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CARDIAC SURGERY

ORAL COMMUNICATIONS

SELECTED ORAL COMMUNICATIONS
FOR THE MANUEL MACHADO MACEDO AWARD

CARDIAC SURGERY - SELECTED ORAL COMMUNICATIONS

LONG-TERM OUTCOMES OF SURGICAL TREATMENT OF TETRALOGY OF FALLOT

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Introduction
Tetralogy of Fallot (TOF) is the most common cyanotic congenital heart defect.

Objectives
To evaluate long-term outcomes of patients who underwent complete repair of TOF at our institution and to compare the outcomes of patients with pulmonary valve-sparing repair (annulus preserved) versus patients with a transannular patch. We also evaluated the rate of growth of the pulmonary valve annulus and pulmonary arteries.

Materials and Methods
Retrospective study of 142 consecutive children with TOF admitted between April 1998 and April 2019, excluding 4 patients who only had palliative surgery without posterior complete repair and 5 patients who received a right ventricle to main pulmonary artery (RV-PA) conduit with a pulmonary homograft. Patients were divided into two groups, according to the technique to relieve RVOT obstruction: Group 1 - pericardial transannular patch (79 patients) and Group 2 - valve-sparing technique and preserved annulus (54 patients). Pre and post-op echocardiographic measurements, surgical details, postoperative course, and reinterventions were registered.

Results
Mean age was 17±65.86 months (range 11days-22years) and mean weight was 10Kg (2.5-45Kg). Eleven patients had trisomy-21 and 3 had 22q11.2 deletion. Abnormal anatomic variations included coronary anomalies in 7 patients (LAD artery from RCA, crossing the infundibulum), and 5 without pulmonary valve. Twenty-six patients (18.8%) had previous systemic-to-pulmonary artery shunt (24 Blalock-Taussig, 1 Waterson, 1 Potts and 1 SANO). Pre-op peak gradient was 75.5±20.9mmHg (20-125mmHg). Ventricular infundibulectomy was carried out in all patients but seven who had abnormal coronary anatomy. Mean extracorporeal circulation (56.6±19.4min vs. 63.8±25.1min; p=0.092) and cross-clamp times (33.3±10.6min vs. 35.3±11.5min; p=0.311) were similar. During follow-up (mean 12.8±9.1years), a favourable evolution of the diameter of the annulus in the pulmonary valve-sparing patients was observed. Post-op pulmonary regurgitation was greater in Group 1 (2.8±1.0 vs. 1.9±1.1; p<0.001), as well the rate of reoperations with pulmonary homografts [18 (22.8%) vs. 3 (5.6%); p=0.04] and the rate of percutaneous pulmonary valve [5 (6.3%) vs. 0 (0%); p=0.4]. There was a decrease in RV-PA systolic gradients in both groups (to 24.6±10.5mmHg vs. 22.6±11.0mmHg; p=0.453). Almost all patients were in NYHA class I (1.0±0.2 vs. 1.0±0.1; p=0.723). There were no differences in late survival at 1, 10 and 25 years between the group 1 and 2 respectively (96.3±2.6% vs. 89.9±3.4%, 93.4±3.8% vs. 88.4±3.7%, and 85.1±6.6% vs. 88.4±3.7%; p<0.062).

Conclusions
Long-term outcomes after definitive repair of tetralogy of Fallot with preservation of the annulus were excellent with pulmonary artery growth, low incidence of postoperative complications, and low rate of reoperations.

CARDIAC SURGERY - SELECTED ORAL COMMUNICATIONS

MULTIPLE VS SINGLE ARTERIAL GRAFTING IN CORONARY SURGERY AMONG DIABETIC PATIENTS: A META-ANALYSIS

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Introduction
The use of more than one arterial conduit in coronary surgery has been widely associated with better long-term results.

Objectives
We sought to investigate the benefits of Multiple Arterial Grafts (MAG) over Single Arterial Grafts (SAG), among diabetic patients, in short and long-term results throughout a meta-analysis of propensity score matching (PSM) studies.

