger patients, an incomplete procedure to the initial period of the procedure and severe per-procedure mitral regurgitation to an echocardiography score >11 points

CRT-700.47

Long-term Follow-up of Percutaneous Mitral Valvuloplasty With Single Balloon Technique: Survival and Event-free Survival

Ivana Picone Borges Aragao,[1] Edison Peixoto,[1] Ricardo Peixoto,[1] Rodrigo Peixoto,[1] Ivan Lucas Picone Borges Anjos,[2] Livia Liberata Barbosa Bandeira,[2] Caio Teixeira Santos,[2] Lahis Werneck Vilagra,[2] Thais Lemos de Souza Macedo,[2] Dandhara Martins Rebello,[2] Thamires Politano de Sant' Anna Alves,[2] Vanessa Freitas Marcolla,[3] Sandra Maria Barroseo Werneck Vilagra,[2] Alexandre Augustus Brito Aragao[1]
[1]Polícia Militar do Estado do Rio de Janeiro - Governo do Estado, Rio de Janeiro, Brazil; [2]Severino Sombra University, Vassouras, Brazil; [3]Military Police from Rio de Janeiro State Government, Rio de Janeiro, Brazil

BACKGROUND Mitral balloon valvuloplasty with Inoue balloon is the worldwide accepted procedure technique. The aims of this study is to evaluate the long-term follow-up (FU) of mitral balloon valvuloplasty (MBV) with Balt single balloon (BSB) technique and to determine independent predictors of survival and event-free survival (EFS).

METHOD From 1987 to 12-31-2013, 526 procedures of MBV were perfomed, 404 (77.1%) with BSB. There were 256 procedures with long-term FU. Balloon diameter was 25 mm in 5 procedures and 30 mm in 251.Mmean dilatation area was 7.02±0.30 cm². FU was 156 ± 144 months. Multivariate Cox analysis was performed to determine IPS and EFS.

RESULTS Mean age was 38.0±12.6 (13 to 83) years, 222 (86.7%) female gender, 215 (84.0%) sinus rhythm, echo score (ES) 7.2±1.5 (4 to 14) points and echo mitral valve area (MVA) pre-MBV 0.93±0.21 cm². Mean pre and post-MVA (Gorlin): 0.90±0.20 and 2.02±0.37 cm², respectively (p<0.001). Success (MVA ≥1.5 cm²): 241 (94.1%) procedures. Mean pulmonary artery pressure pre and post-MBV: 27±10 and 20±7 mmHg, respectively. Three (1.2%) patients began the FU with severe mitral regurgitation (SMR). At the end of FU 119 (46.5%) patients were in NYHA funcional class (FC) I; 70 (27.3%) in FC II; 53 (20.7%) in FC III; 3 (1.2%) in FC IV; 11 (4,3%) deaths; 17 (8.2%) patients with SMR; 20 (4.7%) were submitted to a new MBV; 27 (10.5%) to mitral valve surgery and 70 (26.3%) without any medicine. Independent predictors of survival were: ES ≤8 points (p<0.001, HR0.116, 95% IC 0.035-0.384), age ≤50 years old (p=0.011, HR 0.203, 95% IC 0.059-0.693) and absence of mitral valve surgery in the FU (p=0.004, HR 0.170, 95% IC 0.050-0.571). Independents of EFS were: absence of prior commissurotomy (p<0.002, HR 0.318, 95% IC 0.151-0.667), female gender (p=0.036, HR 0.466, 95% IC 0.229-0.951) and MVA post-MBV ≥1.50 cm² (p<0.001, HR 0.466, 95% IC 4.884-28.457).

