If periprocedural MI is not an endpoint… is the simple strategy really better?

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What is a periprocedural MI?

- pre-1990
- WHO definition
  - Q-waves
  - chest pain
  - ECG changes
  - (insensitive) enzyme changes
- a “proper” heart attack…

What is a periprocedural MI?

- 2000
- ESC/ACC definition
  - Q-waves
  - chest pain
  - ECG changes
  - special circumstances post PCI (CK or CKMB >3 ULN)
- not necessarily a proper heart attack

What is a periprocedural MI?

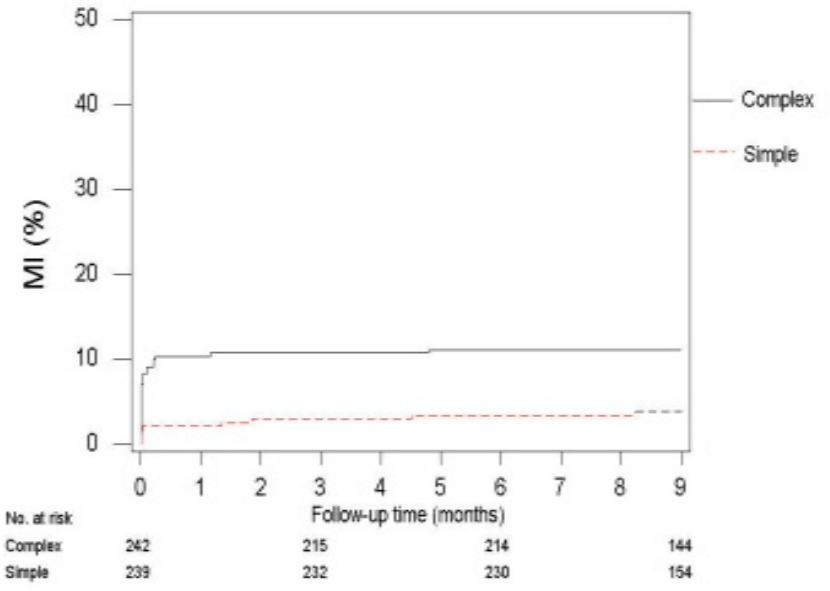
- 2007
- Universal definition
  - Q-waves
  - chest pain
  - ECG changes
  - 3 x ULN troponin
- not really a heart attack at all

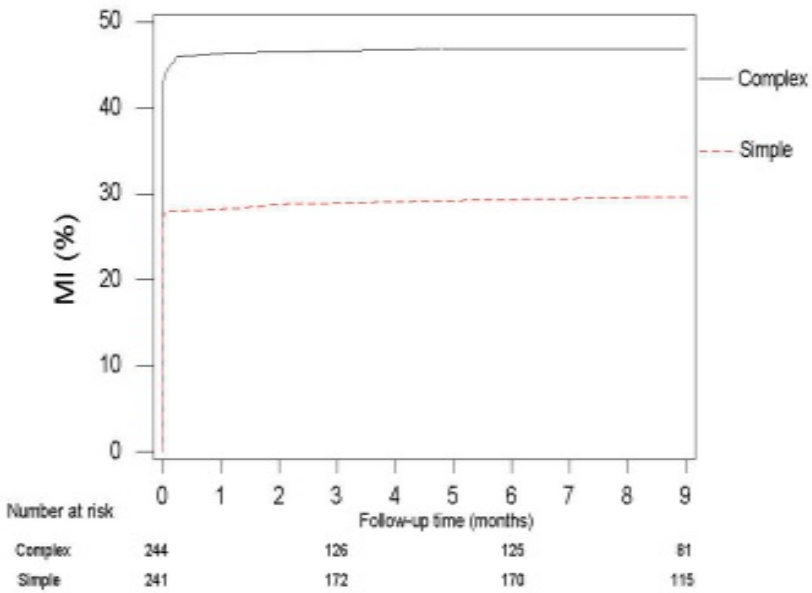
Short term outcomes after bifurcation stent

- Simple vs Complex strategies
- Much of the initial difference between techniques is accounted for by PPMI

	Simple	Complex	PPMI counted?
NORDIC	1.4%	1.0%	No
BBC ONE	3.6%	11.2%	Yes

Use of troponin rather than CK (BBC ONE)





I digress a little…

- and that's with the standard troponin assay rather than the high-sensitivity troponin assay….