Materials and Methods
MEDLINE and ISI Web of Science were used to find relevant literature (1960-2018). We included cohort studies with at least 200 patients and that reported one of these outcomes: long-term survival, early mortality or sternal wound infection (SWI). Survival was collected through hazard ratio (HR) along with their variance and the other endpoints using frequencies or odds ratio (OR) from the matched sample. Fixed effect models were used to compute statistical combined measures and 95% confidence intervals (CI).

Results
Eleven studies were included performing a total of 9670 diabetic patients: 4833 MAG and 4837 SAG (1:1 PSM in all studies). MAG group consisted in bilateral internal mammary artery (BIMA) in 8 studies; single IMA (SIMA)+radial artery (RA) in 5 studies; and one study reported several MAG approaches: BIMA+RA+Gastroepiploic artery (GEA), SIMA+RA+GEA, SIMA+GEA or BIMA+GEA. SAG group consisted in SIMA with or without saphenous vein graft in all studies, except for one that included also patients with GEA instead of SIMA. Ten studies reported long-term survival and mean follow-up time ranged from 5 to 12 years (max. follow-up 30y). Overall, MAG had significantly improved long-term survival compared with SAG (pooled HR=0.79, CI95%: 0.74-0.85,p<0.01). In-hospital mortality was reported by 6 studies (4202 patients: 2099 MAG and 2103 SAG) and occurred in 3.0% vs. 3.3% in MAG vs. SAG patients, respectively (pooled OR: 0.91, CI95%: 0.65-1.29,p=0.60). SWI was reported by 6 studies (4432 patients: 2216 MAG and 2216 SAG) and occurred in 2.8% vs. 2.2% in MAG vs. SAG patients, respectively (pooled OR: 1.31, CI95%: 0.90-1.92,p=0.15). Excluding one article in which MAG group consisted in IMA+RA, the remaining 5 BIMA vs. SIMA studies reported an higher risk of SWI in MAG group (pooled OR: 1.63, CI95%: 1.07-2.49,p=0.02)

Conclusions
Considering PSM studies, MAG provides superior long-term survival compared to SAG in diabetic patients. This surgical technique does not implement additional risk regarding in-hospital mortality, but MAG with BIMA was associated with a higher risk of SWI in this specific subgroup of patients.

CARDIAC SURGERY - SELECTED ORAL COMMUNICATIONS

VENOARTERIAL EXTRACORPOREAL MEMBRANE OXYGENATION - THE EXPERIENCE OF A LOW-VOLUME CENTER

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Introduction
Venoarterial extracorporeal membrane oxygenation (VA--ECMO) is defined as the use of a modified cardiopulmonary bypass circuit for temporary mechanical circulatory support, with multiple applications.

Objectives
We aim to report our experience as a low-volume ECMO center.

Materials and Methods
Single center, retrospective study of all patients on VA-ECMO between November 2006 and July 2019. The primary endpoints were survival to discharge and one-year survival.

Results
Venoarterial ECMO was performed in 97 patients (74 adults, 23 children), 60% were male, mean adult age of 49,1±14,9 years old and mean paediatric age of 3,6±5,5 years old. Fifty-six patients were on cardiogenic shock (58%) and ECMO indications were postcardiotomy shock (n=29), acute decompensated chronic heart failure (n=8), acute myocardial infarction/ complicated percutaneous intervention (n=7), acute myocarditis (n= 4), acute pulmonary thromboembolism (n=4), arrhythmic storm (n=1), complicated vascular surgery (n=1), tracheoesophageal fistula repair (n=1) and massive hemoptysis (n=1). The remaining 41 patients (42%) were on venoarterial ECMO intraoperatively during lung transplantation due to haemodynamic instability. Eleven cardiogenic patients who did not recover, fulfilled heart transplantation criteria, with 2 patients being directly bridged-to-transplant and 9 were bridged to a VAD (one was successfully weaned and two bridged to heart transplantation). Overall weaning rate was 64%. Mean ECMO support time was 3,3±3,8 days, mean ICU stay was 27,2±46 days and mean hospital length of stay was 47,3±64,6 days. Survival at discharge was 51% and survival at one-year was 47%.

