



Routine Revascularization vs. Medical therapy: Meta-analysis and Review

**Sripal Bangalore, M.D., M.H.A., David J. Maron, M.D.,
Gregg W. Stone, M.D., Judith S. Hochman, M.D.**

New York University Grossman School of Medicine

Speaker's name : Sripal Bangalore

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Why do we Revascularize in Stable Ischemic Heart Disease?

- **To improve survival**
- **To prevent other cardiovascular events**
- **To improve quality of life**

Contemporary Revascularization vs. Medicine SIHD Trials

No difference in mortality

2007



No difference in death

2009

BARI 2D



A WINDOW OF OPPORTUNITY
FOR COORDINATED CARE

No difference in death

2012

**FAME 2
Trial**

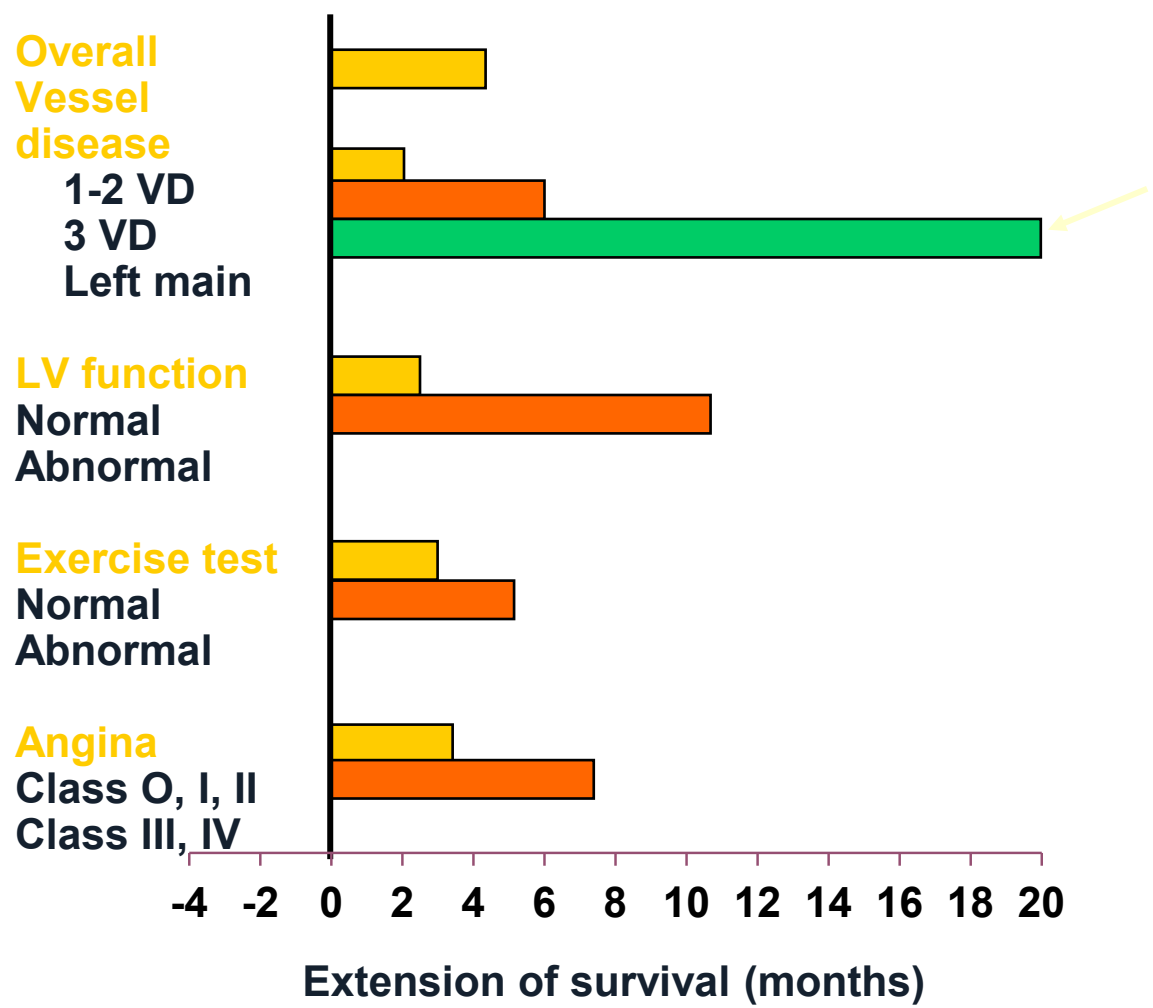
No difference in death

Guidelines Continue to Recommend Revascularization to Improve Survival in SIHD

Revascularization Method*	COR	LOE
3-vessel disease with or without proximal LAD artery disease*		
CABG	I	B
	IIa—It is reasonable to choose CABG over PCI in patients with complex 3-vessel CAD (e.g., SYNTAX score >22) who are good candidates for CABG	B
PCI	IIb—Of uncertain benefit	B
2-vessel disease with proximal LAD artery disease*		
CABG	I	B
PCI	IIb—Of uncertain benefit	B
2-vessel disease without proximal LAD artery disease*		
CABG	IIa—With extensive ischemia	B
	IIb—Of uncertain benefit without extensive ischemia	C
PCI	IIb—Of uncertain benefit	B
