

**FRACTIONAL FLOW RESERVE
versus ANGIOGRAPHY
FOR GUIDING PCI IN PATIENTS WITH
MULTIVESSEL CORONARY ARTERY DISEASE**

**Fractional Flow Reserve *versus* Angiography for
Multivessel Evaluation**



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FLOW CHART

Patient with stenoses \geq 50% in at least 2 of the 3 major epicardial vessels

Indicate all stenoses \geq 50% considered for stenting

Randomization

Angiography-guided PCI

FFR-guided PCI

Stent all indicated stenoses

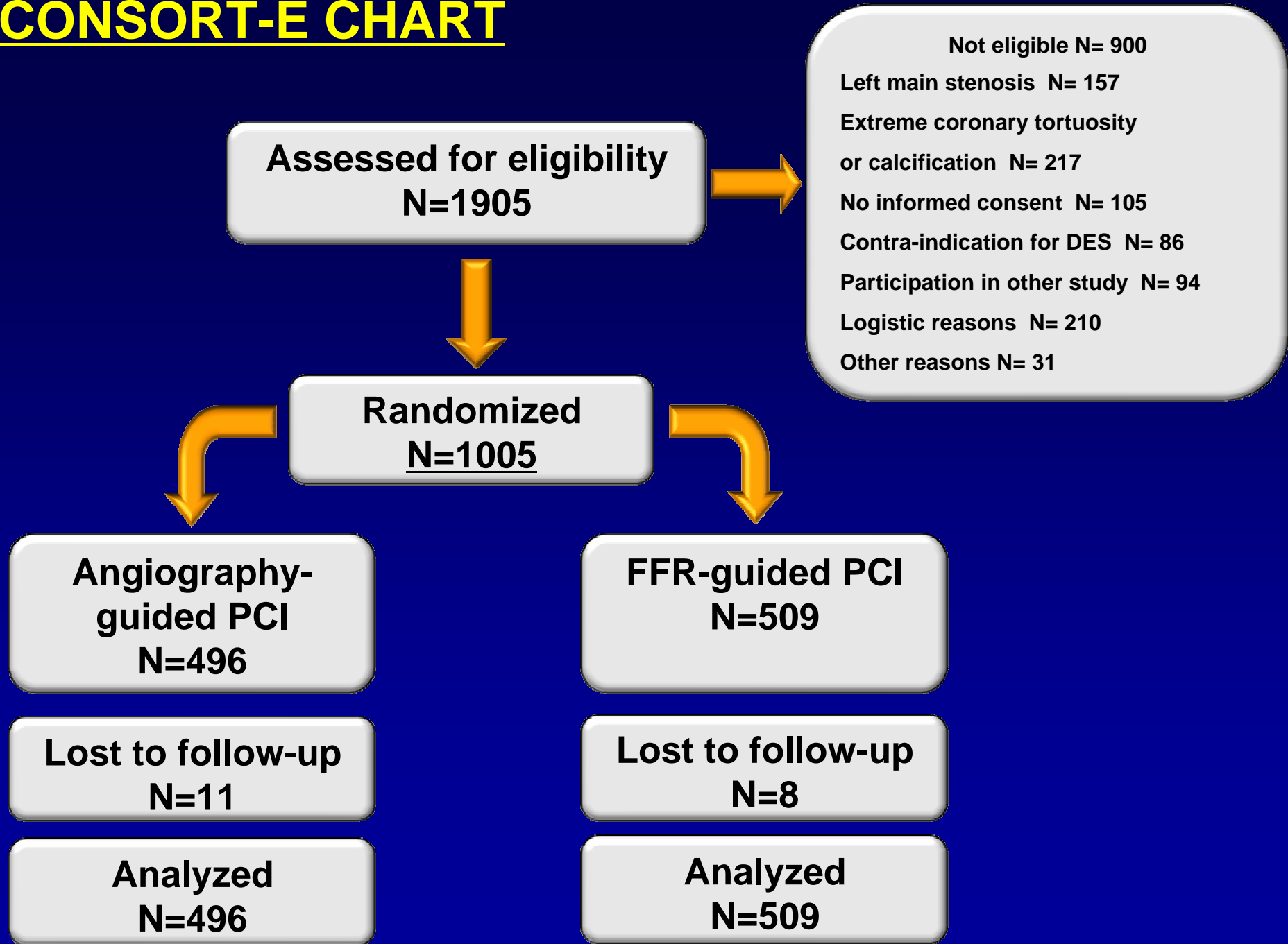
Measure FFR in **all** indicated stenoses

Stent **only** those stenoses with **FFR \leq**

0.80

1-year follow-up

CONSORT-E CHART



Treatment

- PCI according to local routine
- Only drug-eluting stents (DES)
- FFR measured by Pressure Wire
(*Certus wire, RADI Medical Systems*)
- hyperemia induced by **i.v. adenosine 140 µg/kg/min in femoral vein**
- Follow-up at 1 month, 6 months, 1 year
- ***Also in case of repeat-procedure , strictly adherence to initial randomization***

Adverse Events at 1 year

	ANGIO-group N=496	FFR-group N=509	P-value
<i>Events at 1 year, No (%)</i>			
Death, MI, CABG, or repeat-PCI	91 (18.4)	67 (13.2)	0.02
Death	15 (3.0)	9 (1.8)	0.19
Death or myocardial infarction	55 (11.1)	37 (7.3)	0.04
CABG or repeat PCI	47 (9.5)	33 (6.5)	0.08
Total no. of MACE	113	76	0.02
<i>Myocardial infarction, specified</i>			
All myocardial infarctions	43 (8.7)	29 (5.7)	0.07
Small periprocedural CK-MB 3-5 x N	16	12	
Other infarctions (“late or large”)	27	17	

CONCLUSIONS (1)

Routine measurement of FFR during PCI with DES in patients with multivessel disease, when compared to current angiography guided strategy

- reduces the rate of the composite endpoint of death, MI, re-PCI and CABG at 1 year by ~ 30%
- reduces mortality and MI at 1 year by ~ 35 %
- is cost-saving and does not prolong the procedure
- reduces the number of stents used
- decreases the amount of contrast agent used
- results in a similar, if not better, functional status

CONCLUSIONS (2)

Routine measurement of FFR during DES-stenting in patients with multivessel disease is superior to current angiography guided treatment.

It improves outcome of PCI significantly

It supports the evolving paradigm of

**“Functionally Complete Revascularization”,
i.e. stenting of ischemic lesions and
medical treatment of non-ischemic ones.**