

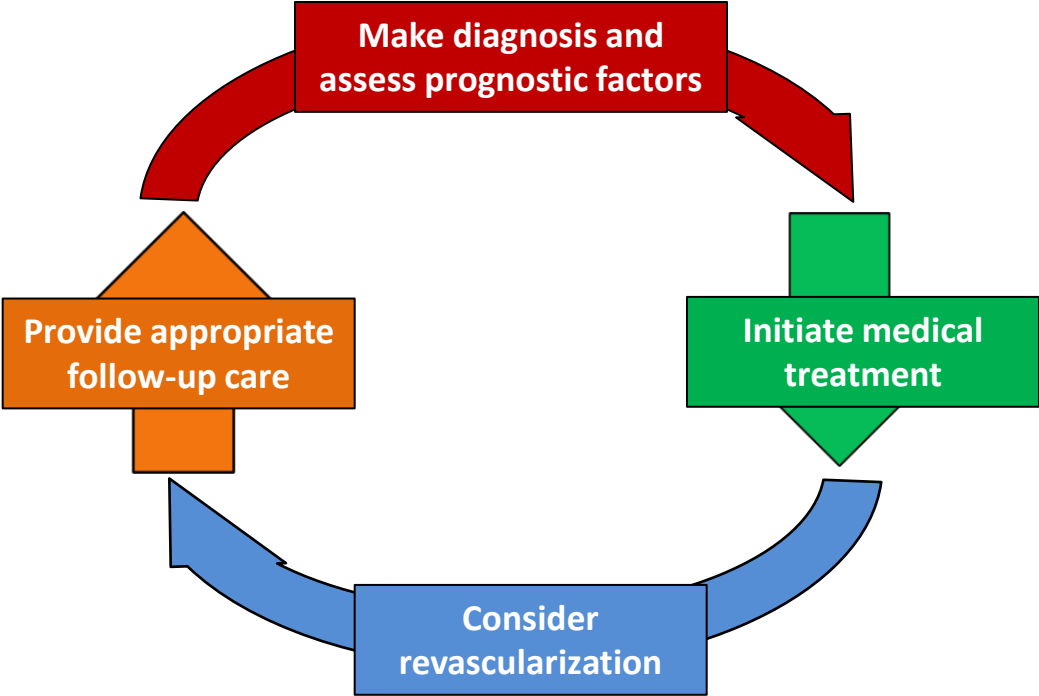
# **Angina Pectoris Management im 2019**

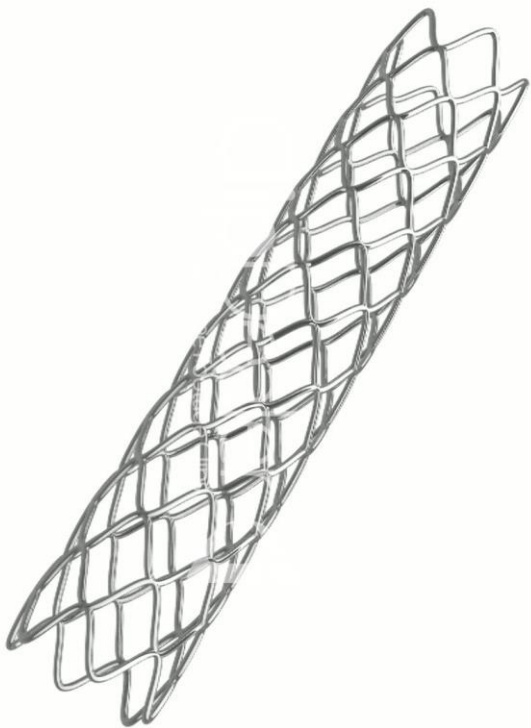
PD Dr. med. Florim Cuculi  
Co-Chefarzt Kardiologie  
Leiter Interventionelle Kardiologie und  
Akutkardiologie  
Herzzentrum, Luzerner Kantonsspital

# Inhalt

- **Welche Patienten brauchen Stents?**
- **Konservatives Management der koronaren Herzkrankheit**
- **Die Patientin mit Angina pectoris ohne Koronarstenosen**
- **Wenn alle Stricke reißen**