1-vessel proximal LAD artery disease		
CABG	IIa—With LIMA for long-term benefit	B
PCI	IIb—Of uncertain benefit	B

Extension of Survival with Revascularization

CABG vs. No CABG trials-1980s



Yusuf et al. Lancet 1994;344:563-570.

Routine Revasc vs. Initial Medical Therapy *Objectives*

- **To perform a meta analysis of randomized trials comparing routine revascularization versus an initial conservative strategy in patients with SIHD.**

- **PUBMED/EMBASE/CENTRAL searches for RCT comparing routine revascularization versus an initial conservative strategy in patients with SIHD**
- **Trials that enrolled patients within 48 hours of ACS were excluded**
- **Trials that only enrolled post MI patients (such as ALKK and SWISSI-2) were excluded**

Routine Revasc vs. Initial Medical Therapy Methods

- **Trials categorized into:**
 - **“no stent” trials:** <50% of patients in the PCI group received a stent
 - **“stent” trials:** ≥50% of patients received a stent
- **Trials also categorized into:**
 - **“no statin” trials:** <50% of patients in the medical therapy group received a statin
 - **“statin” trials:** ≥50% of patients in the medical therapy group received a statin

- **Death**
- **Cardiovascular death**
- **MI including procedural and non-procedural MI**
- **Unstable angina**
- **Heart failure**
- **Stroke**
- **Freedom from angina**

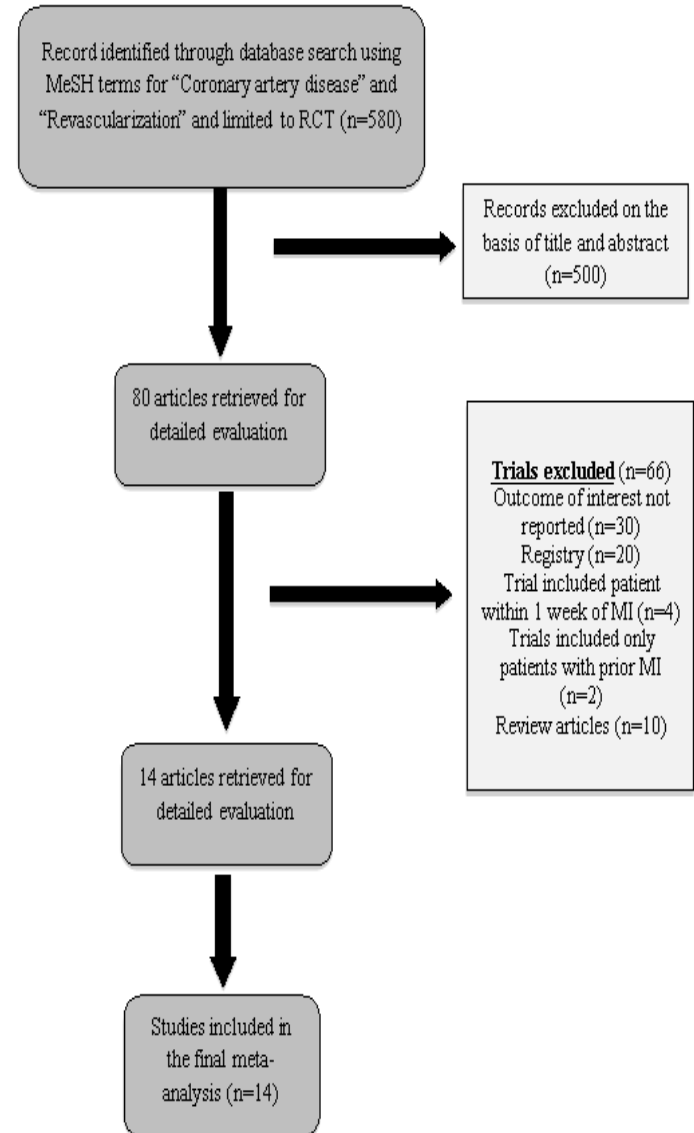
Routine Revasc vs. Initial Medical Therapy