CONCLUSIONS Success in 94% of procedures. At the end of follow-up (25 years) only 4,3% of mortality. The independent predictors of survival were ES ≤8 points, age ≤50 years old and absence of mitral valve surgery in the FU. Independent predictors of EFS were absence of prior commissurotomy, female gender and MVA post-MBV ≥1.50 cm²

CRT-700.48

Prior Surgical Mitral Commissurotomy And Echocardiographic Score Influence in Mitral Balloon Valvuloplasty. Immediate Post-Procedure Results

Ivana Picone Borges Aragao,[1] Edison Carvalho Sandoval Peixoto,[1] Rodrigo Trajano Sandoval Peixoto,[1] Ricardo Trajano Sandoval Peixoto,[1] Vanessa Freitas Marcolla,[1] Livia Liberata Barbosa Bandeira,[2] Ivan Lucas Picone Borges Anjos,[2] Caio Teixeira Santos,[2] Thais Lemos de Souza Macedo,[2] Thamires Politano de Sant' Anna Alves,[2] Lahis Werneck Vilagra,[2] Henrik Werneck Vilagra,[2] Patricia Rangel Sobral Dantas,[2] Alexandre Augustus Brito Aragao[3]
[1]Military Police from Rio de Janeiro State Government, Rio de Janeiro, Brazil; [2]Severino Sombra University, Rio de Janeiro, Brazil; [3]Rio de Janeiro State University, Rio de Janeiro, Brazil

INTRODUCTION Percutaneous mitral balloon valvuloplasty is effective in mitral stenosis.

OBJECTIVES To evaluate prior mitral surgical commissurotomy (PMC) and echocardiographic score (ES) in the results and complications of mitral balloon valvuloplasty (MBV).

METHODS From 1987 to 2013, 526 procedures were performed with Inoue balloon, double or single Balt balloon technique, 480 without PMC named primary MBV group (PMBVG) and 46 that have been submitted to PMC, the PMC group. The PMCG was older than PMBVG (42.7±12.4 vs 36.9±12.5 years, p=0.0030). Gender, atrial fibrilation and NYHA functional class were similar. In PMBVG and PMCG, respectively, ES were 7.2±1,4 and 7.7±1.5 points (p=0.0158) and mitral valve area (MVA) 0.94±0.21 and 1.00±0.22 cm2 (p=0.0699).

RESULTS Pre-MBV: mean pulmonary artery pressures (MPAP) were 37.8 ± 14.2 and 37.6 ± 14.4 mmHg, p=0.9515; mean gradient (MG) 19.6 ± 6.9 and 18.3 ± 6.9 mmHg, p=0.2342; MVA 0.90 ± 0.21 and 0.93 ± 0.19 cm2, p=0.4092, respectively, when comparing PMBVG and PMCG. Post-MBV: MPAP were 26.8 ± 10.2 and 26.6 ± 10.9 mmHg, p=0.9062; MG 5.4 ± 3.5 and 6.3 ± 4.2 mmHg, p=0.1492; MVA 2.04 ± 0.42 and 1.92 ± 0.41 cm2, p=0.0801, respectively. Mitral regurgitation (MR) was similar pre- and post-MBV. There was Severe MR post-MBV in 10 patients: 8 in PMBVG and 2 in PMCG, p=0.2048. As there were no significant diferences found, the total group was divided in ES ≤ 8 and >8 groups: Pre-MBV: MPAP 37.5 ± 13.9 and 39.3 ± 16.6 mmHg, p=0.4041; MG 19.7 ± 6.8 and 18.3 ± 7.3 mmHg, p= 0.1753; MVA 0.90 ± 0.21 and 0.94 ± 0.20 cm2, p=0.0090 respectively. Post-MBV: MPAP

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 datas 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 Peixoto[1]
[1]Polícia Militar do Estado do Rio de Janeiro - Governo do Estado, Rio de Janeiro, Brazil; [2]Severino 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 Mohamud Vilagra,[2] Vanessa Freitas Marcolla,[1] Patricia Rangel Sobral Dantas,[2] Eucir Rabello,[2] Alexandre Augustus Brito Aragao[1]
[1]Polícia Militar do Estado do Rio de Janeiro - Governo do Estado, Rio de Janeiro, Brazil; [2]Severino Sombra University, Vassouras, Rio de Janeiro, Brazil; [3]Severino 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 dentify the independents 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 patientes 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. Independents 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 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