# Diagnosis and management of patients with stable ischemic heart disease



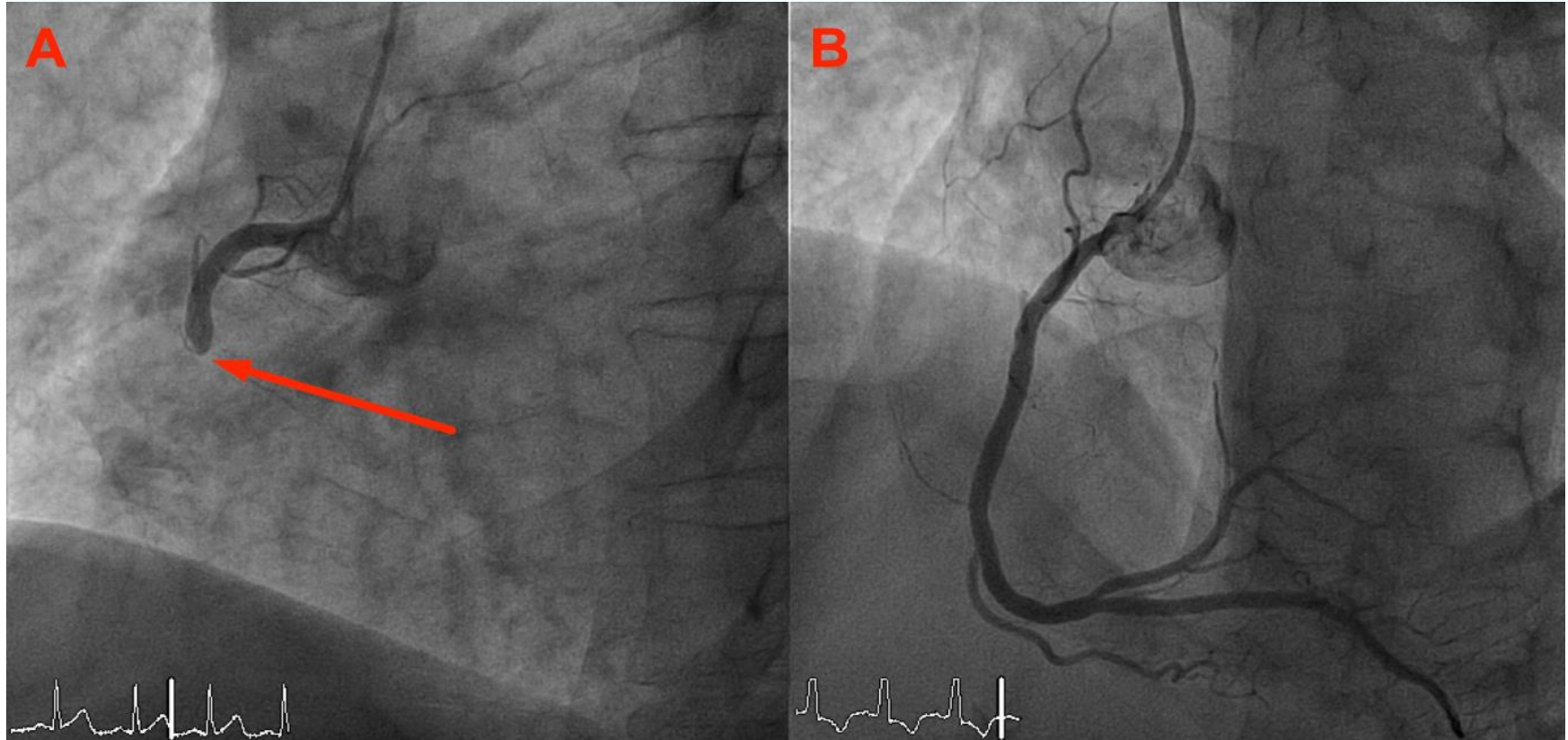


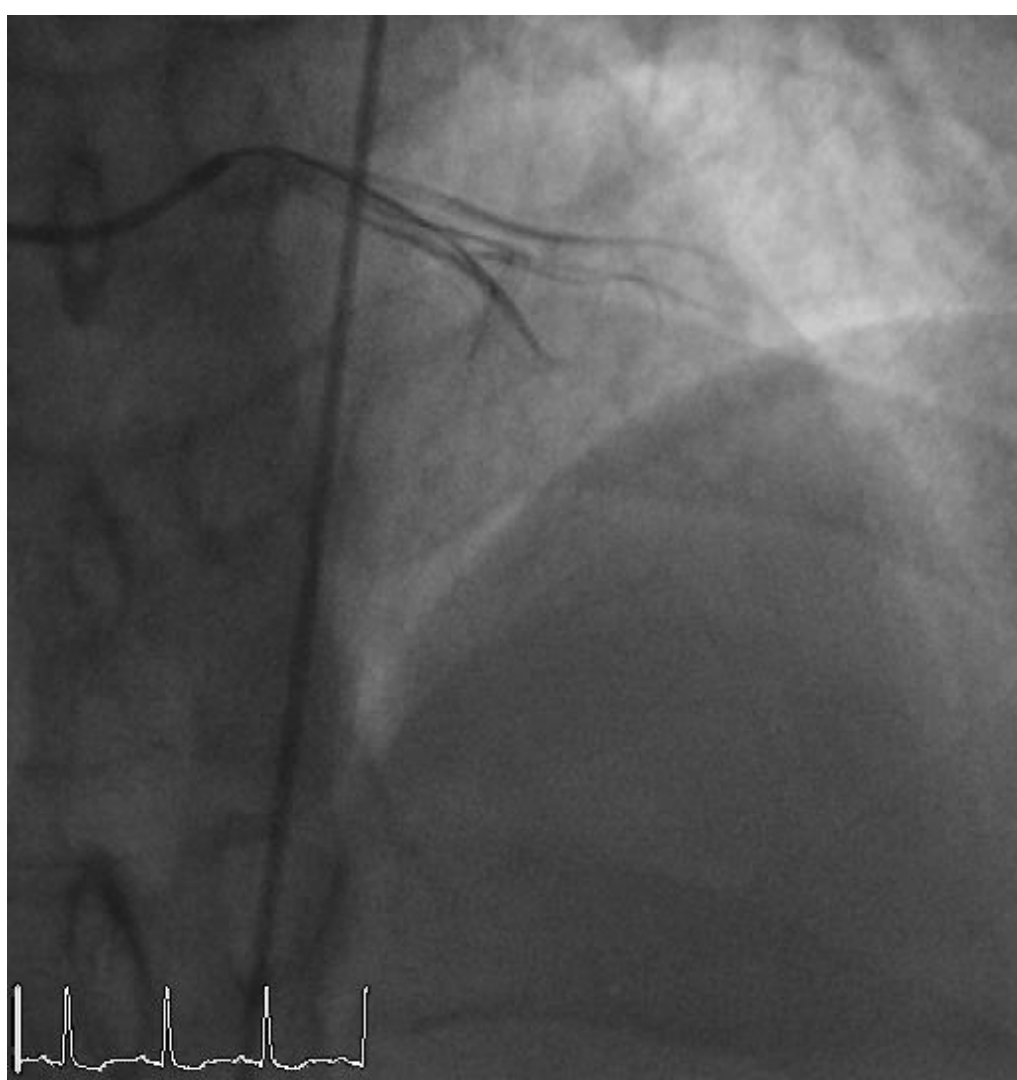
**VS.**



**Welche Patienten brauchen Stents  
(oder Bypässe)?**

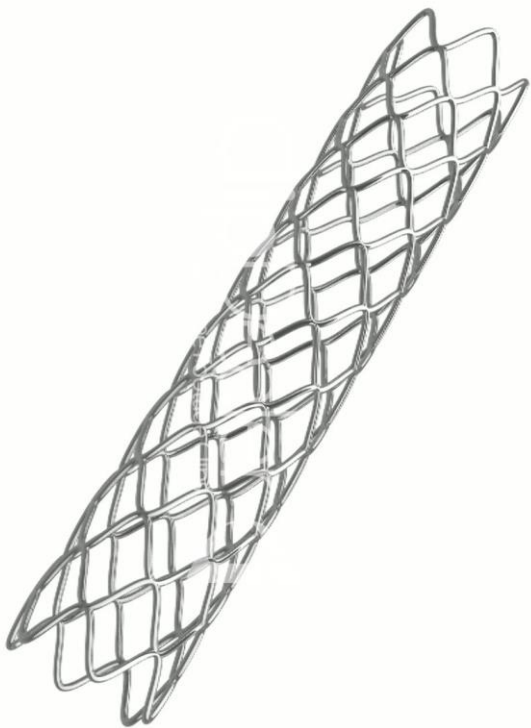
# Patienten mit einem akuten Myokardinfarkt profitieren eindeutig von einer invasiven Therapie





