AN INTERVENTIONAL CARDIOLOGIST`S PERSPECTIVE ON ENDOVASCULAR THERAPY FOR AAA

GUERING EID-LIDT, MD.,FSCAI.
DEPARTMENT OF INTERVENTIONAL CARDIOLOGY
INSTITUTO NACIONAL DE CARDIOLOGIA "IGNACIO CHÁVEZ"
Mexico City, MEXICO

Endovascular therapy for AAA

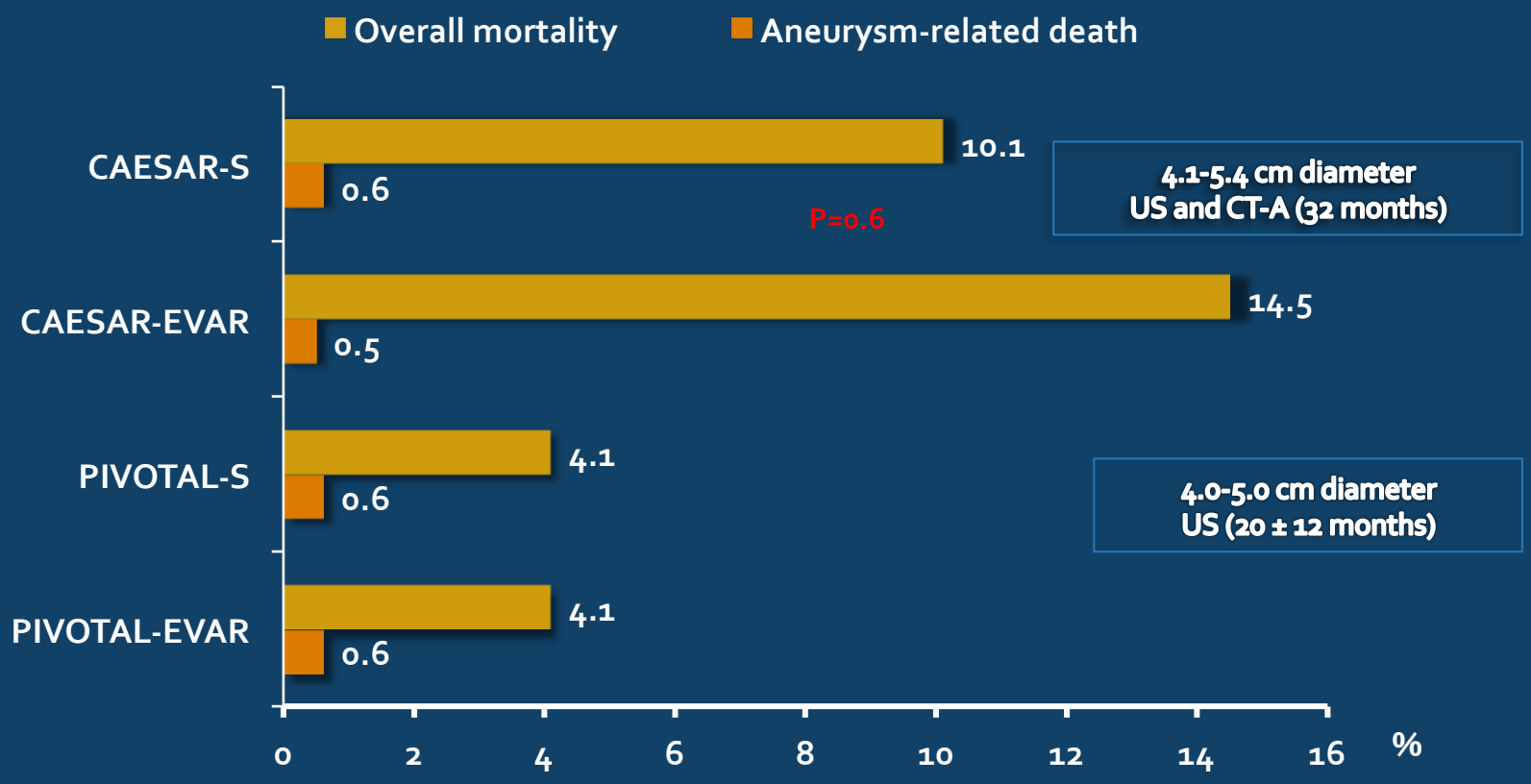
Primary points of analysis: mortality and re-interventions rate.

