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Perioperative myocardial injury in heart transplant: determinants and prognostic value
L.S. De Santo1, G.P. Romero2, C. Maselli3, M. Buonocore4, C. Barcone5, M. Torella6, K. Goldstein7, C. Amarilli8, University of Foggia, Foggia, Italy
1,2Dept. Cardiovascular Surgery and Transplant V Monaldi Hospital, Naples, Italy
2Second University of Naples, Naples, Italy
Purpose: Cardiac troponin (cTnI) measured after surgery has been associated with increased mortality and morbidity. Data regarding risks and consequences of cTnI release after cardiac transplantation are dismissively few. This study sought to determine risk factors and prognostic implication of cTnI early levels in a single centre cohort operated on between January 1999 and December 2010.
Methods: Data on 362 consecutive recipients (mean age: 47.8±13.7, 20.2% females) monitored. An independent Data Monitoring Board: operations, 27.6% hospitalized. 84.9±4.8/min preoperative gemirolmer filtration rate) was analyzed using multivariable logistic regression modeling. Target outcomes were: determinants of cTnI release, early graft failure (EGF), acute kidney injury (AKI) and operative death.
Results: Mean cTnI release measured 24 hours after transplant was 10.9±11.6 μg/L. Overall hospital mortality averaged 10.8%, EGF 10.5%, and AKI was 12.5%. Mean cTnI release 10–100 μg/L proved an independent predictor of EGF (OR 2.0; 95% CI, 1.06–4.6) and AKI (OR 1.03; 95% CI, 1.001–1.064). EFG, in turn, proved a determinant of hospital mortality. Risk factors for cTnI 10–100 μg/L were stress (OR 3.1; 95% CI, 1.39–6.9, protective), length of ischemic time (OR 1.006; 95% CI, 1.001–1.011), previous cardiac operation (OR 2.9; 95% CI, 1.67-5.0), and left ventricular hypertrophy (OR 3.3; 95% CI, 1.9–5.6).
Conclusion: Shown troponin measured 24 hours after heart transplantation is independently associated with AKI and cTnI. The search for optimal myocardial preservation is still an issue in contemporary heart transplant.

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Interventional closure of the left atrial appendage for stroke prevention - experience from a high volume center
Y. Matsuo1, S. Moebius-Winkel2, M. Sandri3, N. Mangner4, N. Majumder5, T. Daehnert6, G. Schuler7, M. Kurabayashi1, Gunma University Graduate School of Medicine, Maebashi, Japan
1University of Leipzig, Heart Center, Department of Internal Medicine and Cardiology, Leipzig, Germany
2University of Leipzig, Heart Center, Department of Pediatric Cardiology, Leipzig, Germany
Purpose: Since the PROTECT AF study was published, left atrial appendage (LAA) closure is an alternative therapy for stroke prevention in AF. However, real-world and long-term efficacy and safety have yet to be investigated. Therefore the aim of the present study was to evaluate procedure outcomes in clinical routine at a high volume center.
Method: This was an open-label non-randomized study. LAA closure was performed to 178 patients since 2009 to 2012. After implantation, patients remain on warfarin for 45-day. Patients seriously contraindicated to warfarin were under therapy with dabigatran or aspirin or clopidogrel or aspirin+clopidogrel. If LAA was sealed successfully at 45-day, oral anticoagulant (OAC) or dual antiplatelets was discontinued while aspirin was continued lifelong.
Results: 179 patients (72.7±9.0 y.o. female=74) were enrolled. The mean CHA2DS2-VASc score was 2.8±1.1 (CHA2DS2-VASc: 4.3±1.5). Successful implantation rate was 98.9%, whereas 2 were not implanted due to anatomical reason. There was no procedure related death, myocardial infarction and systemic thromboembolization. Two cardiac tamponade, two small pericardial effusions occurred. One new ischemic stroke occurred at 256 day after procedure. The rate of safety events compares favorably with other LAA closure devices. The ACP device is a good alternative for high risk patients based on perioperative myocardial injury in adult heart transplant: determinants and prognostic value.

B S.E. Sig. Lower 95% CI Upper 95% CI
PFT 0.039 0.027 0.002 1.082 1.404
LV length (cm) 0.603 0.266 0.003 1.085 3.305
LAA max. area 0.625 0.172 0.001 1.324 2.614
Conclusions: The high frequency of LAA thrombi detected in our patients with dilated cardiomyopathy demonstrates the necessity for more extensive use of TEE and potential broader use of anticoagulation therapy. We suggest that SR patients with dilated cardiomyopathy whose LV length in diastole measured by TTE is above 8.0 cm should be considered for TEE.

