a clinical trial under way (clinicaltrials.gov ID: NCT02176265), such surfaces may offer safe alternatives to DES, particularly in patients in whom rapid healing is crucial.

### CRT-705

## Comparison of Biolimus A9-eluting Stent and Zotarolimus-eluting Stent in Patients with De Novo Coronary Artery Lesion; A Propensity Score-Matched Analysis

Seung-Woon Rha,[1] Byoung Geol Choi,[1] Se Yeon Choi,[1] Ji Young Park,[2] Sang-Ho Park,[3] Woong Gil Choi,[4] Eun-Gyu Lee,[5] Soo Hyun Kim,[4] Jihun Ahn,[6] Sang Yeub Lee,[7] Sang Min Kim,[7] Min Woong Kim,[8] Seong Gyu Yoon,[9] Tae Hoon Ahn,[10] Dong Joo Oh[1]
[1]Cardiovascular Center, Korea University Guro Hospital, Seoul, Korea, Republic of; [2]Cardiology Department, Eulji General Hospital, Seoul, Korea, Republic of; [3]Cardiology Department, Soonchunhyang University Cheonan Hospital, Cheonan, Korea, Republic of; [4]Division of Cardiology, Konkuk University Chungju Hospital, chungju, Korea, Republic of; [5]Cardiovascular Cencer, Andong Sungso Hospital, Andong, Korea, Republic of; [6]Department of Internal Medicine, Soonchunhyang University Gumi Hospita, Gumi, Korea, Republic of; [7]Cardiovascular Center, Chungbuk National University Hospital, Cheongju, Korea, Republic of; [8]Department of Cardiology, Hanyang University Medical Center, Hanmaeum Hospital, Changwon, Korea, Republic of; [9]Department of Medicine, Korea University Graduate School, Seoul, Korea, Republic of; [10]Gachon University of Medicine and Science, Gil Hospital, Incheon, Korea, Republic of

**BACKGROUND** There have been limited data comparing efficacy and safety of Biolimus-eluting Stents (BES, Biomatrix™, Biosensors and Nobori™, Terumo) with Zotarolimus-eluting Stent (ZES, Resolute Integrity, Medtronic) in a series of Asian population in real world clinical practice.

**METHODS** A total of 626 patients (pts) receiving BES or ZES were pooled from our prospective percutaneous coronary intervention (PCI) registry from March 2008 to May 2013. To adjust potential confounders, a propensity score matched (PSM) analysis was performed using the logistic regression model, and clinical outcomes were compared between the two groups up to 12-month.

**RESULTS** After PSM analysis, 2 propensity-matched groups (135 pairs, n = 270 pts, C-statistic=0.809) were generated and the baseline characteristics of the two groups were balanced. At six to 9-month angiographic and Two-year clinical outcomes, there were similar incidence of binary in-stent restenosis and hard endpoints including mortality, myocardial infarction, target lesion revascularization (TLR), target vessel revascularization (TVR), non-target vessel revascularization (NTVR) and major adverse cardiac events (MACEs,Table).

**CONCLUSIONS** In our study, BES showed similar efficacy and safety compared with ZES up to 12-months in a series of Asian population in real world clinical practice.

**Table.** Mid-term angiographic and 12-month Clinical Outcomes after propensity score matched analysis

| Variables, N (%) | Total (n=139) | BES (n=69) | ZES (n=70) | p Value |
|---|---|---|---|---|
| **Six to 9 month angiographic outcomes** | | | | |
| Binary In-Stent restenosis (>50%) | 22 (15.8) | 13 (18.8) | 9 (12.8) | 0.334 |
| **Variables, N (%)** | **Total (n=270)** | **BES (n=135)** | **ZES (n=135)** | **p Value** |
| **One-year clinical outcomes** | | | | |
| Total death | 8 (2.9) | 4 (2.9) | 4 (2.9) | ns |
| Cardiac death | 5 (1.8) | 1 (0.7) | 4 (2.9) | 0.370 |
| Myocardial infarction: MI | 6 (2.2) | 3 (2.2) | 3 (2.2) | ns |
| ST segment elevation MI | 2 (0.7) | 0 (0.0) | 2 (1.4) | 0.498 |
| Revascularizations | 24 (8.8) | 13 (9.6) | 11 (8.1) | 0.669 |
| Target lesion: TLR | 14 (5.1) | 9 (6.6) | 5 (3.7) | 0.272 |
| Target vessel: TVR | 18 (6.6) | 10 (7.4) | 8 (5.9) | 0.626 |
| Non-Target vessel: NTVR | 6 (2.2) | 3 (2.2) | 3 (2.2) | ns |
| Stent thrombosis | 2 (0.7) | 1 (0.7) | 1 (0.7) | ns |
| Acute | - | - | - | |
| Subacute | 1 (0.3) | 0 (0.0) | 1 (0.7) | |
| Late | 1 (0.3) | 1 (0.7) | 0 (0.0) | |
| Total MACE | 32 (11.8) | 18 (13.3) | 14 (10.3) | 0.451 |
| TLR MACE | 18 (6.6) | 10 (7.4) | 8 (5.9) | 0.626 |
| TVR MACE | 26 (9.6) | 15 (11.1) | 11 (8.1) | 0.409 |