	RCT	Meta-analysis	Observational studies
Small AAA	PIVOTAL CAESAR		
Low-intermediate surgical risk	EVAR-1 DREAM ACE OVER		
High surgical risk (Unfit for open repair)	EVAR-2		
High surgical risk (Ruptured AAA)	Pilot Study		

RCT: Randomized controlled trials.

EVAR for small aneurysm

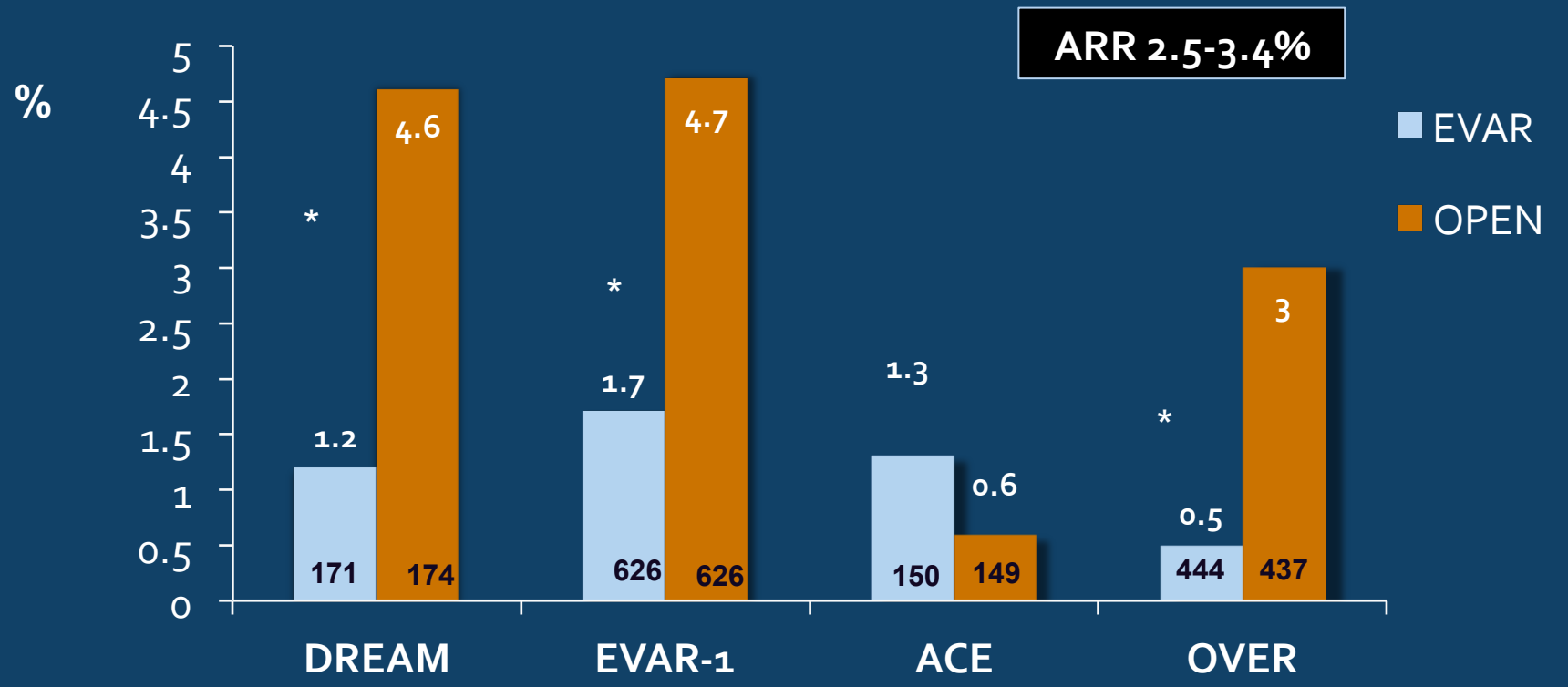
Early or delayed EVAR



PIVOTAL Investigators. J Vasc Surg 2010;51:1081-1087. CAESAR trial. Eur J Vasc Endovasc Surg 2011;41:13-25.