Conclusions
Low-volume institutions can perform ECMO with good results in a diversity of pathologies. Decision-making algorithms tailored to the center's characteristics are essential for the outcomes.

SHORT ORAL COMMUNICATIONS

CARDIAC SURGERY - SHORT ORAL COMMUNICATIONS

ATRIAL MATRIX REMODELING IN ATRIAL FIBRILLATION PATIENTS WITH AORTIC STENOSIS

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Introduction
Atrial fibrillation (AF) is the most common cardiac arrhythmia with adverse clinical outcomes and diverse pathophysiological background. Aortic stenosis is the most prevalent valvular disease, with Aortic Valve Replacement (AVR) surgery remaining the gold standard treatment for severe symptomatic aortic stenosis, improving both quality of life and overall survival. However, the pathophysiology of AF in aortic stenosis is poorly understood. Evidence suggests atrial remodeling is associated with disease occurrence and progression, which involves specific molecular markers of fibrosis.

Objectives
This study aimed to evaluate atrium extracellular matrix remodeling in Atrial fibrillation (AF) patients with severe aortic stenosis, through histological fibrosis quantification and extracellular matrix gene expression analysis, as well as serum quantification of selected protein targets.

Materials and Methods
A posthoc analysis of a prospective study was performed in a cohort of aortic stenosis patients. Between 2014 and 2019, 56 patients with severe aortic stenosis submitted to Aortic valve replacement (AVR) surgery in a tertiary hospital were selected.

Results
Fibrosis was significantly increased in the AF group when compared to Sinus Rhythm (SR) patients ($p=0.024$). Moreover, cardiomyocyte area was significantly higher in AF patients vs SR patients ($p=0.008$). Conversely, collagen III gene expression was increased in AF patients ($p=0.038$). TIMP1 was less expressed in the atria of AF patients. MMP16/TIMP4 ratio was significantly decreased in AF patients ($p=0.006$). TIMP1 ($p=0.004$) and TIMP2 ($p=0.012$) were significantly increased in the serum of AF patients. Aortic valve maximum ($p=0.0159$) and mean ($p=0.031$) gradients demonstrated a negative association with serum TIMP1.

Conclusions
Atrial fibrillation patients with severe aortic stenosis present increased atrial fibrosis and collagen type III synthesis, with extracellular matrix remodelling demonstrated by a decrease in the MMP16/TIMP4 ratio, along with an increased serum TIMP1 and TIMP2 proteins.

CARDIAC SURGERY - SHORT ORAL COMMUNICATIONS

TO REPAIR OR REPLACE THE MITRAL VALVE IN TRIPLE VALVE SURGERY

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Introduction
Triple valve surgery (TVS) is a complex and difficult surgery because of prolonged ischaemic times and technical issues. Furthermore, multiple valve replacement exposes the patients to a higher susceptibility to long-term major adverse valve-related events (MAVE) and cardiovascular and cerebrovascular events (MACCE).

Objectives
This study aimed to compare the surgical results of mitral valve replacement to mitral valve repair in TVS patients.

Materials and Methods
From January of 2000 to December of 2018, 113 TVS patients were treated in a single Centre. After exclusion of patients with other associated procedure and/or triple valve repair, 107 patients constituted the study population (aortic valve replacement plus mitral valve repair/replacement and tricuspid repair). Two groups were compared for short and long-term results: Group A - mitral valve repair (68 patients) and Group B – mitral valve replacement (45 patients). Cox proportional hazards models were used to analyse risk factors for late mortality and MACCE incidence. Kaplan-Meier methods were used to plot survival curves. The study population was compared to the general population (age and gender-matched, 1-sample log-rank test).