Statistical Analysis

- ITT
- Stratified by “stent” vs. “no stent” trials
- Both a random-effects model (DerSimonian and Laird) and a fixed effect model was used
- Statistical heterogeneity was assessed using the I^2 statistic
- Trial sequential analysis for a 10% relative risk reduction for death, $\alpha=5\%$ and $1-\beta=80\%$ and estimating the required diversity adjusted information size was performed

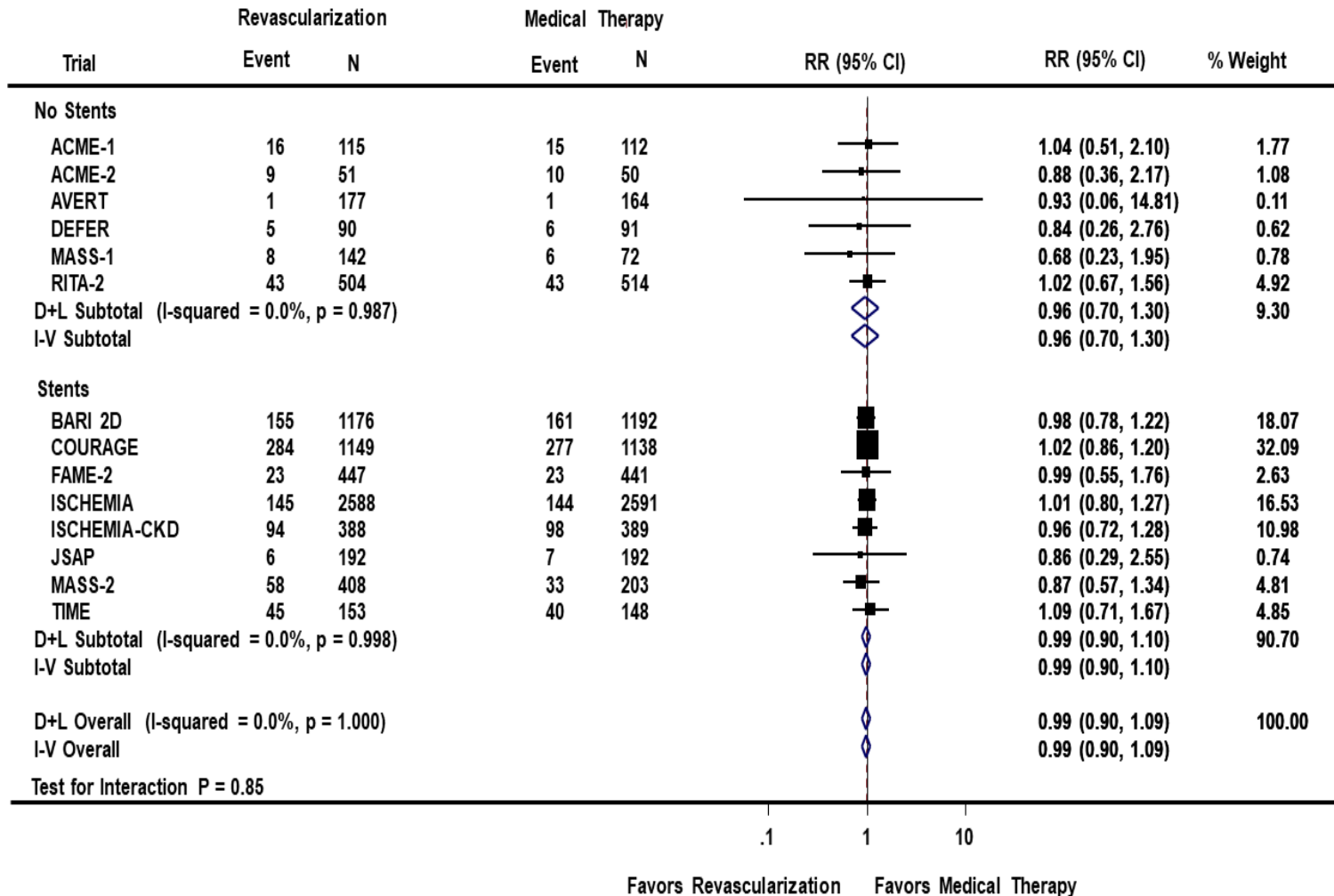
Routine Revasc vs. Initial Medical Therapy Study Selection