So, is PPMI bad for you?

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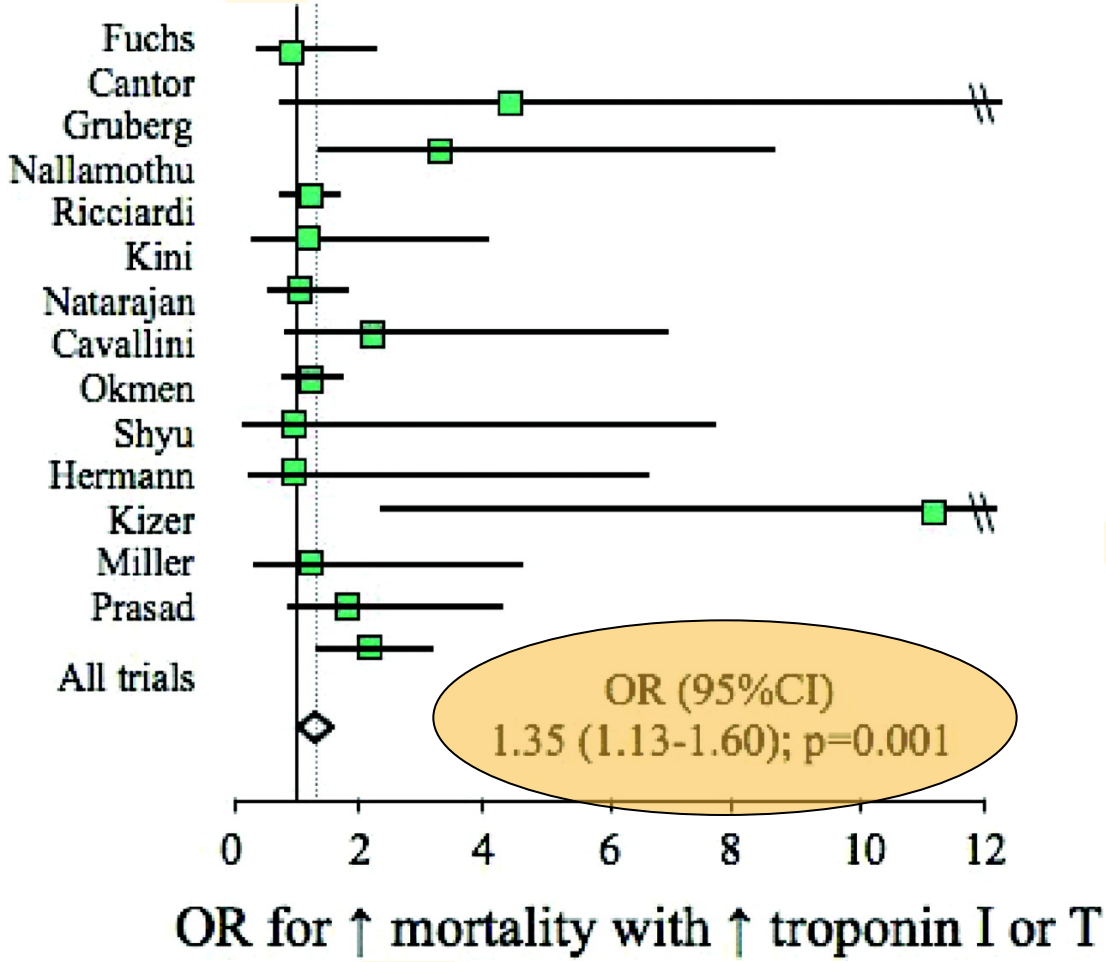


Lansky and Stone. Circ Intvn 2010

So, if we exclude the concept of PPMI..