## IMAGING MODALITIES

### CRT-706

## Development Of Non-invasive Coronary Wave Intensity Analysis

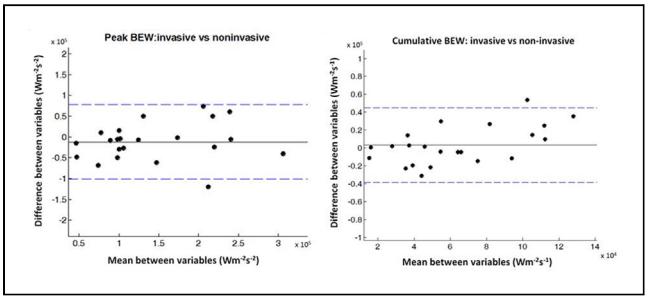
Christopher Broyd,[1] Sukhjinder Nijjer,[1] Sayan Sen,[1] Ricardo Petraco,[1] Rasha Al-Lamee,[1] Nicolas Foin,[1] Mahmood Al-Bastami,[2] Amarjit Sethi,[2] Raffi Kaprielian,[2] Iqbal Malik,[2] Darrel Francis,[1] Kim Parker,[1] Alun Hughes,[3] Ghada W. Mikhail,[2] Jamil Mayet,[2] Justin Davies[1]
[1]Imperial College London, London, United Kingdom; [2]Imperial College London NHS Trust, London, United Kingdom; [3]University College London, London, United Kingdom

**BACKGROUND** Wave Intensity Analysis (WIA) has found particular applicability in the coronary circulation where it is able to quantify and qualify the energy affecting blood flow. The most important wave for the regulation of coronary blood flow is the backward-travelling decompression wave (BDW). Until now, coronary WIA has always been calculated from invasive measures of pressure and flow. However, recently it has become feasible to obtain coronary pressure and flow waveforms non-invasively. In this study we set out to validate non-invasive coronary wave intensity at rest and under exercise conditions.

**METHOD AND RESULTS** 22 patients (mean age 60±12, 14 male) with unobstructed coronary arteries, underwent invasive WIA in the left anterior descending artery. Immediately afterwards, non-invasive coronary flow and pressure were recorded and WIA calculated from pulsed-wave Doppler echocardiography and brachial suprasystolic blood pressure. 9 of these patients also underwent non-invasive WIA assessment during a standardized exercise regimen.

A consistent pattern of 6 predominating waves were observed both invasively and non-invasively with a very similar BDW (peak: -13.8±7.9 vs -14.9±7.2 x $10^4$ $Wm^{-2}s^{-2}$, cumulative -6.5±4.0 vs -6.2±2.9 x $10^3$ $Wm^{-2}s^{-1}$). As has been previously seen invasively, left ventricular hypertrophy was correlated with a decreasing percentage BDW (r=-0.52, p=0.01) and exercise produced a rise in the BDW: at maximum exercise the peak BDW increased from 10.0±6.5 to 30.2±20.4x $10^4$ $Wm^{-2}s^{-2}$ (p=0.02) and cumulative from 5.4±3.8x$10^3$ to 14.5±8.9x$10^3$ $Wm^{-2}s^{-1}$ (p=0.03).

**CONCLUSION** Coronary wave intensity analysis can be reliably measured non-invasively and responds appropriately in physiological and pathological settings. This has potential to simplify WIA assessments and increase its applicability.




### CRT-707

## Value of Tissue Doppler Derived Velocity During Isovolumic Contraction in Assessment of Left Ventricular Viability After Low Dose Dobutamine Stress Echocardiography

Alaa Mabrouk Salem Omar,[1] Mohamed Ahmed Abdel-Rahman,[2] Hazem Khorshid[2]
[1]National Research Centre, Medical Division, Department of Internal Medicine, Cairo, Egypt; [2]Ain Shams University Hospital, Department of Cardiology, Cairo, Egypt

**BACKGROUND** Differentiation of dysfunctional but viable myocardium from irreversibly damaged scar tissue has important clinical implications for patients' ischemic heart disease and impaired left ventricular function.

**METHODS** We studied 27 male patients with ischemic cardiomyopathy (Age: 60±7 years) before and after low dose dobutamine echocardiography (LDDE). Mitral annular isovolumic contraction velocity (IVV) was obtained from septal, lateral, anterior and inferior mitral annuli. Wall motion score index (WMSI) was averaged from 18 segments in apical views. Global viability was considered if enhanced motion occurred in ≥2 segments. Difference between post and pre-LDDE IVV and WMSI were calculated as d-IVV and d-WMSI.

**RESULTS** 486 segments were assessed. 14 segments were normal, and 472 were abnormal, of which 67 (14%, 33 basal, 22 mid, and 12 apical) had enhanced motion post-LDDE. Global WMSI decreased post compared to pre-LDDE (2.33±0.36 vs. 2.46±0.21, p=0.07). IVV increased post-LDDE (6.1±4.7 vs. 3.7±1.6 cm/s, p=0.01). IVV of different annular positions increased similarly. IVV correlated after LDDE with global WMSI (r= -0.43, p=0.028), and d-SWMI correlated with d-IVV (-0.43, p=0.02). 12 patients (44%) showed global viability, for whom d-IVV was higher than patients without viability (4.1±SE 1.17 vs. 1.16±SE 0.59 cm/s, p=0.02). Walls with enhanced motion had higher d-IVV from the corresponding mitral annular position (4.7±SE0.84 vs. 1.9±SE0.33 cm/s, p=0.002) and wall specific d-WMSI correlated with the d-IVV of the corresponding mitral annular position (r=0.43, p<0.001). Post LDDE IVV showed no significant difference when only basal segments showed enhanced motion post LDDE compared to those who did not (p=0.134). While, post LDDE IVV was higher