

Long-term Prognosis After PCI for Chronic Total Occlusion in 524 Consecutive Patients

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on behalf of

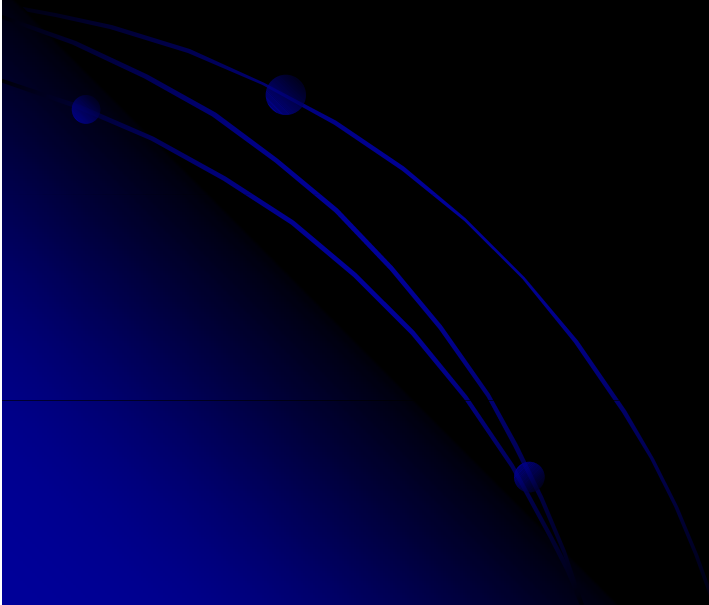
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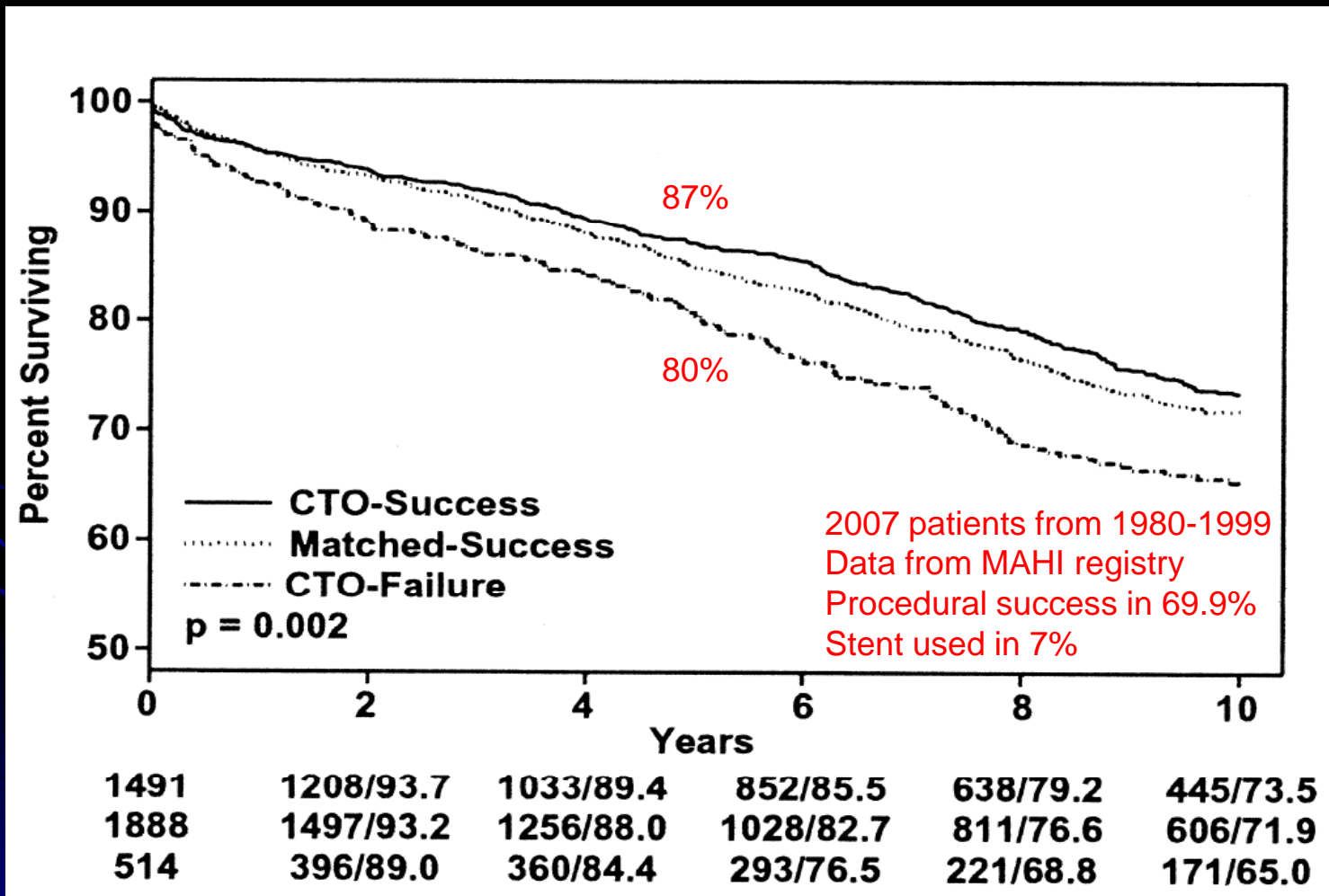
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Disclosures

