

BIFURCATION

CRT-133

Safety And Feasibility Of Everolimus-eluting Bioresorbable Vascular Scaffold In The Treatment Of Coronary Bifurcation Lesions

Ashish Shah, William Chan, Christopher Overgaard, Douglas Ing, Vladimir Dzavik
Toronto General hospital, Toronto, ON, Canada

BACKGROUND PCI treatment of coronary bifurcation lesions (CBL) is technically challenging. Bioresorbable vascular scaffold (BVS) provides temporary vessel scaffolding with drug-elution; restores normal vessel architecture and physiology upon resorption. There are limited data on the feasibility and safety of using ABSORB BVS (Abbott Vascular) for treatment of CBL.

METHODS A retrospective analysis of CBL treated with ABSORB-BVS at a tertiary PCI center from Sep-12 to May-14. All PCIs were performed under OCT guidance.

RESULTS A total 41 CBL were treated in 37 patients undergoing non-urgent PCIs. Mean age of the patients was 60 years. Radial access was used in treatment of 34 CBL. As per 'Medina' classification, 25 (61%) CBL were (1,1,1), 9 (22%) were (1,1,0), 4 (10%) were (0,1,1) and 1 (2.4%) each (1,0,1), (1,0,0) and (0,1,0). Side branch (SB) were wired in 30 (73%) CBL; treated with DES in 5 (12.2%) lesions (T-stent in 2, balloon-crush in 3) and balloon angioplasty only in 20 (48.8%) CBL. Main vessel stenting was performed with proximal optimization technique (POT) in 20 (48.8%) CBL. Final kissing balloon (FKB) inflation was performed in 10 (24.4%). BVS used per case were 2.0 ± 0.2 , and mean diameter and length were 2.9 ± 0.1 and 22.3 ± 0.9 mm respectively. Thirty-one lesions (76%) involved LAD/diagonal vessel.

BVS treatment of CBL was successful in 40 of 41 (98%) CBL with only 1 patient in whom delivering the BVS was difficult. Failure to wire SB occurred in 3 patients, of whom SB flow compromised in 2 patients. One patient had intra-procedural left main stem dissection treated with a drug-eluting stent. Three (7%) had biochemical but not clinical evidence of peri-procedural MI. Mean follow-up was of 110 ± 15 days. One patient died with suspected sub-acute BVS thrombosis and 1 underwent drug-eluting balloon treatment of in-scaffold restenosis.

CONCLUSIONS

1. A wide range of CBLs can be safely and effectively treated with ABSORB BVS.
2. Intravascular imaging is mandatory to guide BVS sizing and for assessment of strut apposition and integrity.
3. Wire crossing of BVS struts and dilating through them into the SB appears safe.
4. Sequential balloon post-dilatation and FKB inflation appear safe and feasible.

CABG

CRT-134

Screening Carotid Ultrasound in Patients Undergoing Cardiac Surgery: Does Severity of Carotid Stenosis Predict Post-Operative Cerebrovascular Accidents?

Lucas Christianson, Anhil Kumar Mehra, Khuyen Do, Blake Brown
USC, Los Angeles, CA

BACKGROUND Guidelines recommend that high-risk patients be screened for carotid artery disease prior to cardiac surgery. High-risk patients are defined as those with age >65 years, left main disease, peripheral arterial disease, history of cerebrovascular disease (TIA or stroke), hypertension, smoking or diabetes.

OBJECTIVES Identify the incidence of carotid artery disease and outcomes of cardiac surgery. Endpoints include mortality, cerebrovascular accident, and prevalence of significant carotid stenosis (80-99%) and prevalence of carotid endarterectomy.

METHODS A retrospective analysis of LAC+USC Medical Center and Keck Medical Center coronary artery bypass patients from January 2012 to December 2013 was performed.

RESULTS We identified 340 patients (78% female, 22% male); average age was 61 years. The majority of the patients underwent pre-operative carotid screening with ultrasound (93%). Significant carotid artery stenosis (80-99%) was found in 41 arteries, which accounted for 12% of patients. Of the patients with significant carotid artery stenosis 8 (2.35%) underwent carotid endarterectomy (two of the patients underwent endarterectomy post-bypass). There were 3 post-operative cerebrovascular events (0.88%). Overall mortality was 1.18%.

CONCLUSION The incidence of significant carotid stenosis is low and even lower for those requiring pre-operative intervention of the carotid stenosis. The overall mortality and incidence of cerebrovascular events are also low. Of the three patients with post-operative cerebrovascular events, none had significant carotid stenosis. Further research will investigate risk factors to identify a higher risk population that may derive benefit from pre-operative screening.