Results
Groups A and B was similar regarding age (66.0±10.7 vs. 63.4±8.6; p=0.164) and NYHA III/IV (73.5 % vs 84.4%; p=0.173), but rheumatic etiology was prevalent in group B (60.3% vs. 80.0%; p=0.028). Both cardiopulmonary bypass (93.6±15.1 vs.103.19±17.0 min; p=0.002) and cross-clamp times (62.9±12 vs. 71.2±13.2 min; p=0.001) were significantly higher in group B. No differences were found concerning major postoperative events (cardiogenic shock, acute myocardial infarction and stroke). Thirty-day mortality was similar in both groups (2.9% vs. 2.2%; p=0.817). No significant differences were found concerning 10-year survival (68.6±7.0% vs. 58.9±10.2%; p=0.302) as well as in MACCE incidence at 10 years (68.8±7.1% vs. 64.7±7.9%; p=0.151). Freedom from reoperation at 10 years was similar between two groups (93.1±3.9% vs. 92.3±4.4%; p=0.569). When compared to sex and age-matched general population patients of both groups had a lower long-term survival.

Conclusions
Triple valve surgery appears to confer satisfactory short and long-term results despite the surgical complexity. The choice of the mitral procedure did not affect survival and major adverse events at 10 years.

CARDIAC SURGERY - SHORT ORAL COMMUNICATIONS

QUALITY OF LIFE AMONG ADULTS WITH REPAIRED TETRALOGY OF FALLOT: A LITERATURE REVIEW

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Introduction
Tetralogy of Fallot (TOF) is the most common cyanotic congenital heart defect. Survival into adulthood is currently expected following surgical repair, leading to a growing population of adults with repaired TOF.

Objectives
In this literature review, we aim to summarize the current state of knowledge on the quality of life of adults with repaired TOF.

Materials and Methods
A search was conducted on PubMed and results were reviewed for articles published between January of 2010 and June of 2020. Search terms included "Tetralogy of Fallot", "repaired", "adults" and "quality of life".

Results
For the subjective health status evaluation, most published studies used Short-Form-36. Most studies agree that physical complex status is poorer for adult patients with repaired TOF than for controls. Mental complex status was also lower. Patients reported similar satisfaction with their lives and levels of social participation. Most patients had a college or university degree. Higher education, male gender and having a partner were positively associated with being employed. Studies found no difference in the proportion of patients that are married or living with a partner, compared to control groups. Patients operated for TOF have a lower reproduction rate compared with the background population.
A consistent finding of these studies is abnormal physical parameters compared to psychosocial issues. The diverse needs of adults with repaired TOF require a multidisciplinary care, that takes into consideration all aspects that affect their quality of life.

Conclusions
Despite abnormal physical functional status, it is reassuring that most adult patients with TOF lead independent and productive lives.

CARDIAC SURGERY - SHORT ORAL COMMUNICATIONS

SURGICAL ABLATION OF ATRIAL FIBRILLATION AND LEFT ATRIAL APPENDAGE OCCLUSION BY A TOTALLY VIDEOTHORACOSCOPIC APPROACH- NEW PARADIGM?

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Introduction
Atrial fibrillation (AF) contributes to increase morbidity and mortality. Pharmacological and percutaneous catheter therapies are unsatisfactory, with potential serious adverse effects. Cox-Maze III/IV surgery, with higher rates of success, has not been widely adopted because of the associated complexity of the procedure.

Objectives
We describe the surgical technique of AF ablation and concomitant occlusion of the left atrial appendage, with a totally videothoracoscopic and our results, including duration of surgery, number of days of hospital stay, complications and maintenance of sinus rhythm after surgery, at 6, 12 and 18 months of follow-up.

Materials and Methods
We performed a retrospective analysis of the first patients submitted to surgical ablation of AF and concomitant occlusion of the left atrial appendage, with a totally videothoracoscopic approach in our institution.

Results
We studied 15 patients (ages ranging from 39 to 75 years old; 54,5% female gender). Mean time since the diagnosis of AF was 5,75 years. All had been submitted to prior catheter ablation (mean of 2 attempts). Mean diameter and volume of the left atrium was 42 mm (M-mode) and 70 ml (43 ml/m^2), respectively. Mean duration of surgery was 2 hours and 22 minutes. In one patient we had to convert the surgery to median sternotomy. Mean hospital stay was 4,8 days. Mean time of follow-up was 12 months. During follow-up, 91%, 90% and 80% of the patients were in sinus rhythm, 6, 12 and 18 months, respectively.