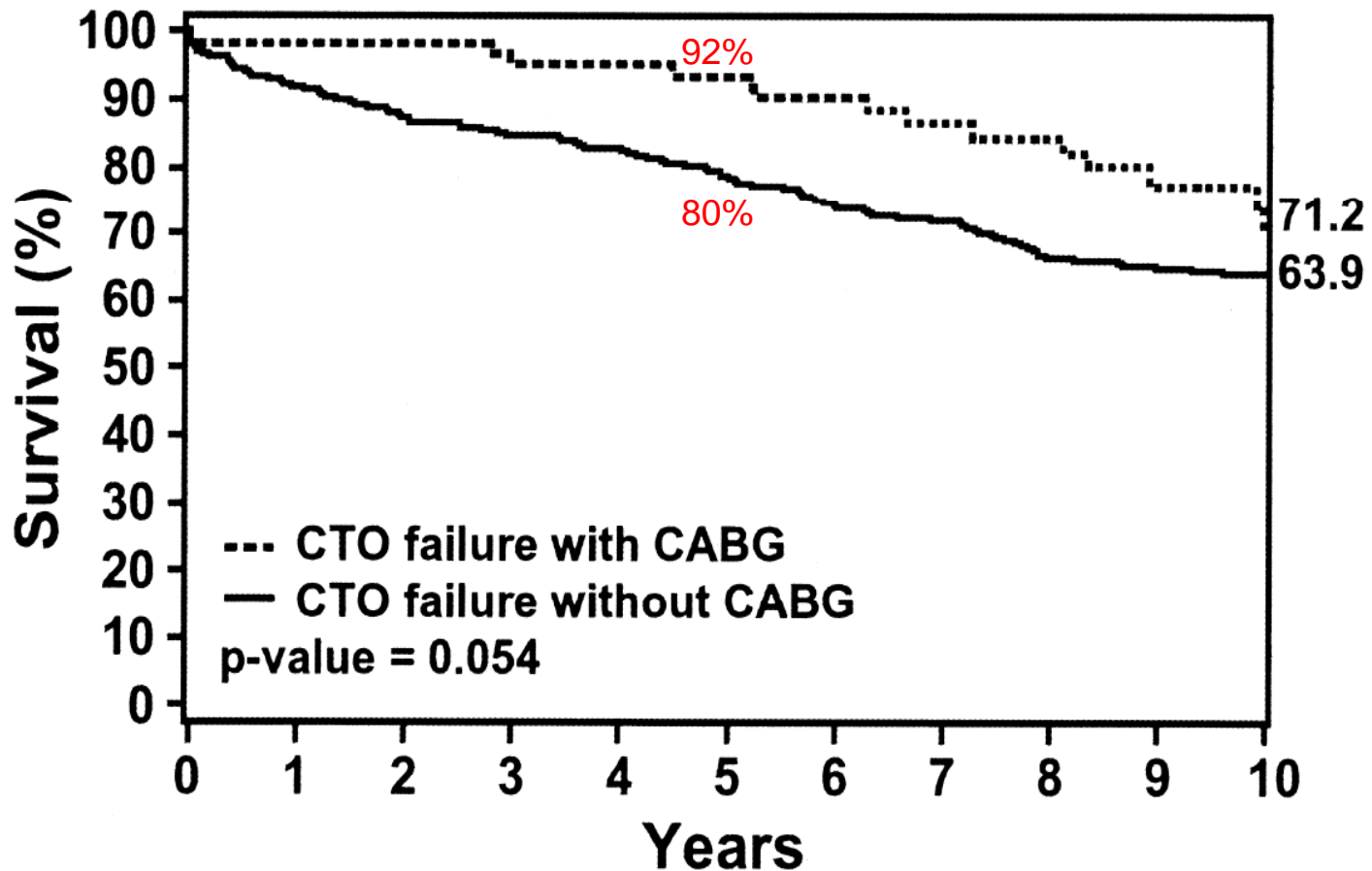
None



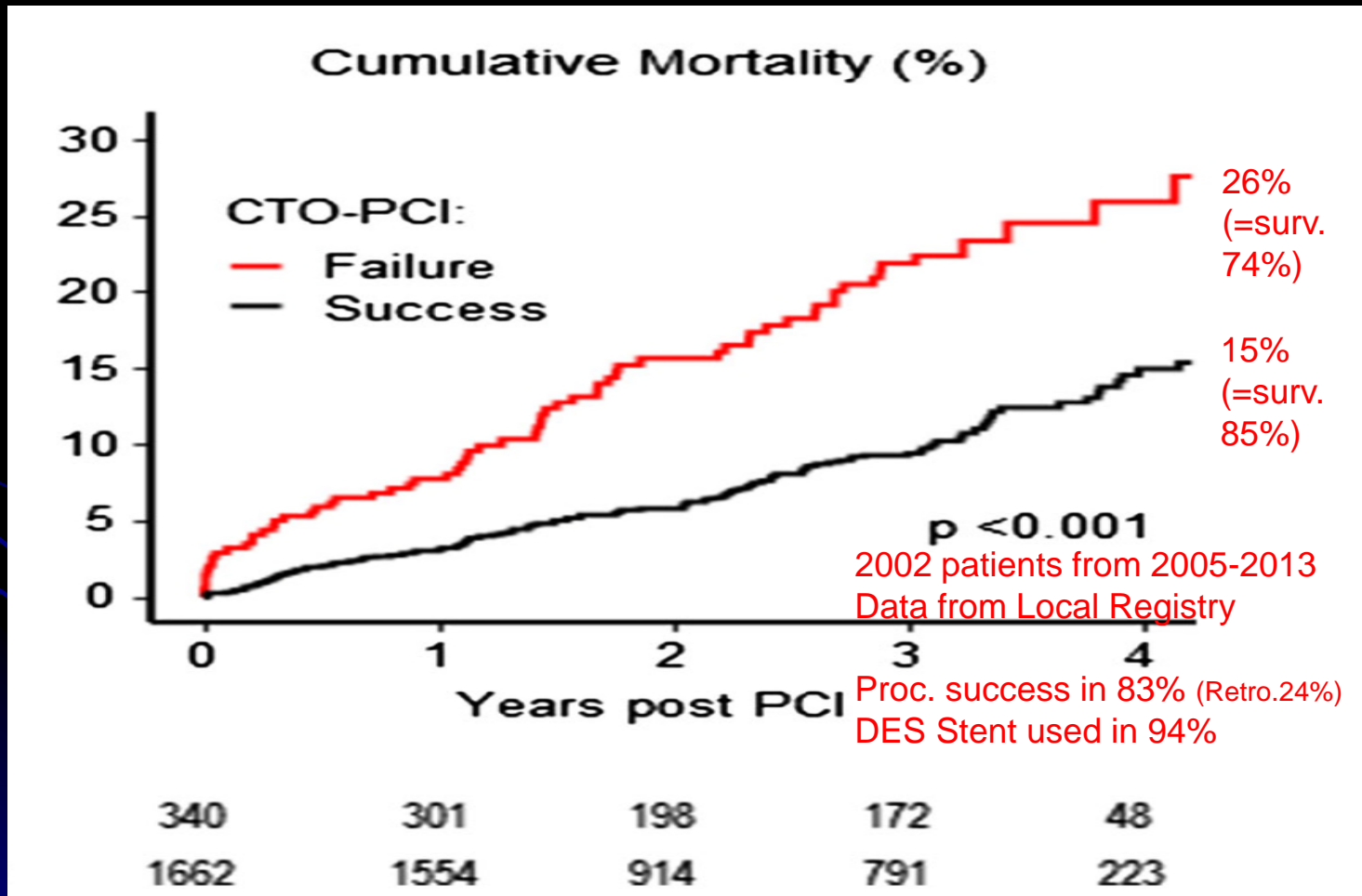
Sparse literature on the prognosis of CTO-treatment