## Stent oder Pillen?

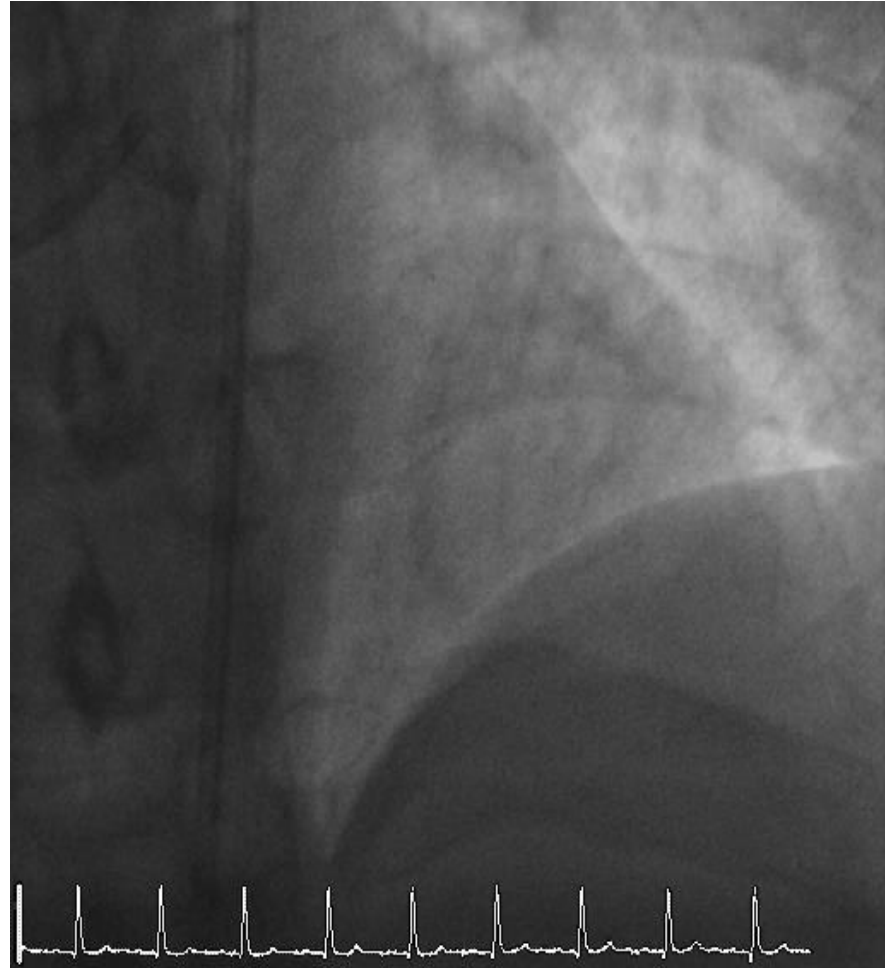
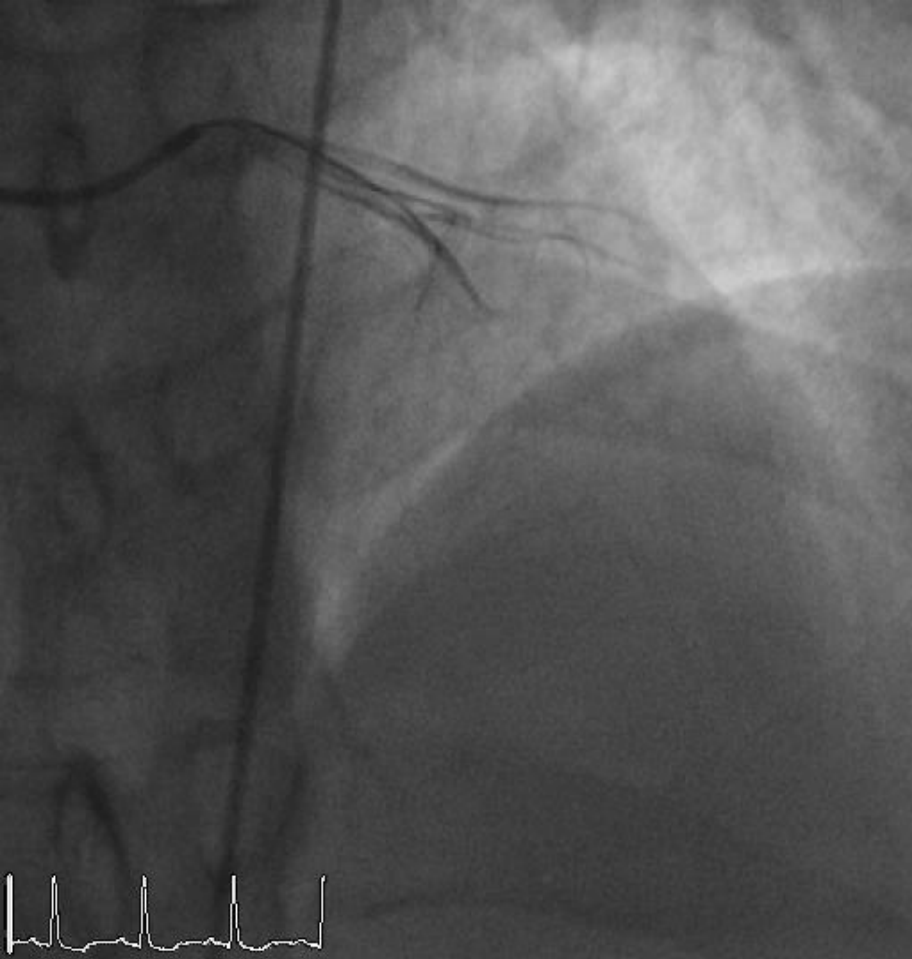
- **37 jähriger Mann**
- **Typische Angina pectoris CCS III**
- **Pathologische Ergometrie**
  - **Klinisch & elektrisch**