Conclusions
This surgical approach represents a real benefit for those patients with multiple attempts of catheter ablation without success. However, a larger sample of patients with a longer period of follow-up is necessary for further conclusions.

CARDIAC SURGERY - SHORT ORAL COMMUNICATIONS

AORTIC DISSECTION WITH DIFFERENT HISTOPATHOLOGY FINDINGS

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Introduction
Aortic dissection keeps being a life-threatening condition presenting with a 1-2% of mortality rate per hour after onset. Risk factors and some associations (e.g.: Marfan syndrome) for aortic dissection correlates with men and older patients more likely to develop the disease.
It can be classified according with the Stanford System as type A when the dissection involves the ascending aorta and type B when only the descending aorta is involved. The DeBakey System classifies the aortic dissection as type I (starting in ascending aorta and affecting all aortic segments), type II (ascending aorta is dissected) and type III (involving the descending aorta).
The histopathologic findings of an acute aortic dissection depend on how far from the first episode the clinical evolution determines the surgical correlation. Usually, in acute immediate status, fibrin and platelets forming thrombi occupying the tunica media dissection within the first 12 hours, with neutrophils in the following days.

Objectives
A case of aortic dissection with time of evolution required to form a mesenchymal matrix lining the neo-lumen is described.

Materials and Methods
A 42 years-old male presented at the Emergency Department with cough, chills, and fever. During clinical evaluation, angio-CT was performed revealing an acute aortic dissection, classified type A (Stanford System).

Results
On gross examination, segments of aortic wall with dimensions varying from 2 cm to 4 cm in greatest dimension and embedded in clots, were sectioned for histopathological examination. Dissection of medial layer with false lumen was clearly observed along with endothelial cells expressing CD34/CD31, ending in a cul-de-sac with fibrin deposition.

Conclusions
Dating the aortic dissection is a pathological challenge in cases happening in patients presenting with an abrupt clinical onset.
In this case, an aortic dissection that had time to form a mesenchymal matrix lined by endothelial cells in the false lumen wall inform about dissection still ongoing due to the presence of fibrin in the ending of the false lumen have to another rupture.

CARDIAC SURGERY - SHORT ORAL COMMUNICATIONS

LONG TERM OUTCOMES OF TRICUSPID VALVE REPLACEMENT

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Introduction
The tricuspid valve has historically received less attention than any other cardiac valve. However, tricuspid disease is not a benign entity. Current practice is largely based on tricuspid valve repair since tricuspid valve replacement has been associated with high mortality and poor long-term outcomes.

Objectives
We aimed at evaluating the short and long-term outcomes of patients who underwent isolated tricuspid valve replacement at our institution.

Materials and Methods
We included in this retrospective study 12 consecutive patients who underwent to tricuspid valve replacement between October 2000 and October 2018. Clinical, surgical, pre and post-op echocardiographic findings were analyzed. In all cases bioprostheses were used.

Results
The mean age was 65±16.3years and 66.7% were female. The etiology of tricuspid valve disease was failure of previous tricuspid repair in rheumatic fever cases (5 patients), infective endocarditis (3 patients), leads in the right ventricle (2 patients), primary tricuspid regurgitation due chordal rupture (1 patient), and congenital disease due to Ebstein´s anomaly (1 patient). Three-quarters of the patients were in NYHA class III/IV, 58.3% had atrial fibrillation and 33.3% were diabetic. The mean tricuspid annulus diameter was 49±3.3 and 33.3% of patients had moderate to severe right ventricular dysfunction. The mean extracorporeal circulation time was 82±29.2min, the mean aortic cross-clamp time was 41±29.6min Cardioplegic arrest was used in all but 3 patients in whom ventricular fibrillation was used. Half of the population (6 patients) needed inotropic support in the first 24 hours and 3 patients needed permanent pacemaker due third-degree atrioventricular block. There was no operative mortality and after a follow-up of 5.2±5.5 years, 30-day and late mortalities were 16.7% (2 patients) and 25% (3 patients), respectively. NYHA class and right heart failure symptoms significantly improved during follow-up of the survivors. No patient required reoperation. Late survival was 75±12.5%.

