

MULTI-VESSEL DISEASE IN STEMI

Asian Interventional Cardiovascular Therapeutics
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Reversal of Position

- STEMI with MVD in stable patients – trending towards complete revascularization (PRAMI, CvLPRIT Trials)
- STEMI with Cardiogenic shock – definitely culprit only! (CULPRIT SHOCK Trial, 1-year follow up).

Pathways in STEMI/MV interventions

Do STEMI Culprit Lesion Only

Do Complete Revascularization

At Time of Primary PCI

During Same Hospitalization

Staged Elective Intervention

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PCI Strategies in Patients With STEMI and MV disease : CVO

Primary PCI Versus MV PCI

Strategies	Culprit vessel-only primary PCI	Multivessel primary PCI	Staged PCI
Initial procedure	Culprit vessel-only PCI	Culprit vessel PCI and non-culprit vessel PCI	Culprit vessel-only PCI
↓ Days-weeks later	Non-culprit vessel PCI for spontaneous ischemia or intermediate/high risk findings on noninvasive testing		Non-culprit vessel PCI
 Pros	Reduced contrast volume Reduced risk of PCI complications	Decreased repeat revascularization Decreased hospital length of stay	Time to assess benefit vs. risk of non-culprit vessel PCI
 Cons	Increased repeat revascularization risk Potential reduction in LV recovery	Prolonged procedure time Increased contrast volume Increased periprocedural MI risk Potentially unnecessary PCI of functionally insignificant stenosis	Additional PCI access risk Additional procedure costs

Culprit vs Non-Culprit

Table 3. Prespecified Clinical Outcomes

Outcome	Preventive PCI (N = 234)	No Preventive PCI (N = 231)	Hazard Ratio (95% CI)	P Value
<i>no. of events</i>				
Primary outcome				
Death from cardiac causes, nonfatal myocardial infarction, or refractory angina†	21	53	0.35 (0.21–0.58)	<0.001
Death from cardiac causes or nonfatal myocardial infarction†	11	27	0.36 (0.18–0.73)	0.004
Death from cardiac causes	4	10	0.34 (0.11–1.04)	0.07
Nonfatal myocardial infarction	7	20	0.32 (0.13–0.75)	0.009
Refractory angina	12	30	0.35 (0.18–0.69)	0.002
Secondary outcomes				
Death from noncardiac causes	8	6	1.10 (0.38–3.18)	0.86
Repeat revascularization	16	46	0.30 (0.17–0.56)	<0.001

* All patients underwent infarct-artery PCI.

† Only the first event per patient is listed.

CORONARY

Complete or Culprit-Only Revascularization for Patients With Multivessel Coronary Artery Disease Undergoing Percutaneous Coronary Intervention



A Pairwise and Network Meta-Analysis of Randomized Trials

Islam Y. Elgendy, MD,^a Ahmed N. Mahmoud, MD,^a Dharam J. Kumbhani, MD, SM,^b
Deepak L. Bhatt, MD, MPH,^c Anthony A. Bavry, MD, MPH^{a,d}

CONCLUSIONS Current evidence from randomized trials suggests that the risk of all-cause mortality and spontaneous reinfarction is not different among the various revascularization strategies for multivessel disease. Complete revascularization at the index procedure or as a staged procedure (either during the hospitalization or after discharge) was associated with a reduction of MACE due to reduction in urgent revascularization with no difference between these 3 strategies. Future trials are needed to determine the impact of complete revascularization on the risk of all-cause mortality and spontaneous reinfarction. (J Am Coll Cardiol Intv 2017;10:315-24) © 2017 by the American College of Cardiology Foundation. Published by Elsevier. All rights reserved.

Editorial PRAMI, CvLPRIT

- Compared with culprit-only intervention, the complete revascularization strategy may be superior due to lower proportions of long-term cardiovascular mortality, long-term revascularization, and long-term non-fatal myocardial infarction, but these findings are based on evidence of very low quality. There is a need for more Randomized Controlled Trials in order to draw a stronger conclusion.

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Complete Revascularization During Primary Percutaneous Coronary Intervention Reduces Death and Myocardial Infarction in Patients With Multivessel Disease

Meta-Analysis and Meta-Regression of Randomized Trials

Vincenzo Pasceri, Giuseppe Patti, Francesco Pelliccia, Carlo Gaudio, Giulio Speciale, Roxana Mehran and George D. Dangas

Conclusions When feasible, complete revascularization with PCI can significantly reduce the combined endpoint of death and MI. Complete revascularization performed during primary PCI was also associated with significant reductions in both total mortality and MI, whereas staged revascularization did not improve these outcomes.