**VS.**

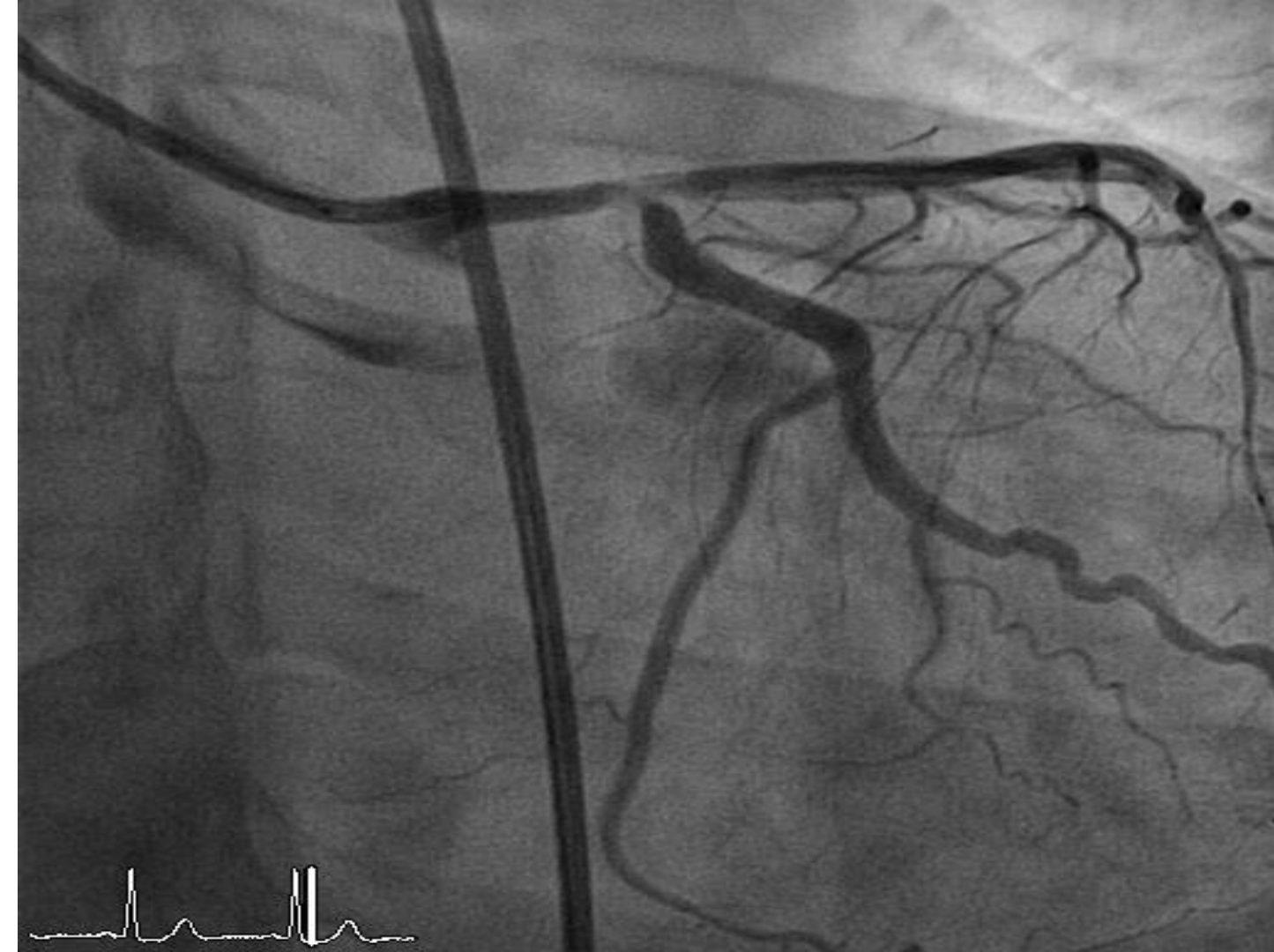




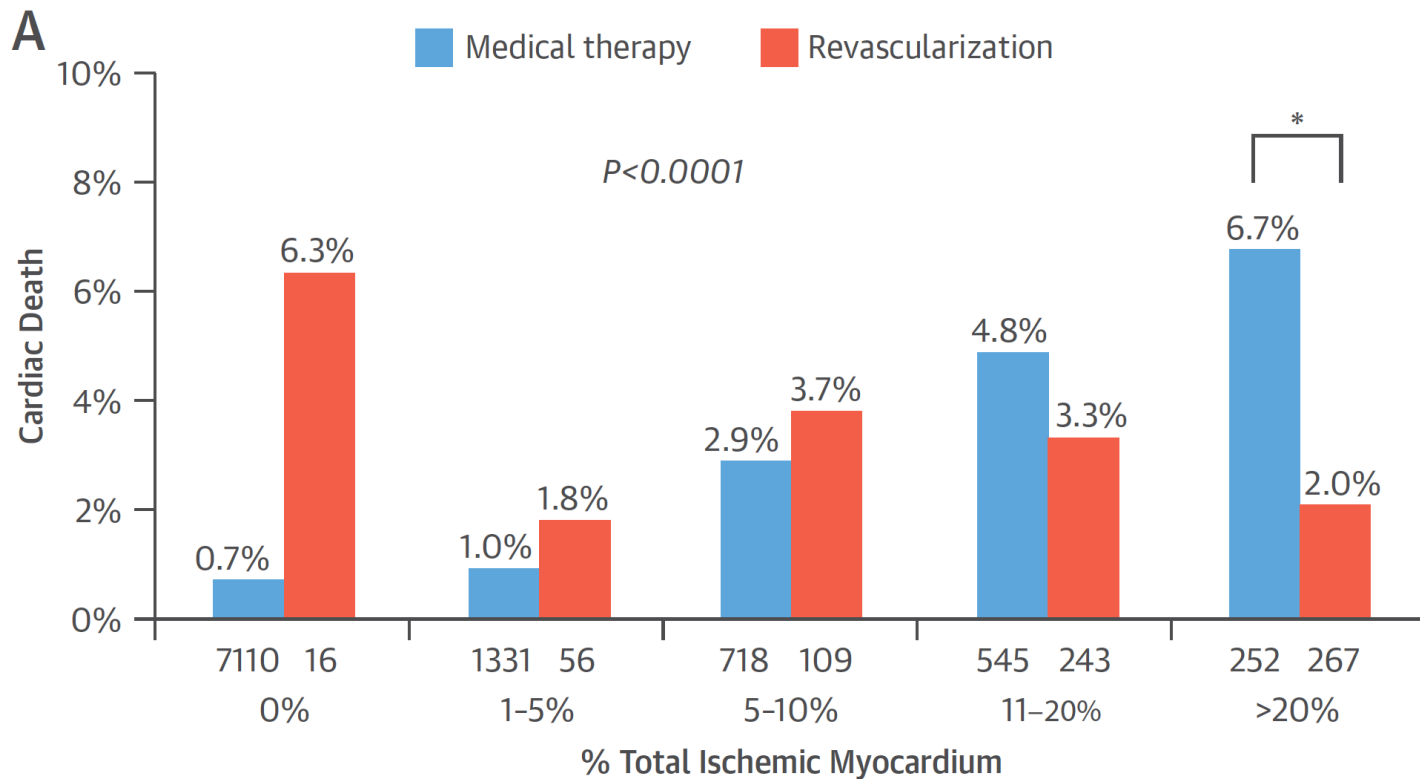


# Hauptstamm-Stenose

- 66 jährige Frau mit typischer Angina pectoris CCS II
- Pathologische Ergometrie
- Zugewiesen für eine Koronarangiographie

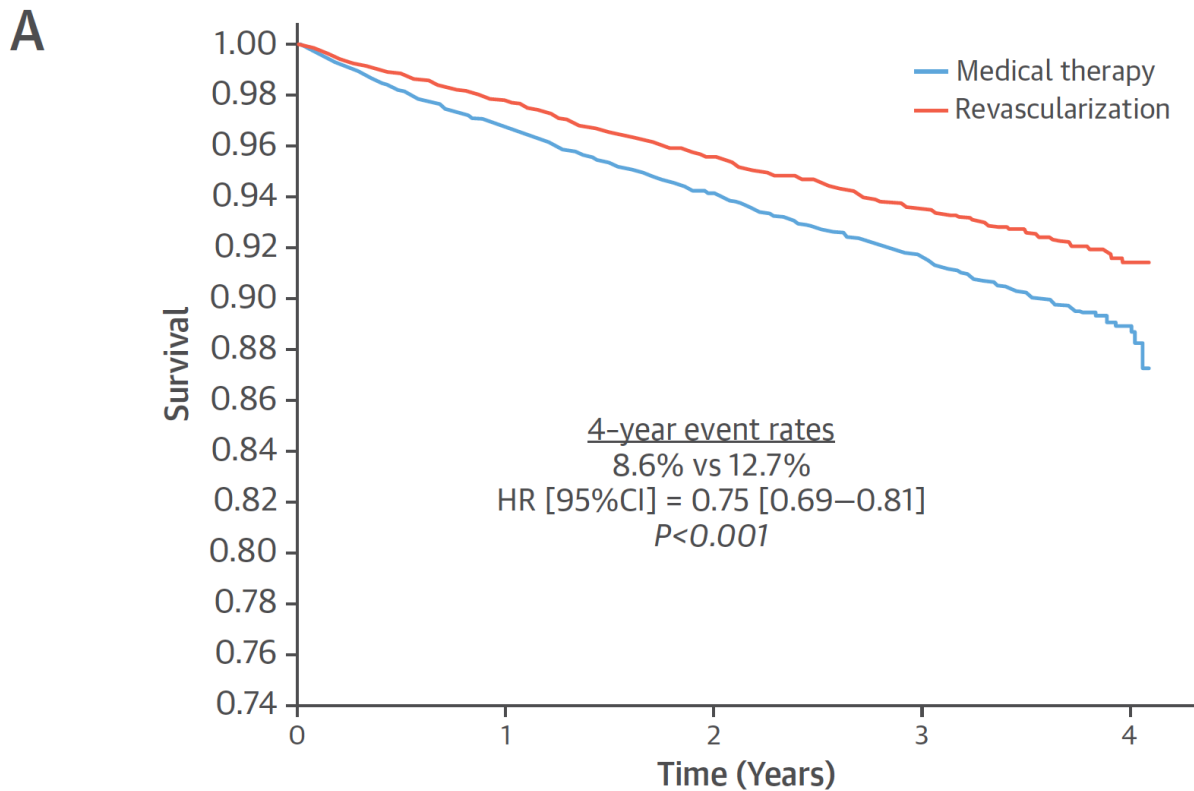


**FIGURE 2** Cardiac Mortality as a Function of Total Ischemic Myocardium at a Mean Follow-Up Time of  $1.9 \pm 0.6$  Years



Cardiac mortality as a function of total ischemic myocardium is shown at a mean follow-up time of  $1.9 \pm 0.6$  years in 10,627 patients at Cedars-Sinai Medical Center without previous myocardial infarction or revascularization who underwent exercise or adenosine thallium 201 single-photon emission computed tomography myocardial perfusion scintigraphy. Outcomes are shown according to whether elective revascularization was versus was not performed within 60 days. Patients with a greater percentage of ischemic myocardium had a greater survival benefit with revascularization. **(A)** Unadjusted analysis. **(B)** Log hazard ratio of cardiac mortality for revascularization versus medical

**FIGURE 1** Propensity-Matched Analysis in 39,131 Canadian Patients With SIHD Undergoing Early Revascularization (n = 23,992) or Treated Conservatively (n = 15,139)



Number at risk:

Revascularization	12362	12082	8433	4301	340
Medical therapy	12362	11961	7987	4092	316

**TABLE 2** Current Guideline Indications for Revascularization in SIHD

	To Improve Survival		To Improve Symptoms	
	Class of Recommendation	Level of Evidence	Class of Recommendation	Level of Evidence
2013/2014 ESC/EACTS guidelines (12,13)				
Left main disease	I	A	I	A
Proximal LAD disease	I	A	I	A
Multivessel disease with LVEF <40%	I	B	IIa	B
Large area of ischemia (>10% LV)	I	B	I	B
Single remaining vessel	I	C	I	A
Limiting symptoms or symptoms not responsive/intolerant to GDMT	—	—	I	A
Heart failure with >10% ischemia/viability	IIb	B	IIa	B
No limiting symptoms with GDMT and with none of the above or with FFR $\geq$ 0.80	III	A	III	C