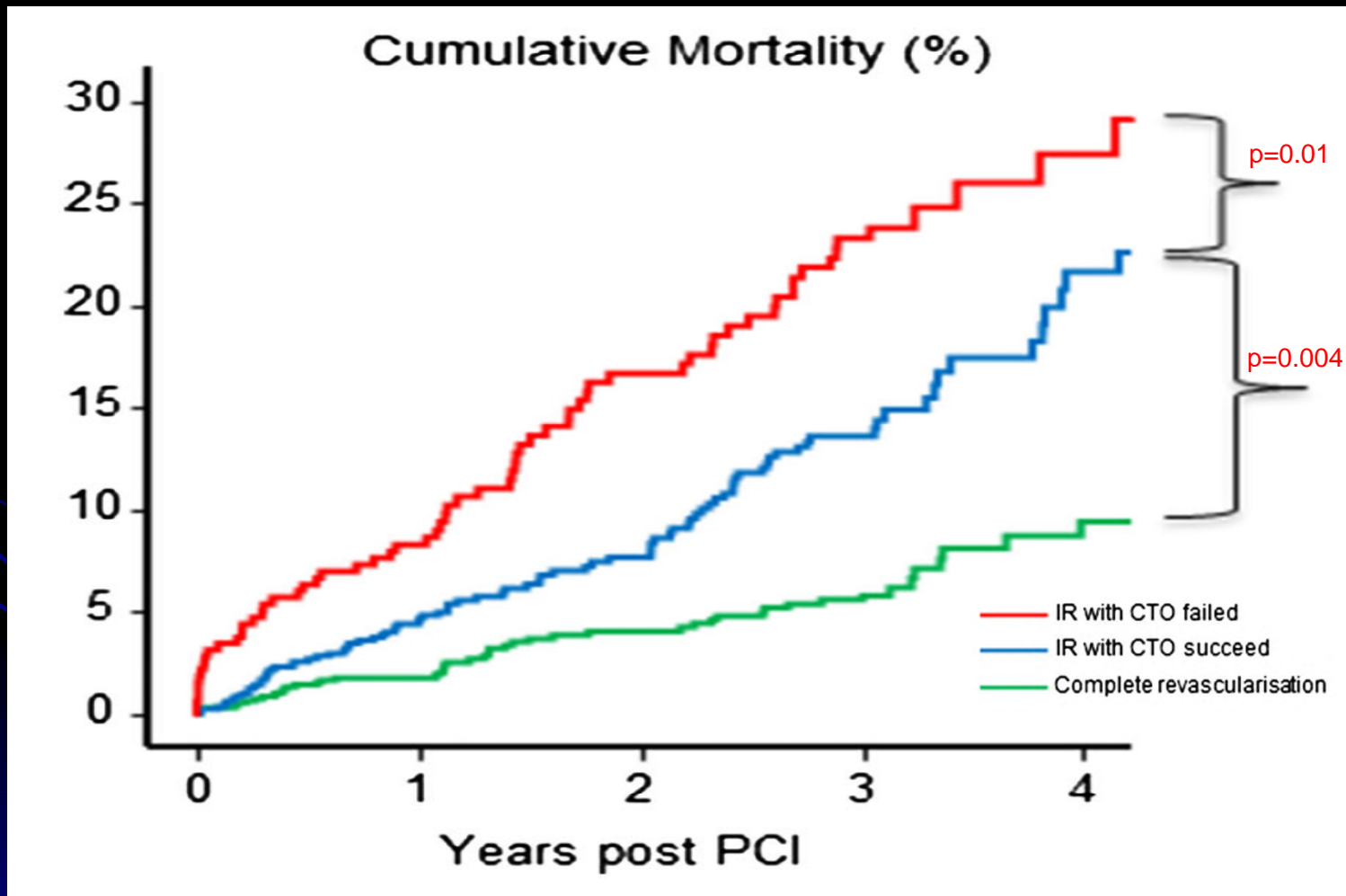
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Background

- The prognosis after successful treatment of CTO is largely unknown
- Evidence is primarily based on a few registry studies.

