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INSIDE THIS ISSUE

STATE-OF-THE-ART PAPER

Futility, Benefit, and Transcatheter Aortic Valve Replacement CME 707
Brian R. Lindman, Karen P. Alexander, Patrick T. O'Gara, Jonathan Afilalo

Transcatheter aortic valve replacement (TAVR) is a transformative innovation that benefits many patients with aortic stenosis who were previously untreated. However, many patients die soon after the procedure or lack improvement in quality of life. This emphasizes the need to identify and acknowledge the possibility of futility in some patients considered for TAVR. The multidisciplinary heart valve team needs to weigh a number of factors such as multimorbidity, frailty, and disability in addition to traditional risk factors in order to assess the anticipated benefit of TAVR. The authors review issues to be considered when making and communicating these difficult decisions.

CLINICAL RESEARCH

CORONARY

Comparative Outcomes After Unprotected Left Main Stem Percutaneous Coronary Intervention: A National Linked Cohort Study of 5,065 Acute and Elective Cases From the BCIS Registry (British Cardiovascular Intervention Society) 717
Sami S. Almudarra, Chris P. Gale, Paul D. Baxter, Sarah J. Fleming, Richard A. Brogan, Peter F. Ludman, Mark A. de Belder, Nick P. Curzen, on behalf of the National Institute for Cardiovascular Outcomes Research (NICOR)

National data from the British Cardiovascular Intervention Society (BCIS) suggest that more than one-half of the cases of percutaneous coronary intervention to an unprotected left main stem (UPLMS) stenosis occurred in the acute setting. For these cases, risk of 30-day mortality was 29-fold and 6-fold higher for ST-segment elevation myocardial infarction (STEMI) and non–ST-segment elevation acute coronary syndrome (NSTEACS) patients, respectively, compared with elective cases, which had 1-year mortality rates approaching 7%. More than 40% of STEMI patients had shock, in whom mortality rates were 52.0% at 30 days and 61.1% at 1 year. For STEMI and NSTEACS cases, but not elective cases, the radial, compared with the femoral approach, was associated with a lower risk of early mortality.

■ EDITORIAL COMMENT

How to Optimize Left Main Percutaneous Coronary Intervention 731
Seung-Jung Park, Jung-Min Ahn, Young-Hak Kim

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Impact of Delay to Reperfusion on Reperfusion Success, Infarct Size, and Clinical Outcomes in Patients With ST-Segment Elevation Myocardial Infarction: The INFUSE-AMI Trial (INFUSE-Anterior Myocardial Infarction) 733

Alejandra Guerchicoff, Sorin J. Brener, Akiko Maehara, Bernhard Witzenbichler, Martin Fahy, Ke Xu, Bernard J. Gersh, Roxana Mehran, C. Michael Gibson, Gregg W. Stone

Longer delay from symptom onset to reperfusion is associated with worse outcome in ST-segment elevation myocardial infarction. We studied the relationship between reperfusion delay (<3 vs. ≥3 h) and infarct size (IS) and clinical outcomes in The INFUSE-AMI (INFUSE–Anterior Myocardial Infarction) Study. There were 280 patients (62%) with <3-h delay and 170 patients (38%) with ≥3-h delay. Earlier reperfusion was not associated with higher rates of final Thrombolysis In Myocardial Infarction flow grade 3 or myocardial blush grade 2/3, but was an independent predictor of smaller IS ($p = 0.02$). Mortality at 1 year was reduced in patients with a shorter delay (4.0% vs. 9.2%, $p = 0.02$). Thus, in patients undergoing relatively early reperfusion, longer delays were associated with larger IS and 1-year mortality, but not with reduced reperfusion success.

ABSORB Biodegradable Stents Versus Second-Generation Metal Stents: A Comparison Study of 100 Complex Lesions Treated Under OCT Guidance 741

Alessio Mattesini, Gioel G. Secco, Gianni Dall'Ara, Matteo Ghione, Juan C. Rama-Merchan, Alessandro Lupi, Nicola Viceconte, Alistair C. Lindsay, Ranil De Silva, Nicolas Foin, Toru Naganuma, Serafina Valente, Antonio Colombo, Carlo Di Mario

Fifty complex coronary lesions treated with a bioresorbable vascular scaffold (BVS) undergoing a final optical coherence tomography (OCT) examination were compared with an equal number of matched lesions treated with drug-eluting stents (DESs). A higher balloon diameter/reference vessel diameter ratio was used for pre-dilation in the BVS group ($p < 0.01$). In the BVS group, OCT showed greater tissue prolapse area ($p = 0.08$) and incidence of proximal edge incomplete strut apposition (ISA) ($p = 0.04$) with no difference in the overall ISA. The RAS was 20.2% in the BVS group and 21.7% in the DES group ($p = 0.32$). Acute strut fracture was only observed in the BVS group (2 cases). Based on OCT assessment, the BVS showed an acute performance similar to that of second-generation DESs. A different approach to lesion preparation and universal OCT guidance may have helped to achieve this result.

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