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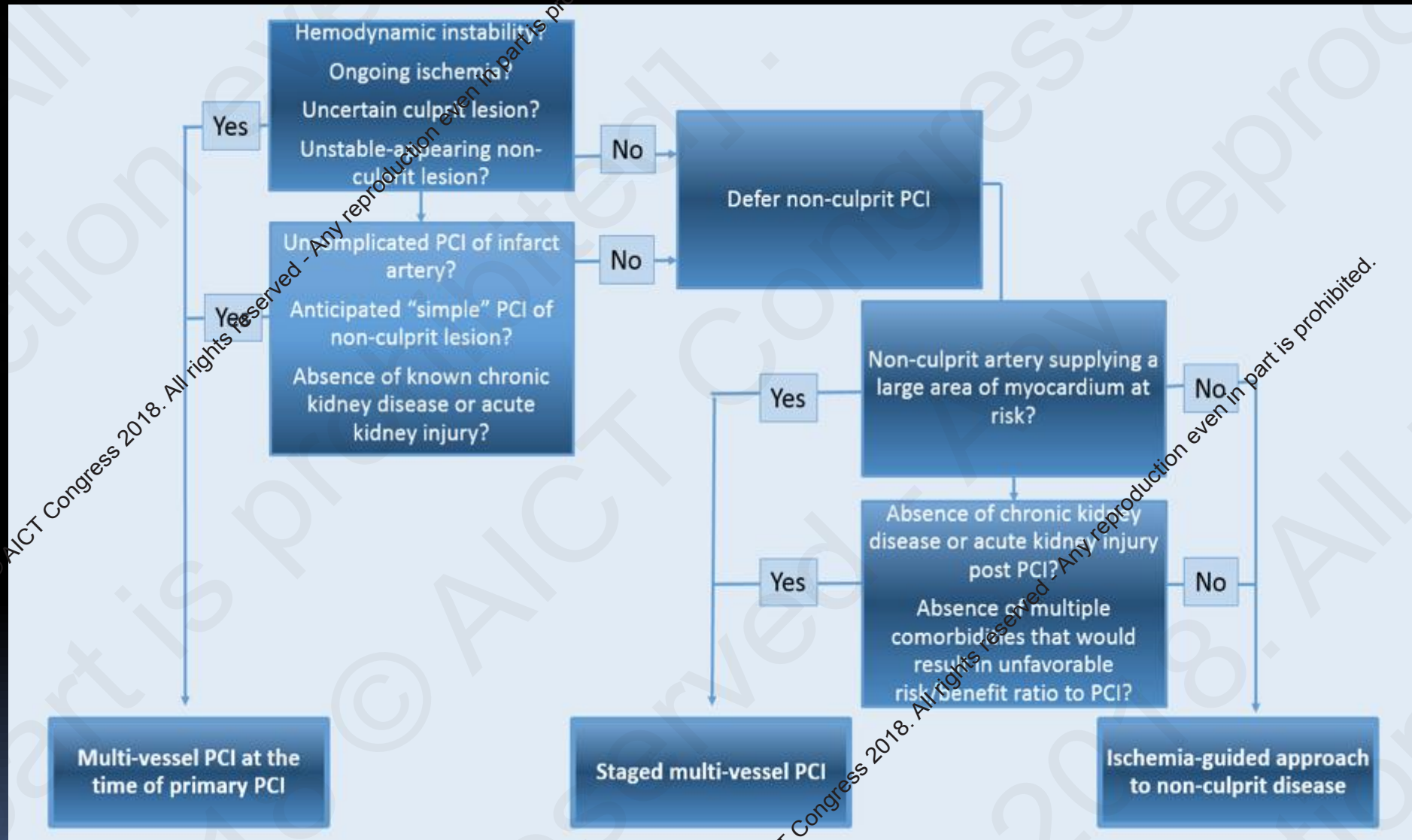
The Management of MVD in STEMI: The Science and Art of Decision-Making in STEMI