- 14 RCTs
- 14,877 patients
- Followed for a weighted mean of 4.5 years (range 1.5 to 6.2 years)
- 64,678 patient years of follow-up

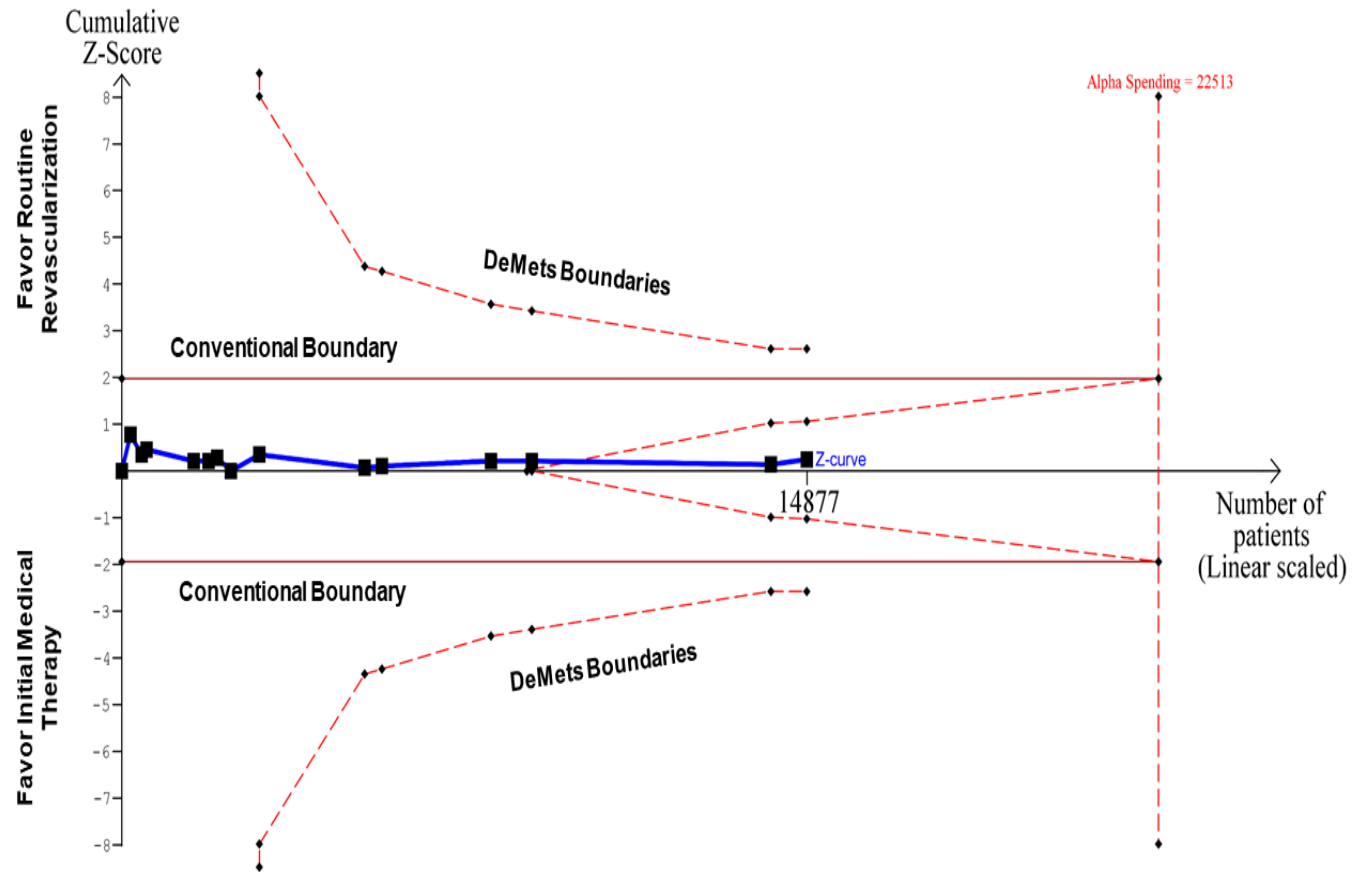


Routine Revasc vs. Initial Medical Therapy

Death

