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Editorial Note

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How do i revscularize my patient of mi with multivessel disease with a closer look at the literature?

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MI with multivessel disease Culprit vessel angioplasty is a rule, and it is also certain that complete revascularization helps Not clear is the timing of complete revascularization. Whether to do an anatomical or physiological assessment of non-culprit vessels

Whether complete revascularization decreases mortality-although favorable effect on future mace and re-re-revascularization appears undeniable Few points from already completed trials.

1. Complete Revascularization (CR) Reduces Recurrent MI: CR significantly lowers the risk of recurrent MI compared to the infarct-related artery (IRA)--only revascularization, with immediate CR providing the greatest benefit.

2. Immediate CR Outperforms Staged CR: A 3-node analysis showed a 45% relative risk reduction in recurrent MI with immediate CR compared to staged CR, suggesting a timing-dependent advantage.

3. Guidance Methods for CR Show Different Benefits: Angiography-guided and functionally guided immediate CR reduced MI risk by 58% and 47%, respectively, compared with IRA-only revascularization, while staged CR showed no significant MI reduction.

4. Large Trials Support CR Benefits: The COMPLETE and FIRE trials demonstrated significant reductions in recurrent MI and major adverse cardiovascular events (MACE) with CR, while other trials (DANAMI-3-PRIMULTI, COMPARE-ACUTE) linked CR benefits mainly to reduced repeat revascularization.

5. FULL REVASC Found Limited Benefits of Functionally Guided CR: This large-scale trial showed no significant improvement in MI reduction with functionally guided staged CR versus IRA-only revascularization, except for lower repeat revascularization rates.

6. Potential Mechanism for Immediate CR Benefits: Immediate CR may reduce myocardial necrosis by improving collateral circulation, aligning with the pathophysiology of acute MI.

7. Uncertainty Around Periprocedural MI in Immediate CR: MULTISTARS AMI and BIOVASC trials suggested that differences in MI outcomes might be influenced by periprocedural MI definitions and preprocedural troponin levels.

8. Heterogeneity in Functionally Guided CR Outcomes: Trials using functionally guided CR (COMPARE-ACUTE, FULL REVASC, FLOWER-MI, FRAME-AMI) showed conflicting results, likely due to differences in lesion assessment criteria.

9. CR Consistently Lowers Repeat Revascularization: Regardless of timing or guidance method, CR was associated with a 49% to 67% reduction in repeat revascularization compared with IRA-only revascularization.

10. Limitations and Need for Further Research: There are limitations due to study heterogeneity, lack of individual patient data, inconsistent procedural timing, and limited use of intravascular imaging. Larger trials with standardized methodologies are needed for more definitive conclusions.