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Electrical remodeling of the right ventricle following hemodynamic improvement after percutaneous pulmonary valve implantation, one year follow up
A. Fronczak1, M. Magzal1, E. Piotrowicz2, E.K. Biernacka2, M. Demkowski2, W. Ruzyllo5, M. Kowalski5, M. Spiewak5, P. Hoffman5, R. Piotrowicz1,1. Medical University of Warsaw, Warsaw, Poland; 2Institute of Cardiology, Department of Cardiac Rehabilitation and Noninvasive Electrocardiology, Warsaw, Poland; 3Institute of Cardiology, Department of Congenital Cardiac Defects, Warsaw, Poland; 4Institute of Cardiology, Department of Coronary and Structural Heart Diseases, Warsaw, Poland; 5Institute of Cardiology, Department of Radiology, Warsaw, Poland
Purpose: The purpose of this study was to answer the question does the hemo-dynamic improvement influence electrical remodeling of the right ventricle (RV) in patients (pts) after percutaneous pulmonary valve implantation (PPVI)?
Methods: The study comprised of 30 pts (16 males, age 24±7 yrs, predominant stenosis (PS) 17pts, predominant regurgitation (PR) 13 pts, diagnosis: tetralogy of Fallot (n=14), pulmonary hypertension (n=8). The procedure (n=4), other (TGA, pul- monary stenosis, double outlet right ventricle, common arterial trunk type II, n=4) who underwent PPVI. Twelve-lead ECG was performed before and 1 year after PPVI, in the following variables were compared: right ventricular hypertrophy (RV) hy-pertrophy characteristics: R wave amplitude in V1 and aVR, Sokolow-Lyon index [mV] separately in (R V1 + S V6) and (R V1 + S V6) and duration [ms] of QRS in V1. Those were correlated with RV overload characteristics in cardiac magnetic resonance (CMR): RV end diastolic volume (RVEDV) [mL/m²], RV end systolic volume (RVESV) [mL/m²], RV ejection fraction (RVEF) [%], RV mass [g/kg], and in transthoracic echocardiography: pulmonary pressure [mmHg].
Results: Comparison of ECG data prior and after PPVI revealed statistically significant decrease in R V1 (1.35±1.25 to 1.11±1.13, p=0.004), RV (1.40±0.34 to 0.37±0.31, p=0.008), R V1+S V5 (1.98±1.40 to 1.44±1.19, p=0.002), R V1+S V5 (1.80±1.16 to 1.35±1.17, p=0.0003). None statistically significant differences were observed in duration of QRS in V1 (64±16 to 60±15, p=0.29). The follow-ing variables in the CMR and echocardiography decreased significantly: RVEDV (152±49 to 127±37, p=0.001), RVESV (84±41 to 67±34, p=0.0009), RVEF (61±12 to 52±10, p=0.006), pulmonary gradient (65±67 to 30±17, p=0.003). RVEF increased significantly (45±11 to 50±11, p=0.01). The greatest decrease in R wave amplitude in aVR was observed in pts with the greatest reduction in RVESV (R=0,41, p=0,03) and RV mass (R=0,51, p=0,08). There was also a signifi-cant correlation between the increase in RVEF and reduction in R wave amplitu-de in aVR (R=0,47, p=0,01) and Sokolow-Lyon index (R V1 + S V5) (R=0,43, p=0,03). The greatest decrease in pulmonary pressure was parallel to reduction in Sokolow-Lyon index (R V1 + S V5) (R=0,61, p=0,0008).
Conclusion: The improvement of haemodynamic parameters in CMR and echo-cardiography is parallel to decrease in electrocardiographic characteristics of the right ventricle hypertrophy and overload.