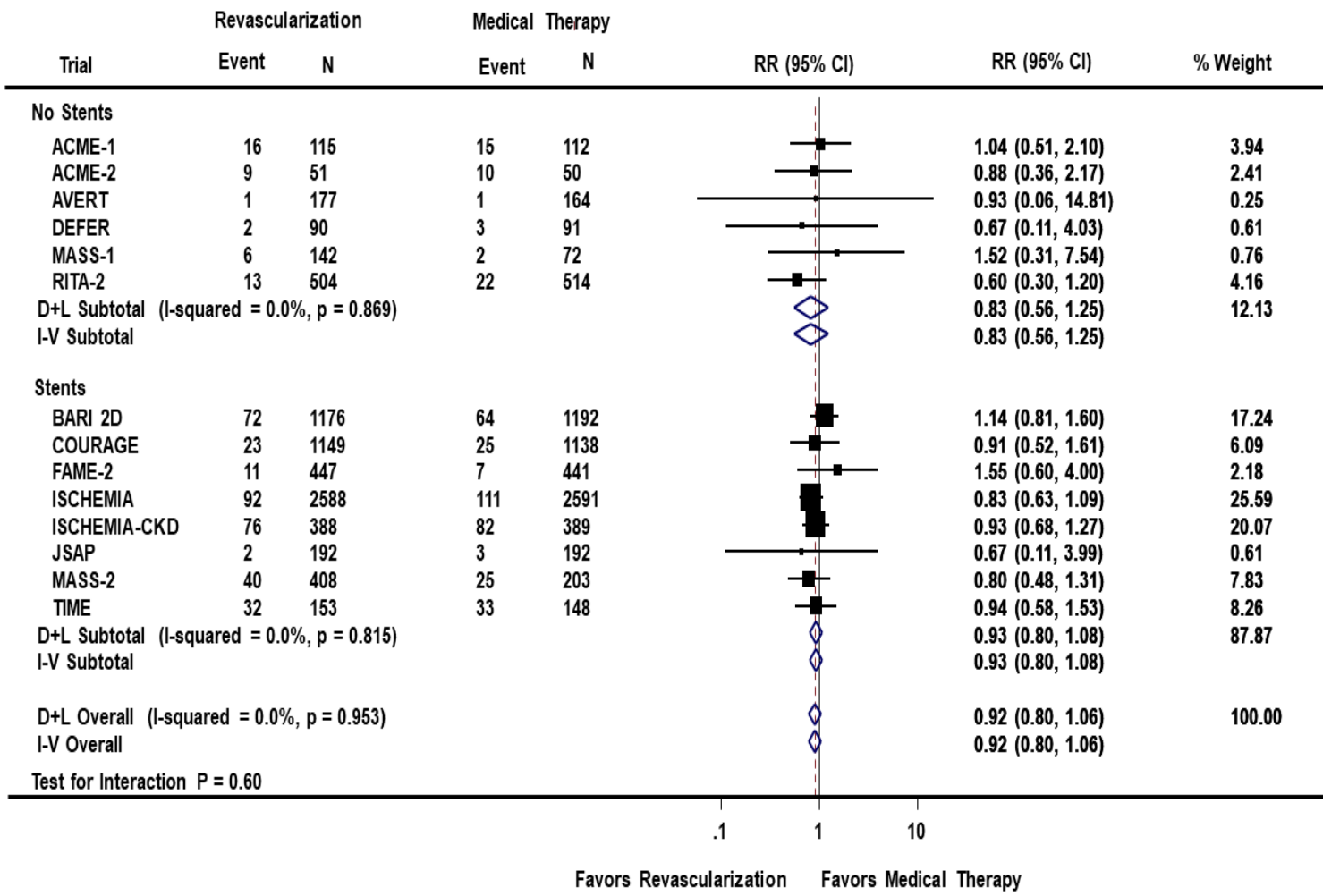


Routine Revasc vs. Initial Medical Therapy Death: Trial Sequential Analysis

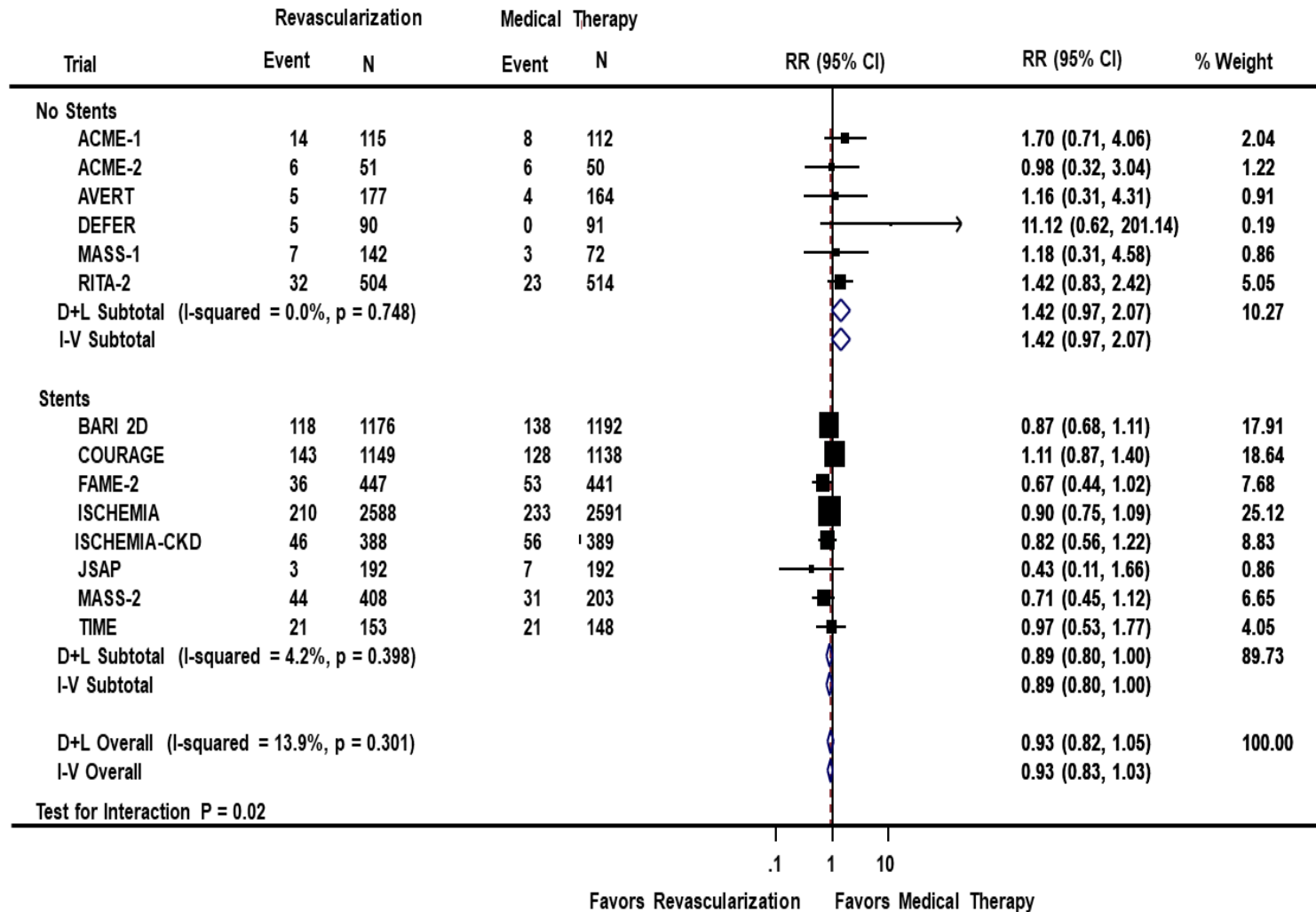


Routine Revas vs. Initial Medical Therapy

CV Death

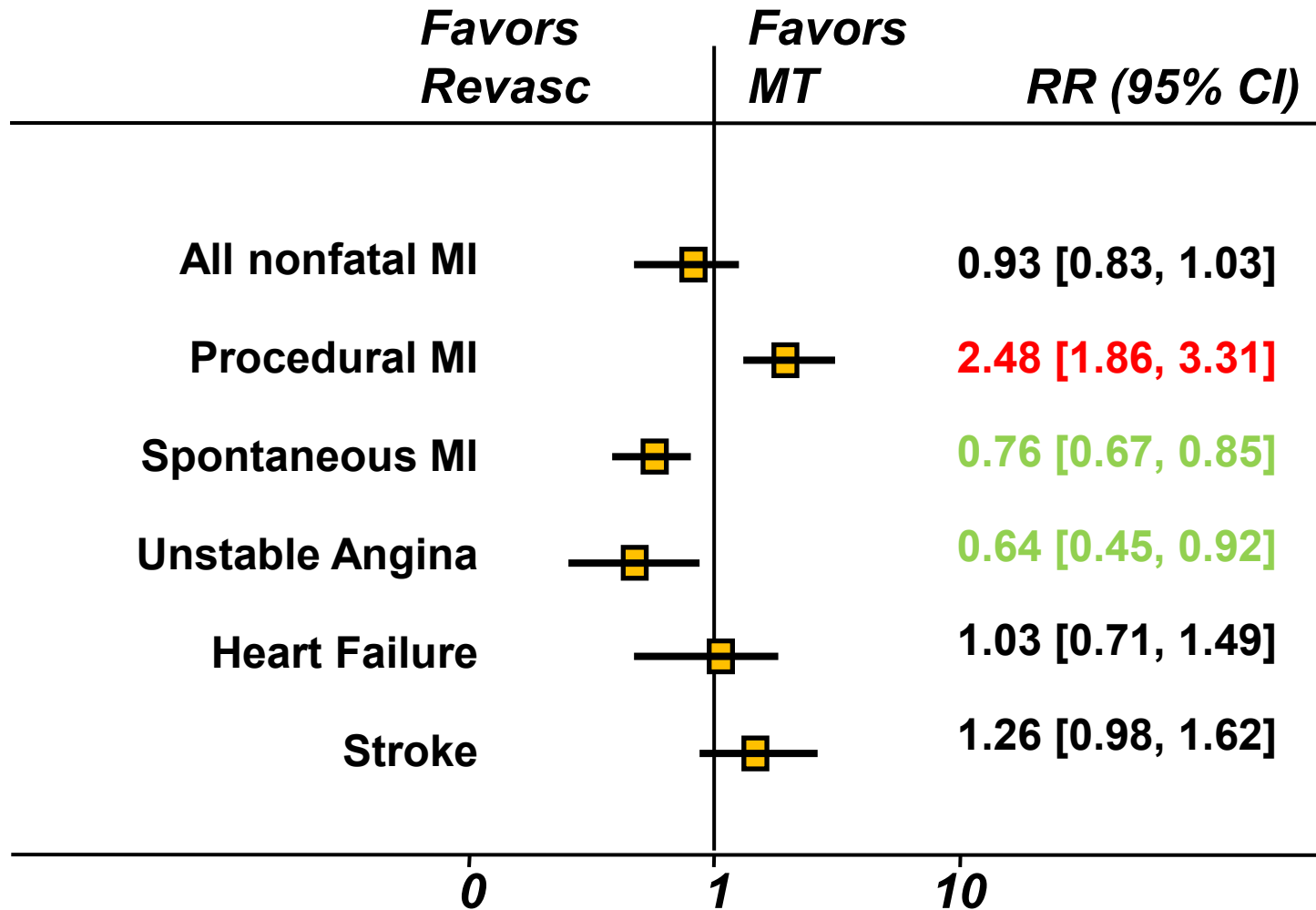