Inclusion criteria

All CTO procedures registered in the
West Denmark Heart Registry for
Aalborg University Hospital Jan. 2010 – Dec. 2015
- 524 CTO-patients (638 procedures)

Stable angina pectoris (CCS) or dyspnoe (NYHA)
with

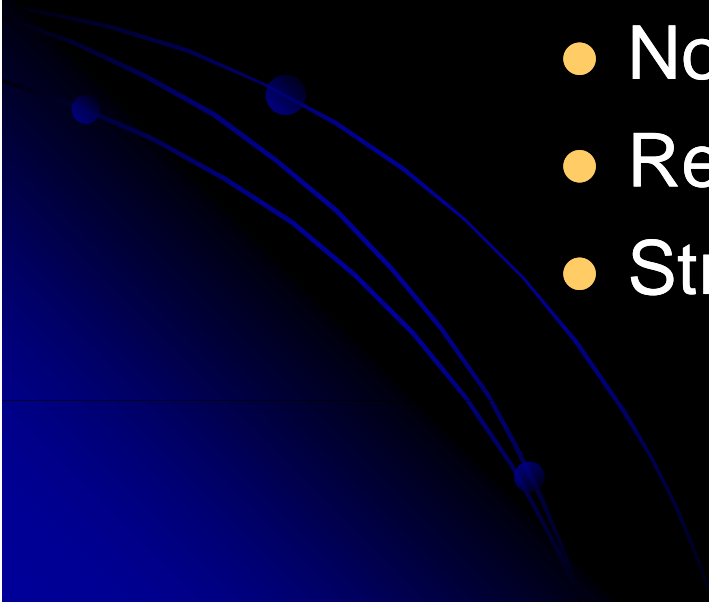
- reversible myocardial ischemia
(SPECT) or
- normal ejection fraction

Exclusion criteria

- CTO treatments with a flouroscopy time less than 5 minutes; i.e., non-CTO or diagnostic wiring attempts.
- Multi-lesions procedures excluded for F-U. to avoid procedural and clinical confounding effects of concomitant non-CTO lesions.

Primary endpoint

- A composite of major adverse cardiac and cerebrovascular events (MACCE)
 - All cause mortality
 - Non-procedural MI
 - Repeat revascularization
 - Stroke



Baseline characteristics

	CTO success	CTO failure	P-value
	N=349	N=154	
Age (yrs)	66 ± 12	66 ± 11	0.95
Gender (male)	276 (79 %)	125 (81 %)	0.68
Ejection Fraction %	49±13	52±11	0.02
Diabetes type I / type II	82 (24 %)	39 (25 %)	0.74
Family history of IHD	189 (54 %)	78 (51%)	0.53
Statin treatment	269 (77%)	116 (75%)	0.75
Hypertension	261 (75%)	119 (77%)	0.63
Active smoking	112 (31%)	48 (31%)	0.92

Clinical characteristics

	CTO success	CTO failure	P-value
CTO vessel - LAD	27 %	30 %	0.78
- CX	23 %	19%	
- RCA	48 %	48 %	
- Graft	2 %	3 %	
Previous attempts	16 %	25 %	0.01
Age of CTO, months	15 ± 32	16 ± 37	0.65
CTO vessel diameter, mm	3.1 ± 0.8	3.0 ± 0.8	0.52
length, mm	33.4 ± 21.3	32.7 ± 20.4	0.72
tortuous	29 %	47 %	0.0001
calcification	39 %	48 %	0.08
ostial CTO	26 %	38 %	0.007

Procedural characteristics

	CTO success	CTO failure	P-value
Antegrade technique	90 %	79 %	0.002
Retrograde technique	3.2 %	4.5 %	0.61
Combined antegrad first	4.9 %	14 %	0.002
Combined retrograd first	2.6 %	4.5 %	0.38
Flourotime, minutes	26 ± 22	30 ± 23	0.02
Contrast, ml	248 ± 146	242 ± 171	0.68