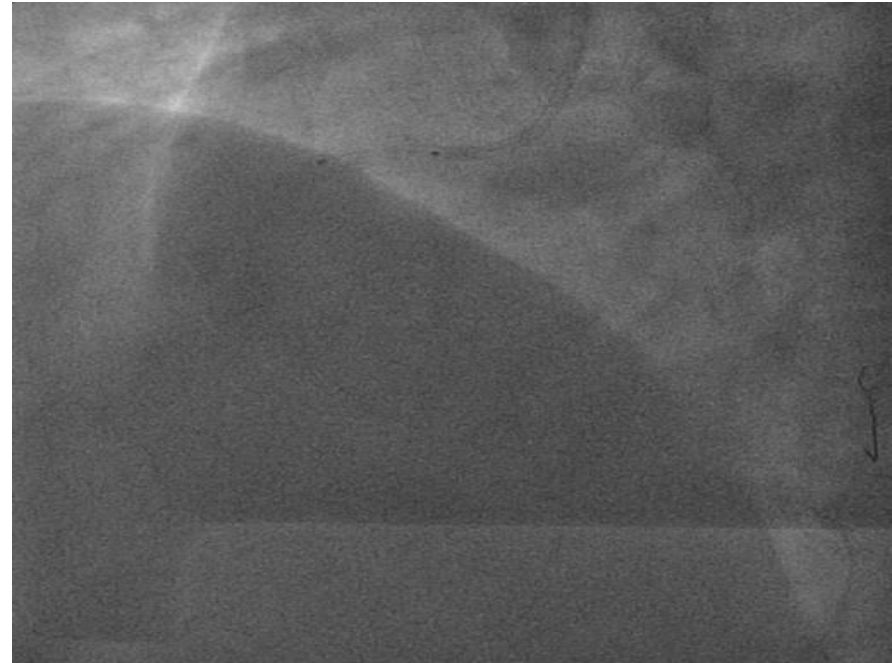
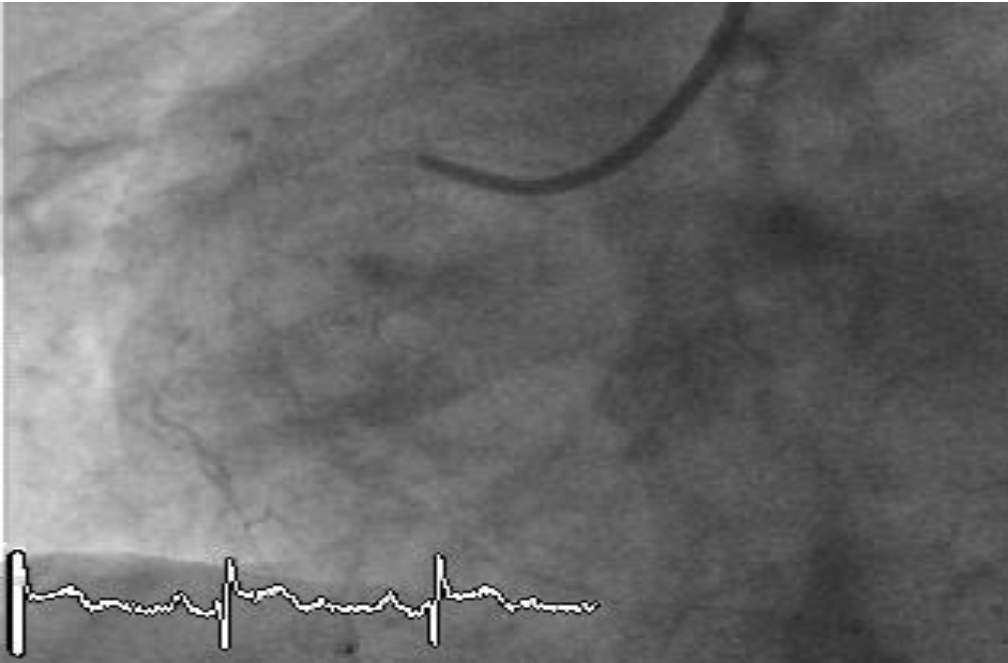
- Die Patientin wurde aus prognostischen Gründen chirurgisch revaskularisiert
- Wahrscheinlich wäre eine Kontrolle der Symptome mit medikamentöser Therapie schwierig gewesen.

## Subtotale Stenosen in grossen Gefässen

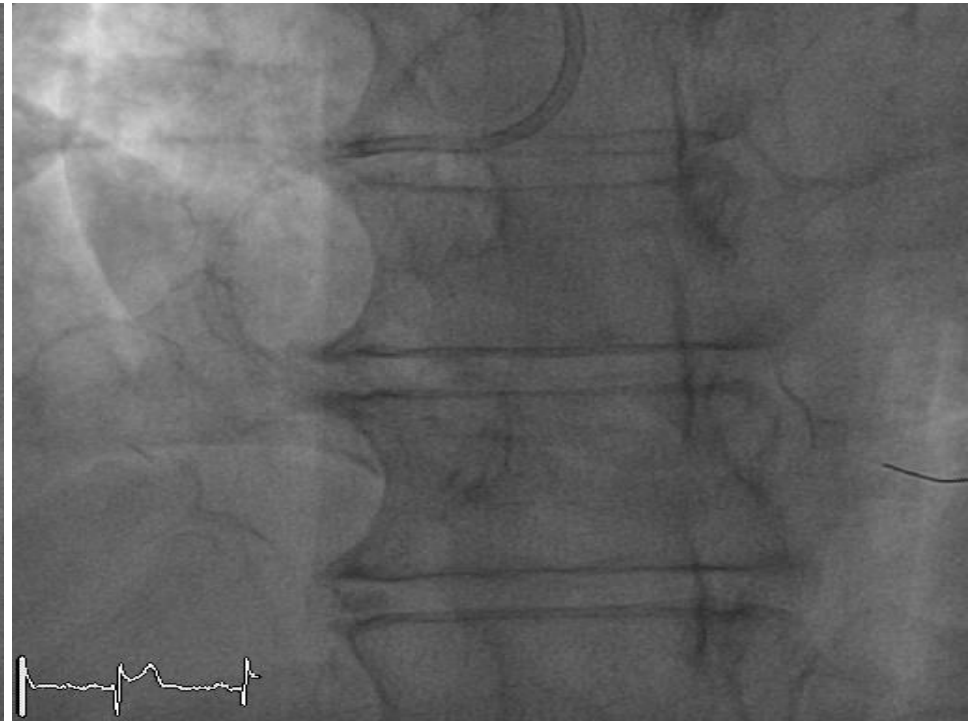
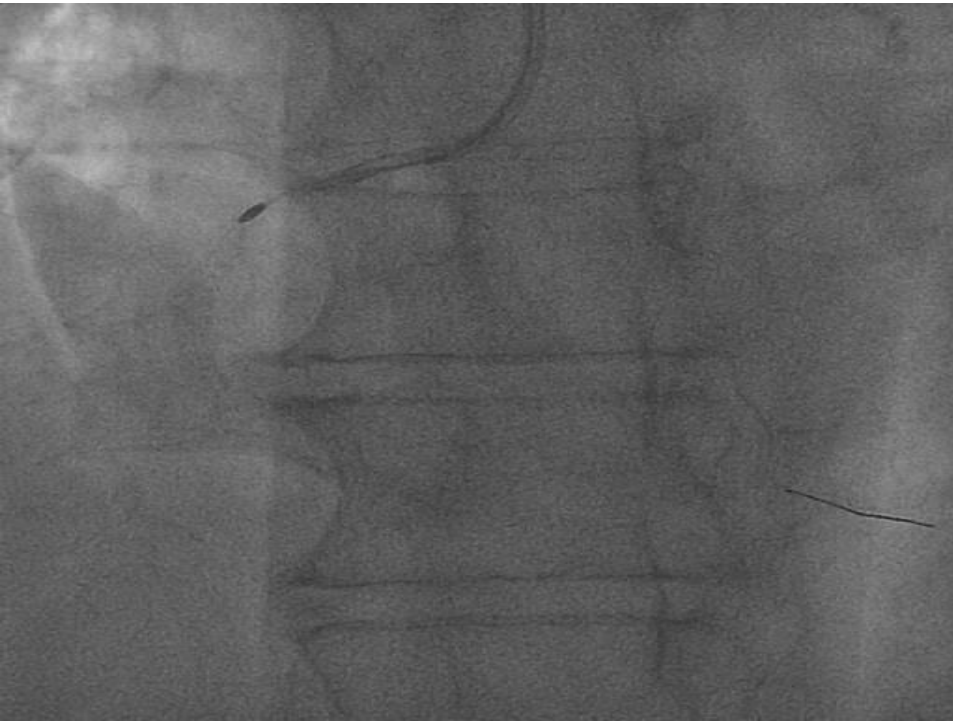
- 60 jähriger Mann mit Angina pectoris CCS II
- CCS 3 → CCS 2 mit Nebilet 5 mg 1-0-0 und Nitroderm TTS 10 tagsüber
- Ist sehr sportlich, Müdigkeit seit Beta-Blocker-Therapie, Ruhepuls neu 50/min.
- Perkutane Behandlung mit Stents