Routine Revasc vs. Initial Medical Therapy Myocardial Infarction

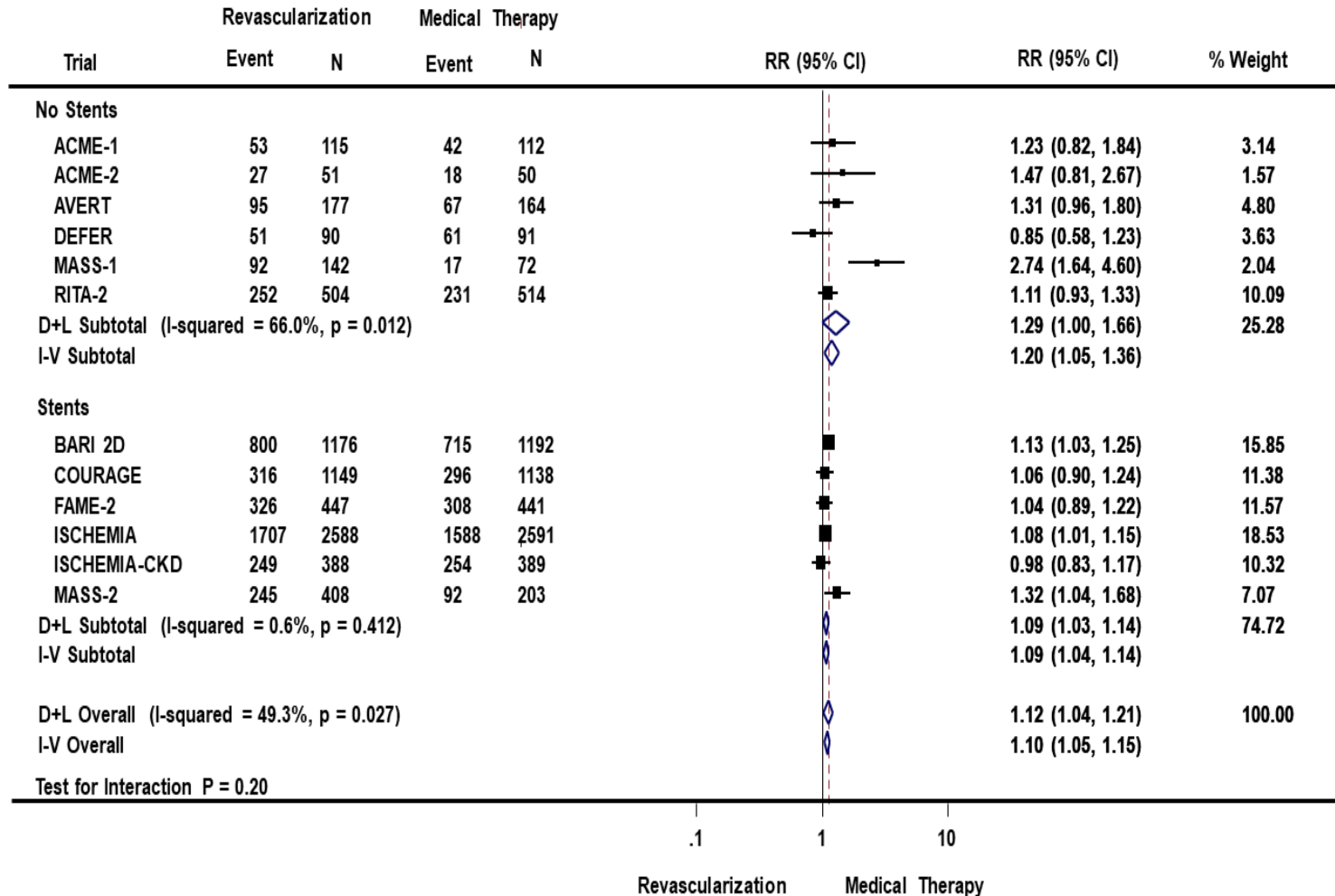


Routine Revasc vs. Initial Medical Therapy

Other Outcomes



Routine Revasc vs. Initial Medical Therapy Angina



Routine Revasc vs. Initial Medical Therapy

Study Limitations

- **Clinical heterogeneity in the included studies despite lack of statistical heterogeneity for most endpoints**
- **Variability in the definitions of outcomes, especially that for MI**

Routine revascularization when compared with initial medical therapy in SIHD

- Similar survival
- Reduced **non-procedural MI**
- Reduced **unstable angina**
- Greater **freedom from angina**
- Increased **procedural MI**