Follow-up

Overall procedural success was 71 %

CCS or NYHA \geq 2

before the procedure

87.1%

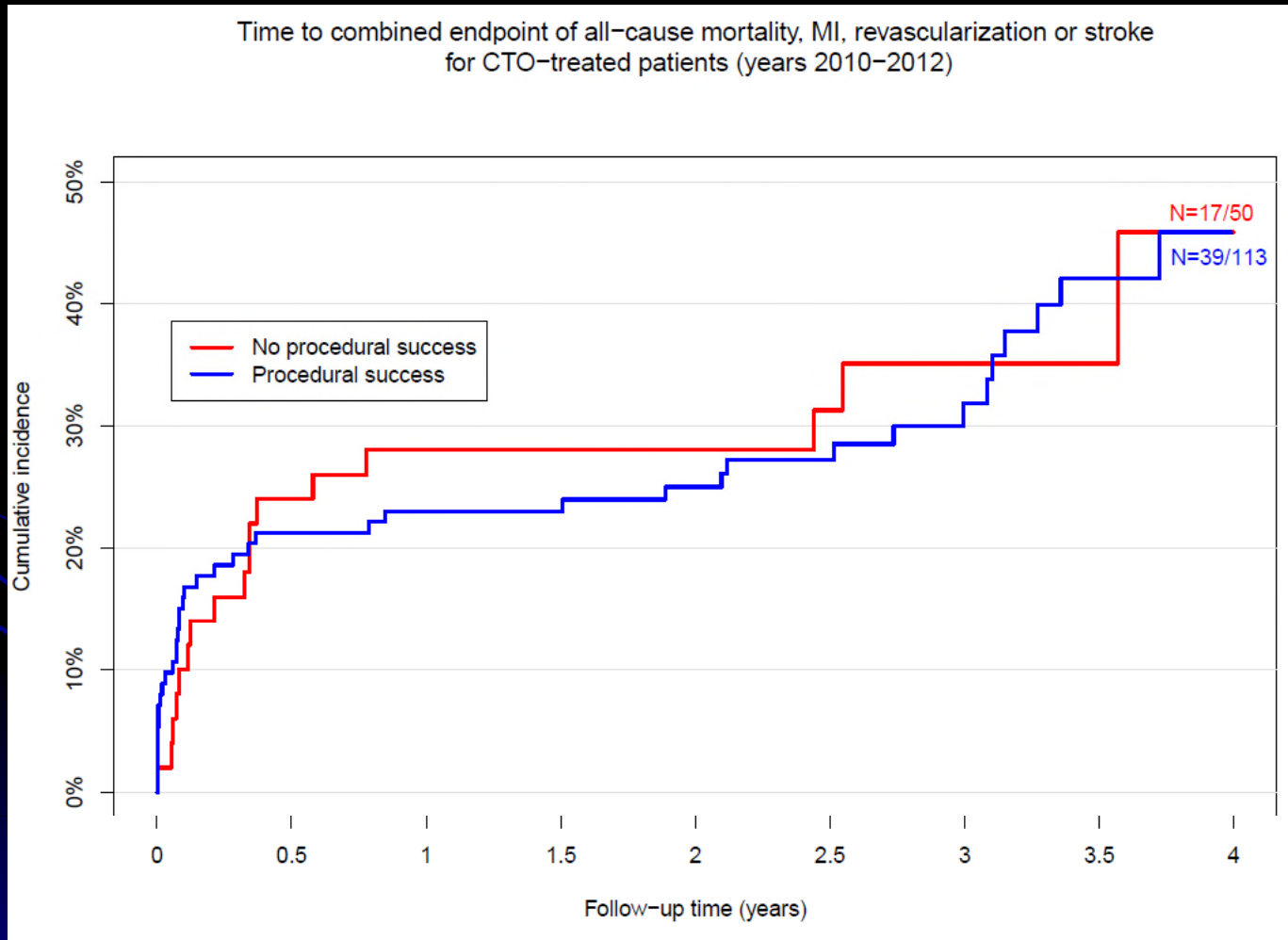
at 3 months reduced to

21.9 %