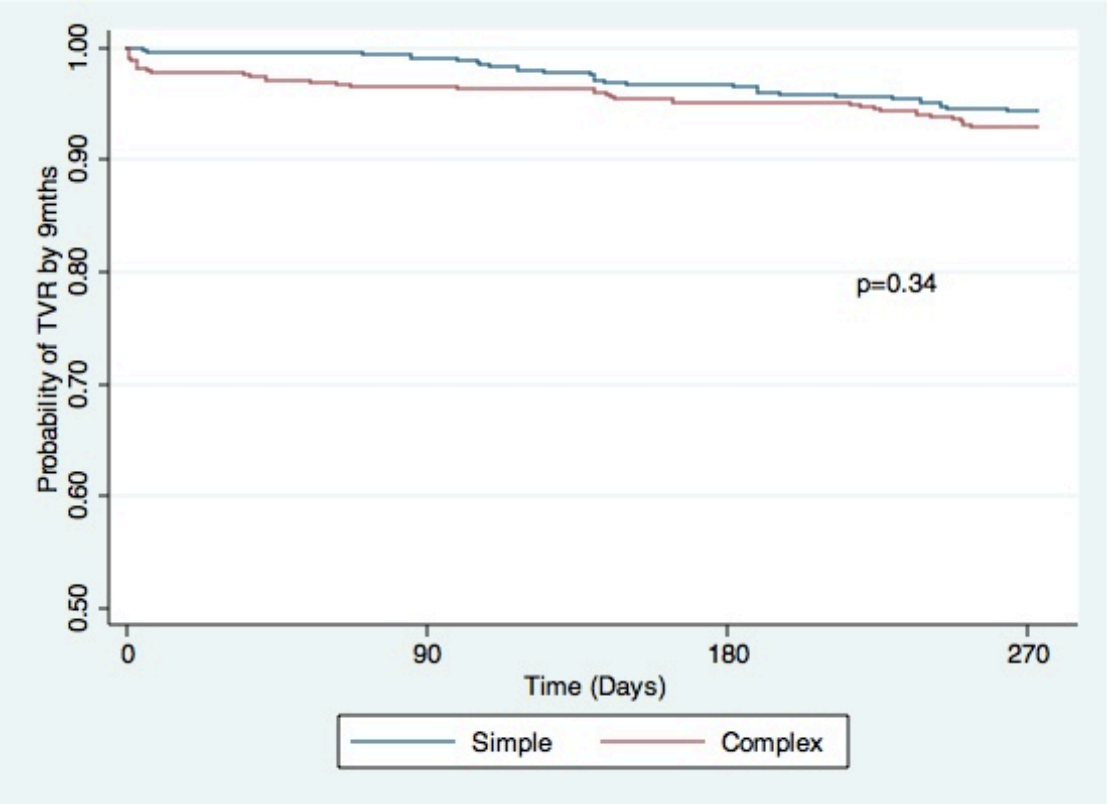
- what is the difference between simple and complex strategies?