P2191 I BEDSIDE
In-hospital results of 47 percutaneous pulmonary valve implantations
E.K. Biernacka1, W. Ruzyllo2, M. Demkowski2, M. Kowalski5, M. Spiewak5, S. Banas3, H. Siudalska6, P. Hoffman5, R. Piotrowicz1. 1Institute of Cardiology, Department of Congenital Cardiac Defects, Warsaw, Poland; 2Institute of Cardiology, Warsaw, Poland; 3Institute of Cardiology, Department of Cardiosurgery and Transplantology, Warsaw, Poland; 4Institute of Cardiology, Department of Cardiac Intensive Care, Warsaw, Poland; 5Institute of Cardiology, Department of Cardiosurgery and Transplantology, Warsaw, Poland
Purpose: Percutaneous pulmonary valve implantation (PPVI) is a valid alternative to re-operation in patients with right ventricular outflow tract (RVOT) dysfunction after surgical correction of congenital heart disease. Safety and efficacy of this rela-tively new procedure need further studies. The aim of this report was to analyze in-hospital results of PPVI performed in our center.
Patients and methods: Between December 2008 and December 2012 PPVI was performed in 47 pts (age 25.5±8.3 y; 26 males with RVOT dysfunction 14,8±6.8 years after last surgical correction of tetralogy of Fallot (n=26), pulmonary atre-sia (n=9), aortic stenosis (Ross operation, n=5), other (TGA, DORV, pulmonary stenosis, total cavo pulmonary connection, n=7). RVOT was reconstructed with the full conduit in 27 pts (pulmonary homograft, n=24; aortic homograft, n=2; conterga, n=1) and with a patch in 20 pts. Indication for PPVI were: pulmonary stenosis (n=12), significant pulmonary regurgitation (n=18) and combined lesions (n=7). Valve implantation was preceded with bare metal stent insertion in all pts; in 8 pts with wide RVOT (24-25 mm) pre-stenting was performed 2 months earlier. Melody Medtronic® valve (MM) was used in 28 pts, Edwards SAPIEN™ (ES) in 16 cases (23mm - 3 pts, 26mm -13 pts); in 3 pts urgent operation was necessary due to severe valve failure in tricuspid valve in 2 pts and stent migration in 1 pt. Elective surgery was performed in 2 pts after MM implantation (calciﬁed aortic homograft rupture and early valve compression). None of surgical revision procedure led to mortality. In-hospital success rate was 89,4% (42pts). Pulmonary gradient (echo-doppler) decreased from 56,25±44,07 before to 29,74±14,34 one day after the procedure, p=0,0001 (and from 80,16±37,86 to 34,56±5,07, p=0,0001 for pts with pulmonary stenosis). Pulmonary incompetence was restored in 40 pts, in 6 pts pulmonary regurgitation was observed in 2 pts. The mean hospital stay after suc-cesful PPVI was 76±26 hours.
Methods: 1. PPVI is a safe and efﬁcient procedure both for pts with full con-duit and selected pts with patched RVOT dysfunction. 2. Pre-stenting should be obligatory. 3. In cases with borderline RVOT dimensions 2-step procedure with presenting at least two months before valve implantation is recommended.
Results: PPVI was attempted in 47 cases (46 patients; p), baseline char-acteristics in Table 1. Prosthesis were mechanical in 90%. In 73% cases there were 2 prosthesis. The majority of defects were perimital (74%). All p had heart failure. 17 (41%) in NYHA III functional class (FC) and 15 (36%) in NYHA II FC. Fifteen (38%) also had hemolysis. Successful closure was achieved in 71% pro-cedures with 0% procedural and 12% in-hospital mortality. Rate of vascular complica-tions was 27%, only 1 required surgical intervention. 3 p (7%) experienced transient renal failure and 11 p (26.8%) developed anemia requiring transfusion. Mean follow up was 22,3 months. Clinical improvement (≤ NYHA FC) was found in 68% in whom the procedure was successful. 58% of p who were previously in NYHA II FC died during the follow up vs 20% of p who presented in NYHA II FC (p<0,005). Ventricular right dysfunction was present in 70% who died during the follow up vs 31% who had a normal right ventricle at baseline (p<0,05).
Baseline characteristics
Age 63,4±11,8 Male 49 (50)
Systemic Hypertension 18 (50)
Chronic Renal Insuﬃciency 10 (27)
Left Ventricular function
I 13
II 12
III 2
IV 3
Right Ventricular failure 14 (39)
Pulmonary Hypertension 21 (56)
≤ 2 prior sternotomies 21 (56)
Values are n, n (%), mean ± SD.
Conclusion: PVVL closure can be performed with a reasonable rate of success and clinical improvement, and relatively low complication rates. P initially in worse FC or with previous right ventricular dysfunction showed worse prognosis even after a successful procedure.

P2193 I BENCH
Implantation of new cobalt-chromium stents in the treatment of aortic coarctation
J. Bielawska1, M. Sztukulka1, R. Fiszer2. 1Medical University of Silesia, Zabrze, Poland; 2Silesian Heart Hospital for Diseases, Zabrze, Poland
Purpose: Sterling in Coarctation of the Aorta (Coa) has been performed with different stents. Recently new bare metal stent made of a Cobalt-Chromium (Co-Cr) alloy was introduced to clinical practice. They have hybrid open/closed cell design and are laser cut. We evaluated immediate result and midterm follow-up of implantation of this stents in the management of Coa at a single tertiary care center.
Methods: Thirty five new type Co-Cr stents were implanted in 35 patients (pts): 30 with native Coa and 5 with recurrent after previous surgery (ReCoa). All had arterial hypertension in upper limbs, absent or weak femoral puls and continuous flow in abdominal aorta in Doppler examination. Mean age patient was age 28.3±15.6 years. Follow-up ranged from 9 to 60 years. The stents were manually mounted on high pressure balloons and delivered through 10 to 14 Fr Mullins sheaths using a conventional femoral approach. Andirstent XL have expansion range till 25 mm. Andirstent XXL till 32 mm and both are different available lengths (from 13 till 57 mm).

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