Overall complications 3.2 %

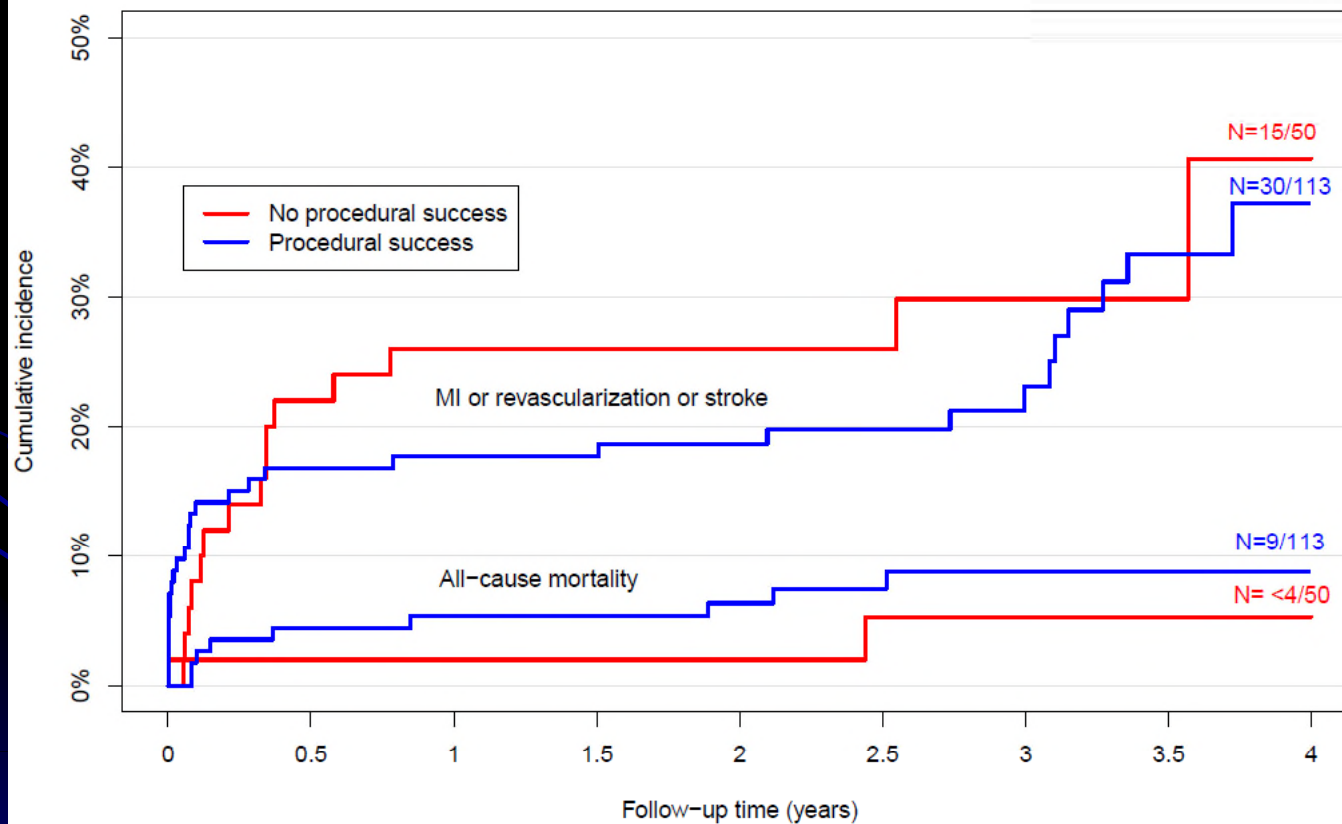
2 death, 1 stroke, 1 urgent CABG, 7 tamponade, 2 radiation dermatitis, 4 impaired renal function at follow up.