- death
- target vessel revascularisation
- subsequent MI
- stent thrombosis

Short term differences

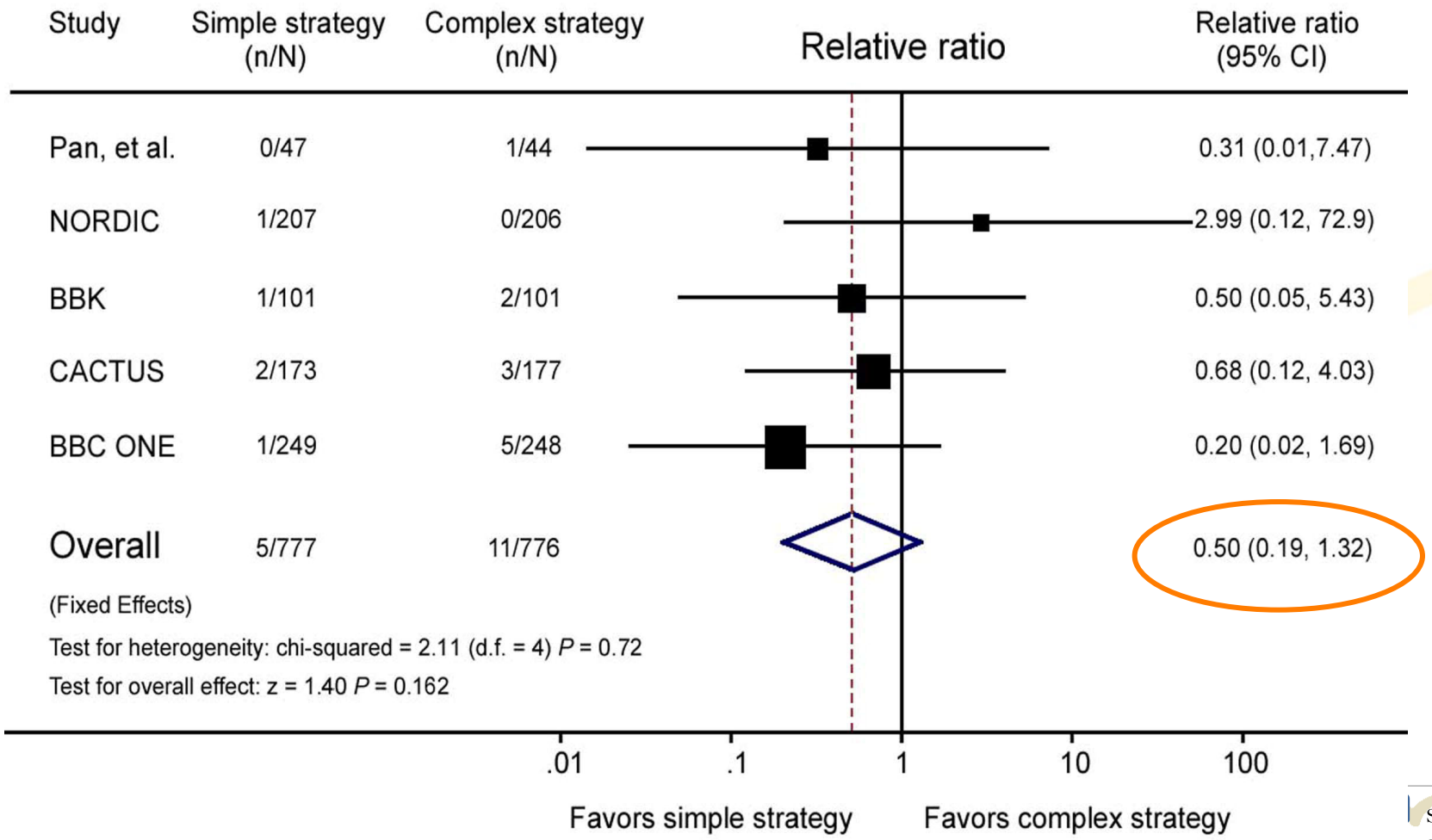
- No differences in death
  - low event rate

TVR (NORDIC & BBC ONE meta-analysis)



Behan et al Circ Intvn 2011

Stent thrombosis



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Predictors of LST / VLST

Multivariable analysis

LST / VLST in 67 lesions among 16,801 lesions
treated exclusively by Cypher

Factors	R.R.	95%C.I.	P Value
Hemodialysis	1.91	(1.29 - 2.65)	0.002
ESRD (e-GFR < 30/Non-HD)	1.81	(1.2 - 2.65)	0.007
Two stents for bifurcation	1.81	(1.17 - 2.59)	0.01

Those variables with p value < 0.1 in the univariable analysis were incorporated into the multivariable model.