Conclusions
Survivors had significant improvement in the NYHA class and freedom from right heart failure symptoms. Bioprostheses for tricuspid valve replacement have a very good long-term durability. Third degree of atrioventricular block, mostly appearing in early postoperative period, was the most common and severe complication of tricuspid valve replacement.

CARDIAC SURGERY - SHORT ORAL COMMUNICATIONS

TRICUSPID CHORDAL RUPTURE FOLLOWING STAB INJURY: A CASE REPORT

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Introduction

Traumatic tricuspid regurgitation is a rare clinical scenario occurring, in most cases, in the setting of blunt chest trauma. Tricuspid insufficiency following penetrating chest trauma remains even more unusual, with only a handful of cases reported.

We report a case of a 32-year-old male patient who sustained an isolated stab injury to the left chest wall. He was initially treated with emergency surgery for rupture of the right ventricular free wall. Intraoperative transesophageal echocardiography following correction showed no remaining mechanical complications. The patient had an uneventful postoperative course and was asymptomatic when he was discharged home at the 5th postoperative day. However, in follow-up appointments, the patient complained of exercise intolerance and dyspnea on effort. Transthoracic echocardiography was performed, demonstrating severe tricuspid regurgitation due to flail of the anterior leaflet, as well as dilation of the right heart chambers. The patient was submitted to cardiac reintervention and tricuspid chordal rupture was confirmed.

To our knowledge, this is the first reported case of tricuspid chordal rupture following stab injury with successful surgical repair. The case highlights the potential valvular complications of penetrating injuries to the heart and the possibility of late complications following chest trauma.

CARDIAC SURGERY - SHORT ORAL COMMUNICATIONS

LONG-TERM FOLLOW-UP OF ISOLATED TRICUSPID VALVE SURGERY

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Introduction
Most patients with significant tricuspid valve disease (TVD) have concomitant left-sided heart disease and heart failure. However, a growing population of adult patients are developing isolated severe TVD. The role of surgery in these patients is unclear, with literature reporting high rates of early and late events.

Objectives
Analyze early and late outcomes of isolated tricuspid valve surgery (ITVS) and identify predictors of poor prognosis.

Materials and Methods
Single center retrospective study of all patients who underwent ITVS between 2007 and 2020. Exclusion criteria: congenital heart diseases and concomitant non-tricuspid valve surgery. Fifty-three patients were submitted to ITVS, with a mean age of 57 years old and 45.3% female gender. Clinical records and National Data Base were used for long term follow-up. The mean follow-up were 4.7 years (SD: 4,04) for 100% of the patients.
Primary end-points: early - MACCE defined as a composite endpoint including at least one of the following in-hospital variables: in-hospital mortality, cardiac arrest, stroke, acute renal lesion, acute hepatic lesion, bleeding requiring surgery; late -all cause mortality.
Logistic regression and Cox proportional analysis were used with all clinical relevant variables selected *a priori* (not a stepwise method). Long-term survival was estimated using the Kaplan-Meier method.

Results
Thirty patients (56.6%) were diagnosed with functional disease, 28.3% with infective endocarditis, 7.5% rheumatic disease and 7.5% with prosthesis/repair dysfunction. The Majority of patients (67.9%) presented with tricuspid regurgitation. Twenty-three (43%) patients had previous cardiac surgery. Twenty-nine patients (54.7%) underwent tricuspid repair and 45.3% valve replacement (87,5% bioprosthetic vs 12.5% mechanical). The median in hospital stay was 23 days.
MACCE occurred in 22.6% of the patients, with 11.3% of in-hospital mortality. Hypertension (OR 9.5; CI95%:1.03-87.44; p=0,047) and left ventricle ejection fraction <50% (OR 5.8; CI95%:1.12-29.59; p=0,036) were independent predictors of in-hospital MACCE.
Overall, the actuarial survival at 1, 5 and 10 years was 70%, 61% and 45%, respectively. Diabetes mellitus (HR 3.3; CI95%:1.31-8.52; p=0,012) was associated with increased all-cause long-term mortality.