Feb 07, 2018 | Jacqueline E. Tamis-Holland, MD, FACC; Addi Suleiman, MBBS

Expert Analysis

Conclusions

In summary, much of the more recent data from RCT suggest that multi-vessel PCI in stable patients with STEMI is safe, results in a decrease in the need for repeat revascularization, and may improve other cardiovascular outcomes. On the other hand, early results from the CULPRIT-SHOCK trial support a strategy of culprit-only revascularization during the index procedure in patients with acute MI complicated by cardiogenic shock. Based on the RCT data, one might conclude that multi-vessel PCI is a reasonable treatment for stable patients with STEMI and MVD. However, it is important to recognize that multi-vessel PCI may not be the right approach for everyone. There is an "art" as well as a "science" to treating these patients, rather than generalizing management based on the RCT, we must instead tailor therapy for each patient, incorporating clinical features, angiographic findings, and patient preference into our decision-making.



Jacqueline E. Tamis-Holland, MD, FACC; Addi Suleiman, MBBS The Management of MVD in STEMI: The Science and Art of Decision-Making in STEMI. ACC Feb 2018



The seismic reversal for Cardiogenic Shock

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Multivessel Percutaneous Coronary Intervention in Patients With ST-Segment Elevation Myocardial Infarction With Cardiogenic Shock

Joo Myung Lee, Tae-Min Rhee, Joo-Yong Hahn, Hyun Kuk Kim, Jonghanne Park, Doyeon Hwang, Ki Hong Cho, Jihoon Kim, Taek Kyu Park, Jeong Hoon Yang, Young Bin Song, Jin-Ho Choi, Seung-Hyuk Choi, Bon-Kwon Koo, Yong Jo Kim, Shung Chull Cha, Myeong Chan Cho, Chong Jin Kim, Hyeon-Cheol Gwon, Ju Han Kim, Hyo-Soo Kim, Myung Ho Jeong and for the KAMIR Investigators

Conclusions Of patients with STEMI and multivessel disease with cardiogenic shock, multivessel PCI was associated with a significantly lower risk of all-cause death and non-IRA repeat revascularization. Our data suggest that multivessel PCI for complete revascularization is a reasonable strategy to improve outcomes in patients with STEMI with cardiogenic shock.

ON MY MIND

**CULPRIT-SHOCK (Culprit Lesion Only PCI
Versus Multivessel Percutaneous Coronary
Intervention in Cardiogenic Shock)
Implications on Guideline Recommendations**

CONCLUSIONS From our perspective, CULPRIT-SHOCK clearly challenges current guidelines and appropriate use criteria. Culprit-lesion-only PCI with possible staged revascularization should be the preferred revascularization strategy, which can also be translated as “keep the revascularization strategy simple.” Immediate routine multivessel PCI should be avoided in patients with multivessel coronary artery disease and cardiogenic shock complicating acute myocardial infarction.



ORIGINAL ARTICLE

One-Year Outcomes after PCI Strategies in Cardiogenic Shock

Mirger Thiele, M.D., Ibrahim Akin, M.D., Marcus Sandri, M.D., Suzanne de Waha-Thiele, M.D., Roza Meyer-Saraei, Ph.D., Georg Fuernau, M.D., Ingo Eitel, M.D., Peter Nordbeck, M.D., Tobias Geisler, M.D., Ulf Landmesser, M.D., Carsten Skurk, M.D., Andreas Fach, M.D., et al., for the CULPRIT-SHOCK Investigators*

CONCLUSIONS

Among patients with acute myocardial infarction and cardiogenic shock, the risk of death or renal-replacement therapy at 30 days was lower with culprit-lesion-only PCI than with immediate multivessel PCI, and mortality did not differ significantly between the two groups at 1 year of follow-up. (Funded by the European Union Seventh Framework Program and others; CULPRIT-SHOCK ClinicalTrials.gov number, [NCT01927549](https://clinicaltrials.gov/ct2/show/study/NCT01927549).)



Putting it all together, including Mehta Strategy

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Mehta Strategy

- Foremost, the culprit lesion must remain the focus, achieving all 4 parameters of a successful STEMI Intervention – relief of chest pain, ST segment resolution, TIMI 3 flow, MPG 3
- Proceed to non culprit if result of culprit is perfect and the non culprit is technically simple (analogy – “Can I use the same equipment”)
- For cardiogenic shock – culprit only.

14th

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