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Long term differences

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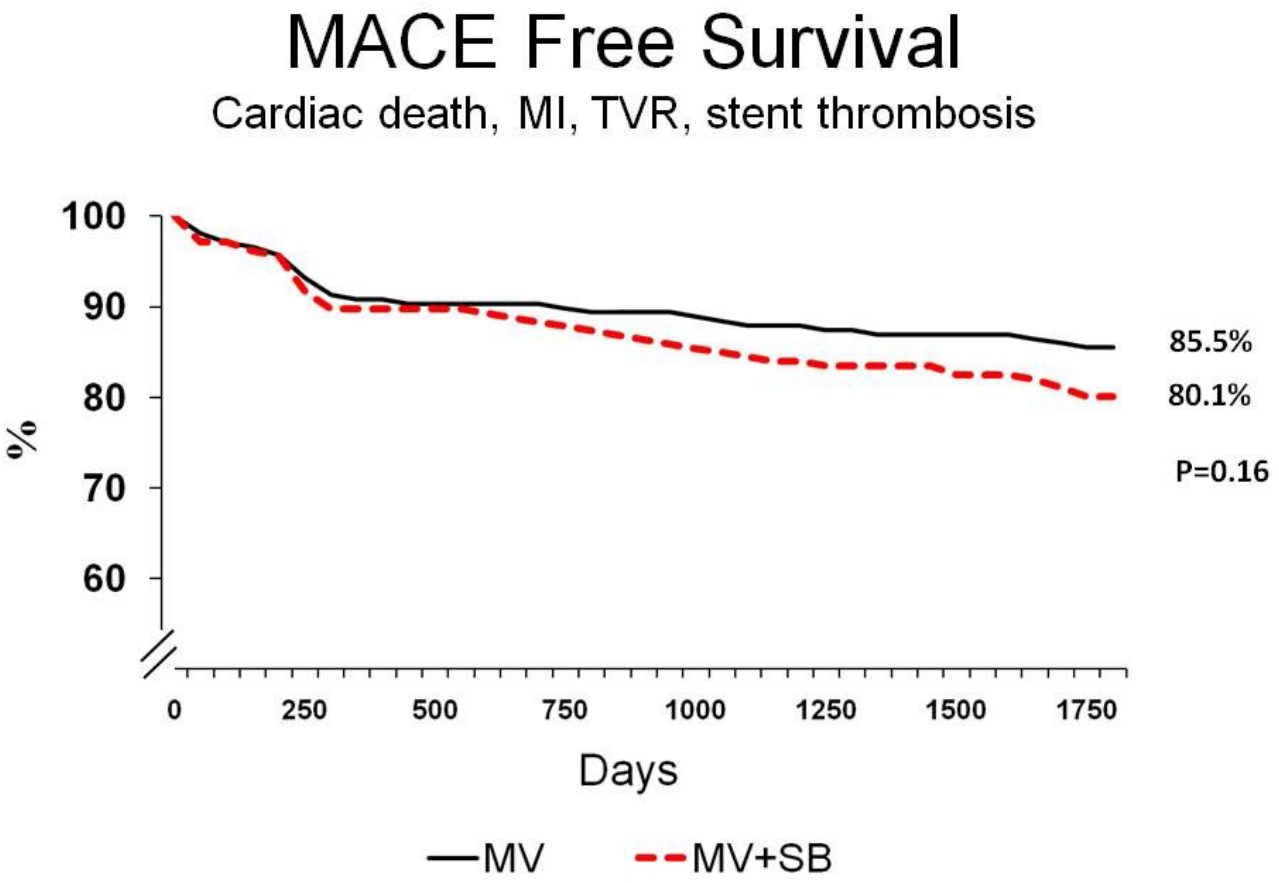
Long-term clinical outcome (NORDIC)



CONCLUSIONS

- "high-grade" Periprocedural MI is prognostically adverse (CKMB > 5-8)
- "low-grade" periprocedural MI is probably prognostically adverse
- The incidence of periprocedural MI is higher in complex bifurcation treatment
- Excluding periprocedural MI, there is still a trend towards less good long-term outcome for complex strategies
  - A perfectly executed culotte probably incurs no added long-term risk
  - A poorly executed culotte almost certainly incurs added long-term risk