Conclusions
As has been previously reported in literature, morbidity and mortality after isolated tricuspid surgery are high, with an increased rate of death at first year after surgery. Hypertension, cardiac dysfunction and diabetes mellitus are predictors of poor outcomes.

CARDIAC SURGERY - SHORT ORAL COMMUNICATIONS

MULTIPLE VERSUS SINGLE ARTERIAL GRAFTING IN THE ELDERLY: A META-ANALYSIS OF RANDOMIZED CONTROLLED TRIALS AND PROPENSITY SCORE STUDIES

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Introduction
The benefit of total arterial revascularization versus the use of venous grafts in addition to an arterial conduit is still an unsettled issue in coronary artery bypass grafting (CABG) surgery, especially in higher-risk subgroups due to lack of evidence, namely in the elderly.

Objectives
We conducted a meta-analysis of randomized controlled trials (RCTs), and propensity score (PS) studies comparing survival and early results of elderly patients who underwent coronary artery bypass grafting (CABG) with multiple (MAG) versus single arterial grafting (SAG).

Materials and Methods
MEDLINE, Web of Science, and Cochrane Library were used to find relevant literature (1960-April 2020). Survival at a follow-up ≥ 1 year and early outcomes were evaluated. Outcomes were collected through hazard ratio (HR) and their variance, frequencies from the matched sample, or adjusted odds ratios. Random effect models were used to compute combined statistical measures and 95% confidence intervals (CI) through generic inverse variance method (time-to-event) or Mantel-Haenszel method (binary events).

Results
Eleven PS cohorts and 2 RCTs comprising >20,000 patients (>6800MAG and >13,200 SAG) were included in this meta-analysis. MAG was associated with lower long-term mortality (pooled HR: 0.80, 95%CI: 0.72-0.88, $p<0.01$) at no expense of higher risk of early mortality (pooled OR: 0.81, 95%CI: 0.57-1.15, $p=0.24$), but a propensity for MAG being associated with increased risk of sternal wound complications (SWC) was found (OR MAG BIMA: 1.42, 95%CI: 0.98-2.06, $p=0.07$).

Conclusions
Advanced age should not limit MAG's use considering its long-term survival benefits, even within the elderly. However, the tendency for higher rates of SWC with MAG calls for a careful selection of patients to this challenging technique.

CARDIAC SURGERY - SHORT ORAL COMMUNICATIONS

EFFECT OF PRE-OPERATIVE β-BLOCKER THERAPY AFTER CABG SURGERY: LONG-TERM SURVIVAL AND POSTOPERATIVE COMPLICATIONS

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Introduction
Perioperative medication in cardiac surgery recommends β-blockers' use but it is not clear if its prescription should be started before or after cardiac surgery.

Objectives
To determine the effect of preoperative β-blocker therapy in long-term survival and postoperative complications after coronary artery bypass grafting surgery (CABG). Also, to study if recent acute myocardial infarction (AMI) changes this therapeutic effect.

Materials and Methods
Retrospective single-center study including consecutive patients submitted to first isolated CABG in 2006-2007. Data was collected through clinical files and informatic databases. Patients were grouped according to their preoperative Bblocker regimen: without (noBB) or with β-blockers (BB). Chi-square, independent t-tests, Kaplan-Meier curves, Log Rank test and multivariable Cox regression were used. The mean follow-up time was 10 years, maximum 13 years.