Follow-up. Prognosis



Follow-up. Prognosis

Time to events for CTO-treated patients (years 2010–2012)



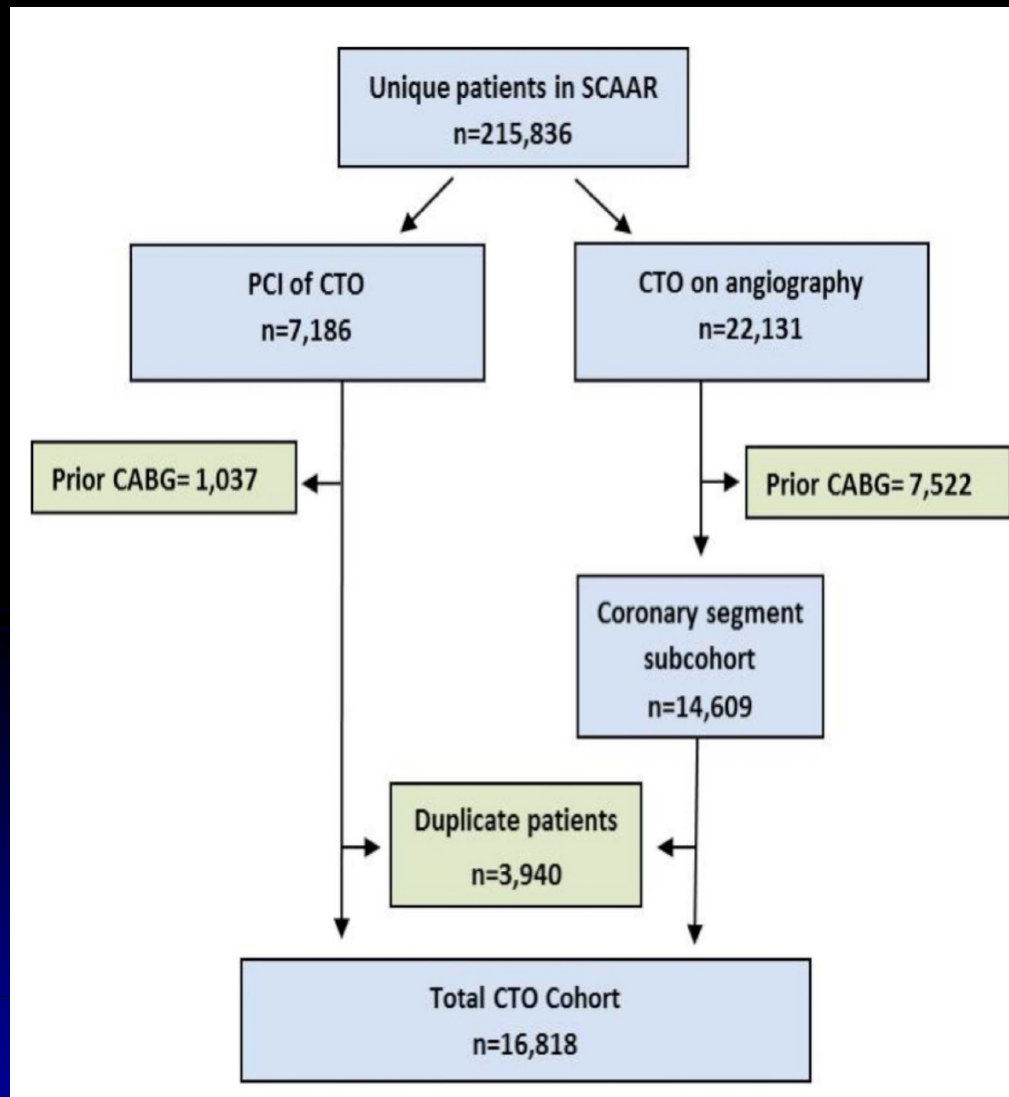
Conclusions

- Significantly less angina is seen on successful treated CTO.
- The prognosis of successful treated CTO is significantly better in other registry studies, however, we found no significant difference.
- In CTO-failure the patients should be considered for CABG for full revascularization.
- Procedural complications is markedly higher in CTO treatments compared to non-CTO PCI procedures.

Future projects

- Registry: From monocenter to all Western Denmark Heart Registry contributors – CTO (inhabitants from 650.000 to 3.000.000).
- *Randomized Nordic-Baltic trial CTO*
 - *CTO medically treated*
 - *PCI-CTO*
 - *(CABG-CTO)*

Sparse literature



**2005-2012
SCAAR Registry**

**CTO ptt 16.818
CTO presence 16 %**

**Medical treatment 56 %
CABG 21.7 %
PCI 22.3 %**

**PCI-CTO of all PCI
procedures was 5.8%**

Procedural success 56 %

In-lab complication 5.4 %

No F-U results is given.

Sparse literature on the prognosis of CTO-treatment