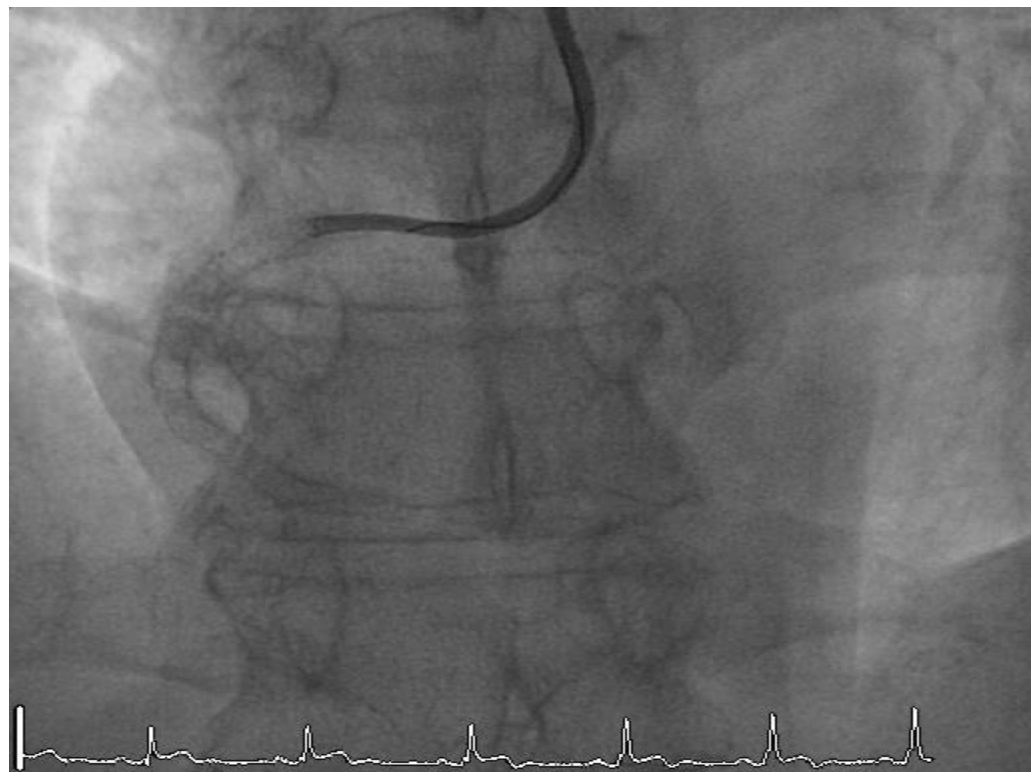


# PCI to RCA



# Rotablation





# Koronarangiographie nach 18 Monaten (atypische Symptome)



## Welche Patienten brauchen Stents (oder Bypässe)?

- Patienten mit einem akuten Myokardinfarkt
- Patienten mit grosser Ischämie (Bsp. Hauptstamm und proximaler RIVA)
- Patienten, die trotz medikamentöser Therapie Beschwerden im Alltag haben (Bsp. Patienten mit chronischem Verschluss (CTO))

# PCI-Therapie im 2019

- Interventionelle Therapie im 2019
  - PCI ist sicher
    - Sehr tiefes Risiko für eine schwere periprozedurale Komplikation < 1 %
    - Stent-Thrombose Risiko < 1 %

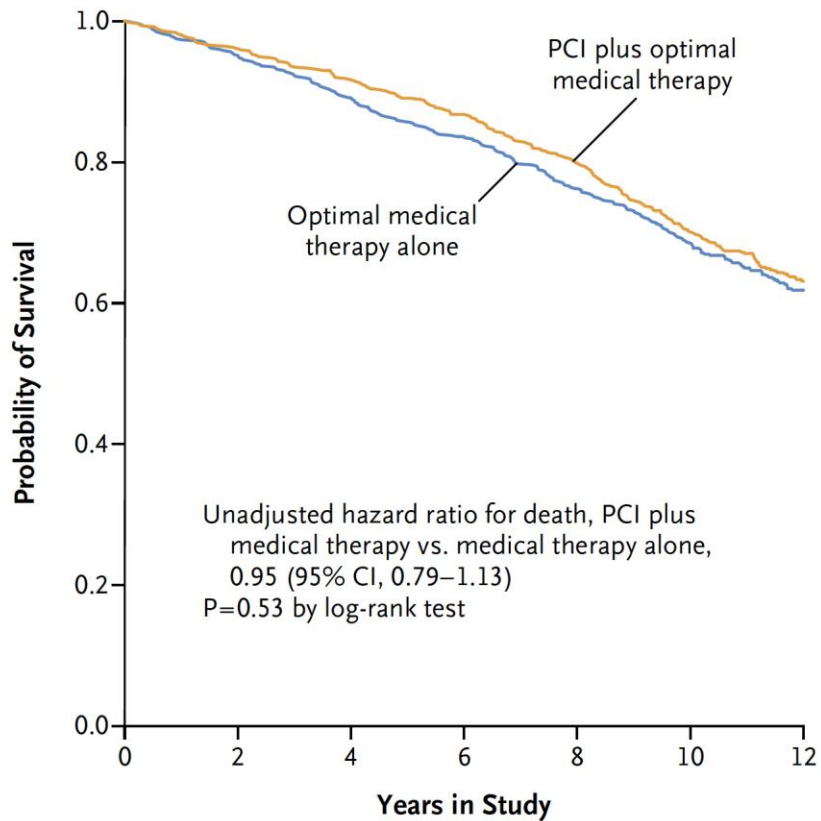
# PCI @ LUKS

- Interventionelle Therapie am LUKS
  - Über Sinn und Unsinn einer PCI wird laufend diskutiert
  - Interdisziplinäre Zusammenarbeit wichtig
  - Was ist die beste Revaskularisationstherapie für den Patienten & die Koronararterie
    - **Hybrid-Approach**

# **Konservatives Management der koronaren Herzkrankheit**



## B Extended Follow-up Study Cohort





### No. at Risk

Optimal medical therapy	598	569	533	500	455	403	280
PCI plus optimal medical therapy	613	589	561	529	486	416	302