CRT-135

Off-pump Coronary Artery Bypass Grafting Is Associated With Higher Rate Of Percutaneous Coronary Intervention At 8-year Follow-up. Results From The Priority Study

Fulvia Seccareccia,¹ Paola D'Errigo,¹ Fabio Barili,² Stefano Rosato,¹ Lorenzo Menicanti³
¹National Health Institute, Rome, Italy; ²Department of Cardiac Surgery, S. Croce Hospital, Cuneo, Italy; ³IRCCS Policlinico San Donato, San Donato Milanese (Milan), Italy

BACKGROUND The debate on the advantages and limitations of off-pump (OP) vs on pump (ON) CABG has not still arrived to a conclusion and concerns still exist on graft patency. Aim of this study was to compare the impact of OPCABG and ONCABG on mortality and morbidity, with a specific focus on mid-term need for percutaneous cardiac intervention (PCI).

METHODS The PRIORITY study is designed to evaluate mid and long term outcomes in a cohort of patients undergoing a CABG intervention in 2004 and between 2007-2008 in some Italian Cardiac Surgery Centers. Data on isolated OP and ON CABG interventions were derived from the study clinical dataset while follow-up information were derived from the national registry of Hospital Discharge Records collected in Italy from 2004 to 2012, linked with the national Tax registry. The time-to-event distributions were compared separately according to primary event-type (death or hospitalization for PCI), using the Cox regression for the time-to-death analysis and the competing risk analysis for time-to-PCI, with death as competing risk.

RESULTS The PRIORITY population consisted of 11020 patients who underwent isolated CABG (27.2% performed OP). The follow-up time ranged from 4 to 10 years. Although unadjusted long-term survival was significantly worse for OP CABG, the adjustment did not confirm OP CABG as a risk factor for mortality (hazard ratio = 0.96, p-value = 0.407). The incidence of postoperative PCI was significantly higher in OP than in the ON CABG group (2.64% vs 0.98%; p-value <0.0001). The significantly better cumulative incidence function of hospitalization for PCI at follow-up in the ON CABG group was confirmed even by the adjustment for confounding factors (ON CABG adjusted hazard ratio = 0.70; 95% CI = 0.62-0.80). Hence, ON CABG represents an independent protective factor for recurrent PCI after CABG.

CONCLUSIONS This study demonstrated that the surgical technique used to perform a CABG intervention does not affect mid-long-term mortality. Nonetheless, ON CABG showed to be an independent risk factor for patients' later PCI.

CARDIOVASCULAR PHARMACOLOGY

CRT-136

Anti-coagulant Therapy During Percutaneous Coronary Intervention: A Network Meta-analysis Of Randomized Trials

Tilak Pasala,¹ Rama Dilip Gajulapalli,¹ Shari Bolen²

¹Case Western Reserve University/MetroHealth, Cleveland, OH; ²Center for Health Care Research and Policy, Case Western Reserve University School of Medicine, Cleveland, OH

BACKGROUND Choosing the right anti-coagulant (AC) during percutaneous coronary intervention (PCI) for the right patient that balances the bleeding risk with ischemic efficacy is an ongoing challenge. We did a network meta-analysis to compare the currently used ACs for PCI.

METHODS We searched PubMed, The Cochrane Library, and relevant meeting abstracts for randomized trials that compared unfractionated heparin (UFH), bivalirudin, and low molecular weight heparin (LMWH) with or without glycoprotein IIb/IIIa inhibitor (GPI) for PCI. Endpoints (up to 30-day) included were: major bleeding (MB), death, major adverse cardiac events (MACE), and stent thrombosis (ST).

RESULTS We analyzed 74 trials (n = 73,760) allocated to 6 AC combinations (Figure 1A). Compared to UFH, UFH+GPI, bivalirudin, LMWH, and LMWH+GPI were associated with lower MACE (Figure 1B). The hierarchy for MACE (highest to lowest) was LMWH+GPI, UFH+GPI, bivalirudin+GPI, LMWH, Bivalirudin and UFH. While there was no statistical difference between ACs for death, LMWH was ranked the highest and UFH the lowest (SUCRA values 72% and 28% respectively). Bivalirudin was the safest AC (Figure 1C and 1D), and was associated with lower MB compared to UFH+GPI (odds ratio (OR) 0.54, 95% confidence interval (CI) 0.42-0.68) and UFH (OR 0.68, CI 0.51-0.90). However, ST was higher with bivalirudin compared to UFH+GPI (OR 1.72, CI 1.10-2.67).

CONCLUSIONS LMWH+GPI and UFH+GPI are the most effective and bivalirudin the safest AC for PCI. AC selection maybe tailored to patient's risk profile.