Results
We included 562 patients, 468 (83%) were on preoperative β-blocker therapy. BB patients were younger (63±10 vs. 66±11, p=0.01) and predominantly male (79% vs. 75%, p=0.30). Recent myocardial infarction occurred in 46% BB vs. 53% noBB, (p=0.23) and BB patients presented less frequently moderate to severe left ventricular dysfunction (19% vs. 32%, p<0.01), history of stroke or transient ischemic attack (5% vs. 11%, p=0.04) and were less often in preoperative critical state (3% vs. 9%, p=0.01). Kaplan-Meier analysis showed an improvement in cumulative survival in BB group (13-years survival: 66% vs. 57%, Log-rank, p=0.01). After stratification by preoperative recent AMI occurrence, patients in BB group had better cumulative survival within patients with recent AMI (63% vs. 48%, Log-rank test p<0.01, BB vs. noBB, respectively), while preoperative β-blocker therapy had no impact on 13 years' survival in patients without recent AMI (70% vs. 67%, Log-rank test p=0.73). After multivariable Cox regression, preoperative β-blocker therapy emerged as a protective agent (HR: 0.56, 95% CI: 0.39-0.81, p<0.01). This effect is maintained in patients with recent AMI (n=267, HR: 0.38, 95% CI: 0.22-0.65, p<0.01) but lost significance in patients without this event (n=295, HR: 0.99 95% CI: 0.55-1.80, p=0.98). There were no significant differences in postoperative complications.

Conclusions
In this study, β-blocker therapy showed a beneficial effect on long-term survival, particularly in patients with recent AMI. However, we consider that subsequent studies should be performed in order to elaborate more solid conclusions. As has been previously reported in literature, morbidity and mortality after isolated tricuspid surgery are high, with an increased rate of death at first year after surgery. Hypertension, cardiac dysfunction and diabetes mellitus are predictors of poor outcomes.

CARDIAC SURGERY - SHORT ORAL COMMUNICATIONS

MITRAL VALVE REPAIR VS REPLACEMENT IN ACTIVE INFECTIOUS ENDOCARDITIS

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Introduction
Mitral valve repair is the first choice of treatment for mitral valve infectious endocarditis (IE) whenever feasible and the results are expected to be durable. Nonetheless, repair can sometimes be challenging and some patients may require reoperation later due to recurrent mitral regurgitation.

Objectives
Our aim was to compare the results between mitral valve repair (MVRp) versus replacement (MVR) in this setting.

Materials and Methods
From Jan2000 to Dec2019, 82 consecutive patients with active mitral IE diagnosis made using the Duke or modified Duke criteria, were submitted to either MVRp(57.3%) or MVR(42.7%). Cox proportional hazards models were used to analyze the risk factors for late mortality and major adverse valve-related events (MAVEs) incidence. Kaplan-Meier methods were used to plot survival curves.

Results
Mean age was (MVRp vs MVR) 54.0%±14.8 vs 58.9±14.3 (p=0.136), 23.2% vs 18.3% (p=0.685) were female; mean Euroscore II was 8.9±10.6% vs 9.6±8.3% (p=0.716), mean LV ejection fraction was 59.7±5.5% vs 59.5±4.5% (p=0.864) respectively. Extra-corporal circulation time (72.3±27.5min vs. 77.2±28min, p=0.430) and aortic cross-clamping (43.9±21.3min vs. 50±23min, p=0.217), respectively. Thirty-day mortality was similar between both groups (1.2% vs. 1.2%, p=0.832). No significant differences were found concerning 10-year survival (70.5±8.7% vs. 68.2±10.3%, p=0.524, respectively) as well as of freedom from MAVEs at 10 years after surgery (86.9±4.5% vs. 87.4±6%, p=0.456, respectively). Freedom from recurrence of significant MR (MR≥3) and/or reoperation at 10 years was better in the replacement but not significant (68.7±6.3% vs. 86.1±7.9%, p=0.160).

Conclusions
Both MVRp and MVR appear to confer satisfactory short and long-term outcomes despite its surgical complexity and high risk. The choice of the mitral procedure did not significantly impact survival and major adverse events at 10 years after surgery in our population, however there was a slight tendency to recurrent mitral valve regurgitation and/or reoperation at 10 years.