# Medikamentöse Therapie der Angina pectoris I

**Table 1.** Optimal medical therapy as defined in the COURAGE trial.

- |   |  |
|---|--|
| 1. Aspirin 81 mg/325 mg   | 6. ACE inhibitor/angiotensin receptor blocker                                |
| 2. Plavix 75 mg if unable to use aspirin  | 7. Aggressive LDL-C reduction to 65–80 mg/dL<br>alone or combination therapy |
| 3. Long-acting beta-blocker                            | 8. HDL-C target to > 40 mg/dL  |
| 4. Calcium channel blocker <br>(dihydropyridine class) | 9. TG target level to < 150 mg/dL  |
| 5. Nitrates   | } With exercise, niacin,<br>fibrates or combination                          |

ACE — angiotensin converting enzyme; HDL-C — high density lipoprotein cholesterol; LDL-C — low density lipoprotein cholesterol; TG — triglyceride

# Medikamentöse Therapie der Angina pectoris II

**Table 2.** Pharmacological options for treating refractory angina.

Drug	Mechanism of action	Site of action	Side effect	Caution
Ranolazine <sup>a</sup> (Ranexa)	Partial fatty oxidation inhibitor	Alters Na levels, which through the Na dependent Ca channels prevents Ca overload	Constipation, nausea, dizziness, palpitation, peripheral edema, QT prolongation	Other QT prolonging drugs, hepatic dysfunction
Ivabradine <sup>b</sup> (Procorolan)	Decreases the oxygen demand by lowering the heart rate at rest and during exercise	Specific inhibitor of I(f) sinoatrial node current	Visual disturbance (luminous visual phenomenon), bradycardia, headache	Age > 75 years, moderately reduced liver function Cr Cl < 15%
Nicorandil <sup>b</sup> (Ikorel)	Arterial vasodilator, venodilator, cardioprotective effect	K channel activator	Headache, dizziness, flushing	Hypotension, with PDE inhibitors
Allopurinol	Xanthine oxidase inhibitor	Xanthine oxidase enzyme	Nausea, diarrhea, hypersensitivity reactions, rash	Renal impairment

# **Mein praktischer, konservativer Approach...**

- **Beta-Blocker (Bsp. Bisoprolol 2.5 – 5 mg)**
- **Calcium-Antagonist (Bsp. Amlodipin 5 mg)**
- **Nitrat-Pflaster**
- **Ranexa**
- **PCI vs. Coronary Sinus Reducer**

# **Angina pectoris ohne Koronarstenose**

# Coronary Microvascular Disease

- Syndrom X, Small vessel disease
- Klassisch: post-menopausale Patientinnen
- Ähnliche cvRF wie KHK
- Symptome: ähnlich wie obstruktive KHK
- Behandlung: medikamentös
  - Isoptin & Ranexa

# A „full metal jacket“ lady with angina ...



200 ug nitroglycerin i.c.

500 ug nitroglycerin i.c.

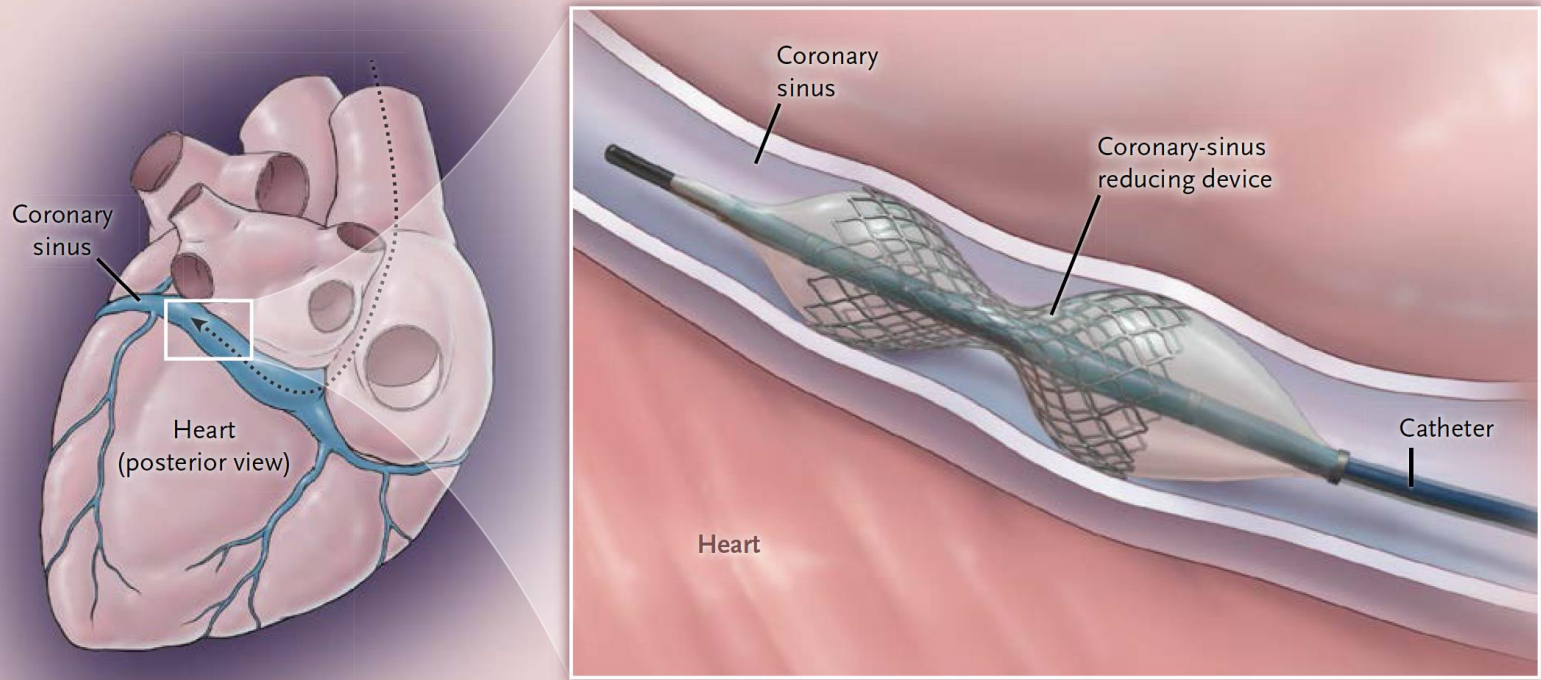
**Wenn alle Stricke reißen ...**



ORIGINAL ARTICLE

# Efficacy of a Device to Narrow the Coronary Sinus in Refractory Angina

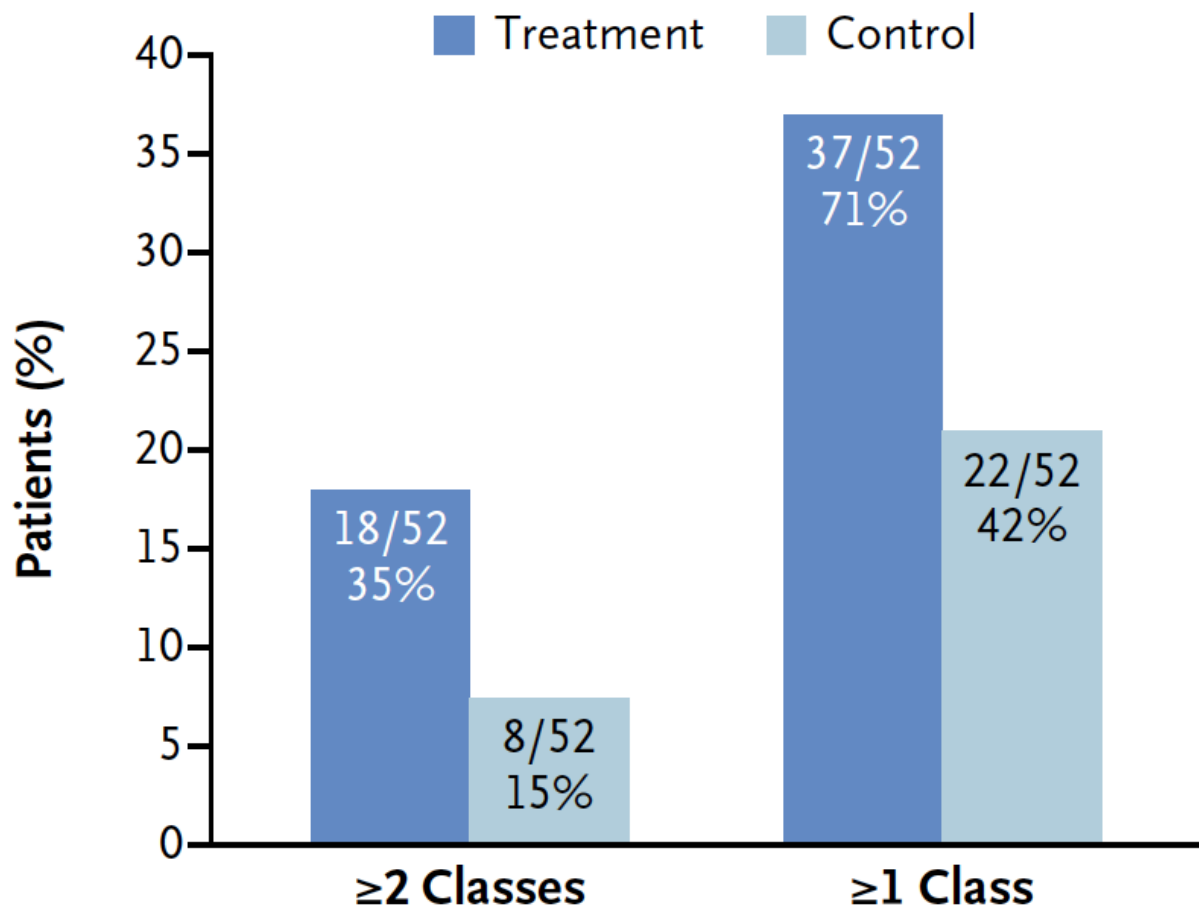
Stefan Verheye, M.D., Ph.D., E. Marc Jolicœur, M.D., Miles W. Behan, M.D.,  
Thomas Pettersson, M.D., Paul Sainsbury, M.D., Jonathan Hill, M.D.,  
Mathias Vrolix, M.D., Pierfrancesco Agostoni, M.D., Thomas Engstrom, M.D.,  
Marino Labinaz, M.D., Ranil de Silva, M.D., Marc Schwartz, R.C.I.S.,  
Nathalie Meyten, M.D., Neal G. Uren, M.D., Serge Doucet, M.D.,  
Jean-François Tanguay, M.D., Steven Lindsay, M.D., Timothy D. Henry, M.D.,  
Christopher J. White, M.D., Elazer R. Edelman, M.D., Ph.D., and Shmuel Banai, M.D.

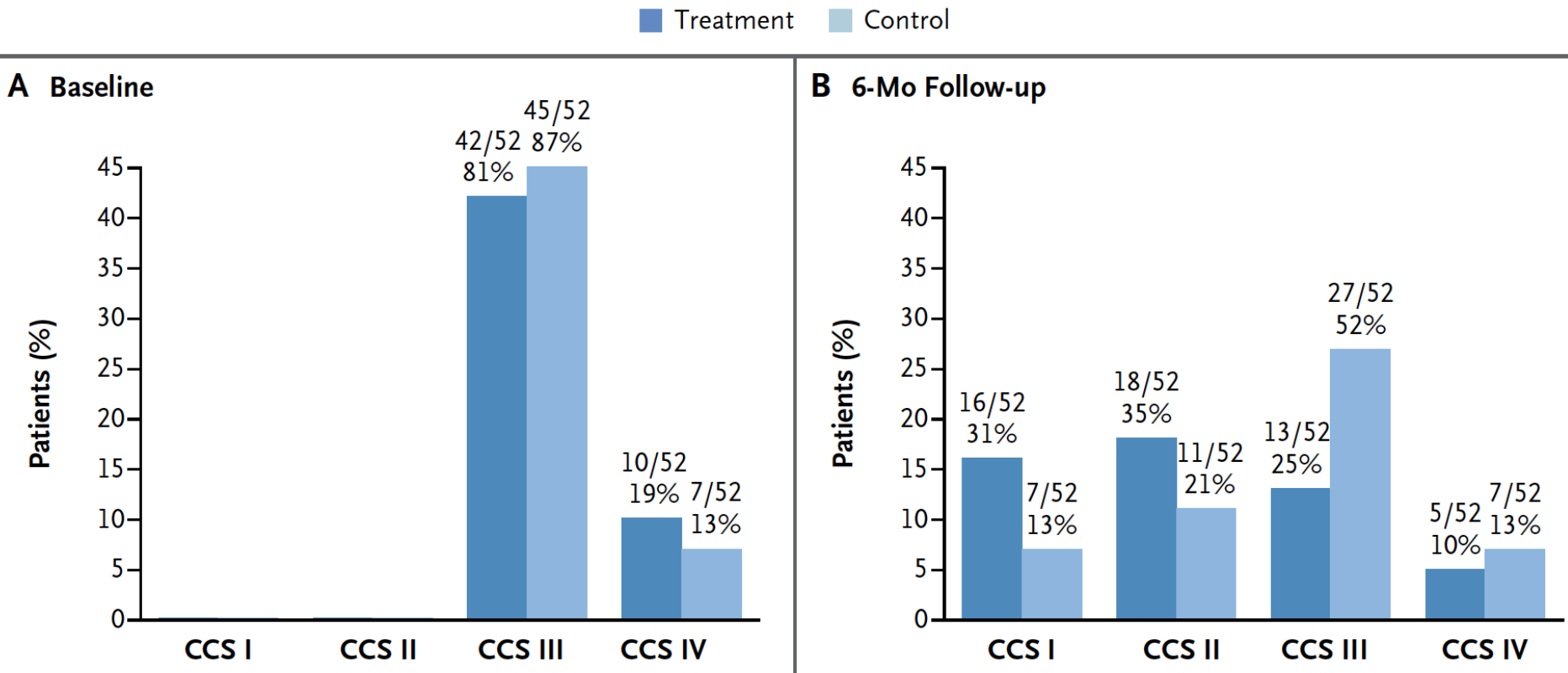


**Figure 1. Coronary Sinus Reducer System.**

The complete system for the coronary-sinus reducing device we evaluated comprises a metal mesh device that is premounted on a balloon catheter and is shaped like an hourglass when expanded. After the device is implanted in the coronary sinus, local flow disruption and vascular reaction lead to a hyperplastic response in the vessel wall, with occlusion of the fenestrations in the metal mesh. The central orifice of the device remains patent and becomes the sole path for blood flow through the coronary sinus, leading to the development of an upstream pressure gradient that results in the redistribution of blood from the less ischemic epicardium to the ischemic endocardium.

## A Improvement in CCS Class





**Figure 3. CCS Angina Class at Baseline and 6 Months after Randomization, According to Study Group.**

At baseline, no patient in either study group had a CCS angina class of I or II, according to the inclusion criteria for the trial.

# Coronary Sinus Reducer @ LUKS

- 4 Patienten
  - 3 mit schwerer KHK (nicht bzw. kaum revaskularisierbar)
  - 1 mit Syndrom X
  - Alle Implantationen erfolgreiche
  - Alle Patienten beschwerdefrei

# Take Home Messages

- Medikamentöse Therapie kann bei Patienten mit stabiler KHK funktionieren (Beta-Blocker & Calcium-Antagonisten).
- Patienten können Angina haben ohne erkrankte Koronararterien (→ Syndrom X).
- Coronary Sinus Reducer eine gute Option, wenn alle Stricke gerissen sind ...