Endovascular aneurysm repair versus open repair-abdominal aortic aneurysm

30-day mortality-randomized controlled trials (Low and intermediate surgical risk)



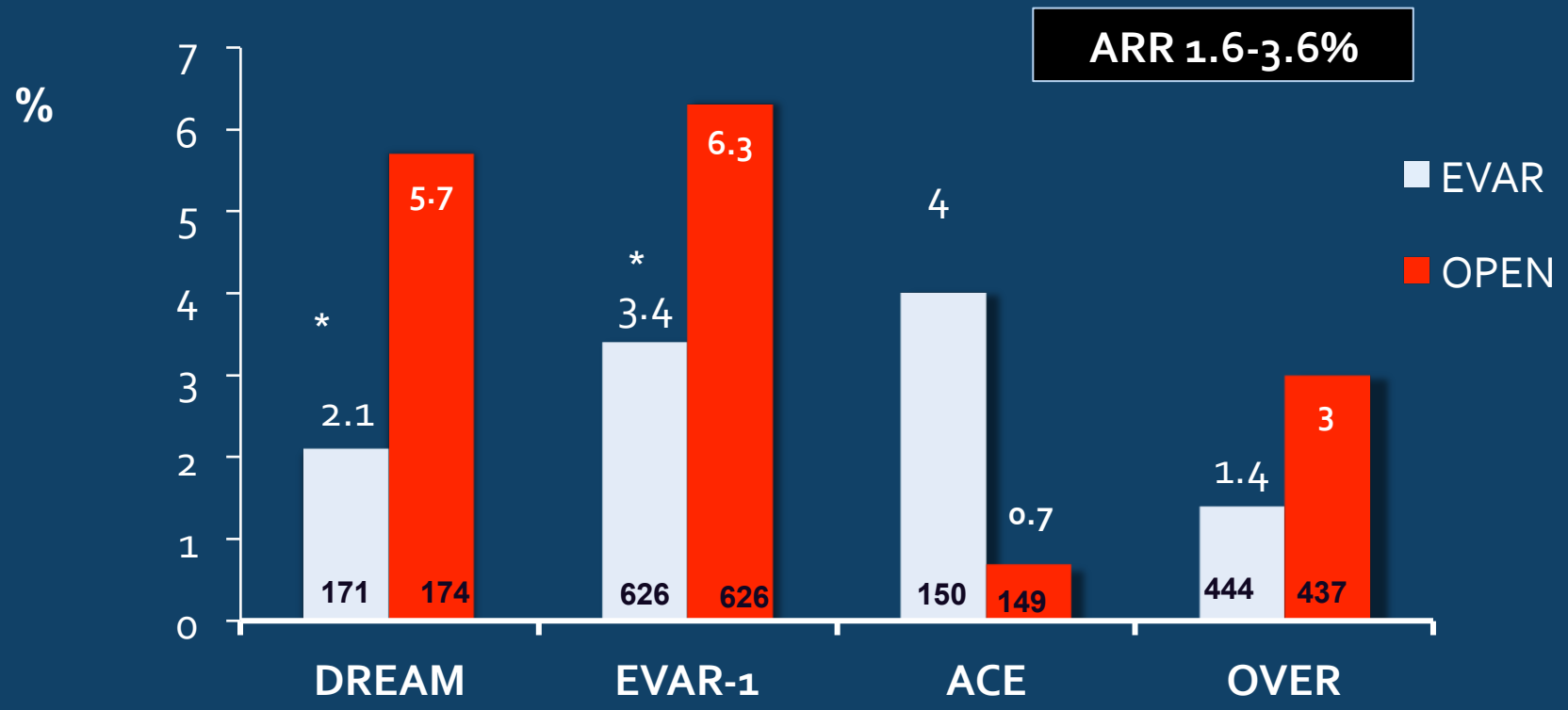
Prinssen M et al. N Engl J Med 2004;351:1607-1618.
EVAR-1 Investigators. Lancet 2004;364:843-848.
ACE trial. J Vasc Surg 2011;53:1167-73.
OVER trial. JAMA 2009;302:1535-1542.

*P<0.05

EVAR vs Open repair

Aneurysm-related death

Intermediate-term mortality-randomized controlled trials



*P<0.05

Low and intermediate surgical risk

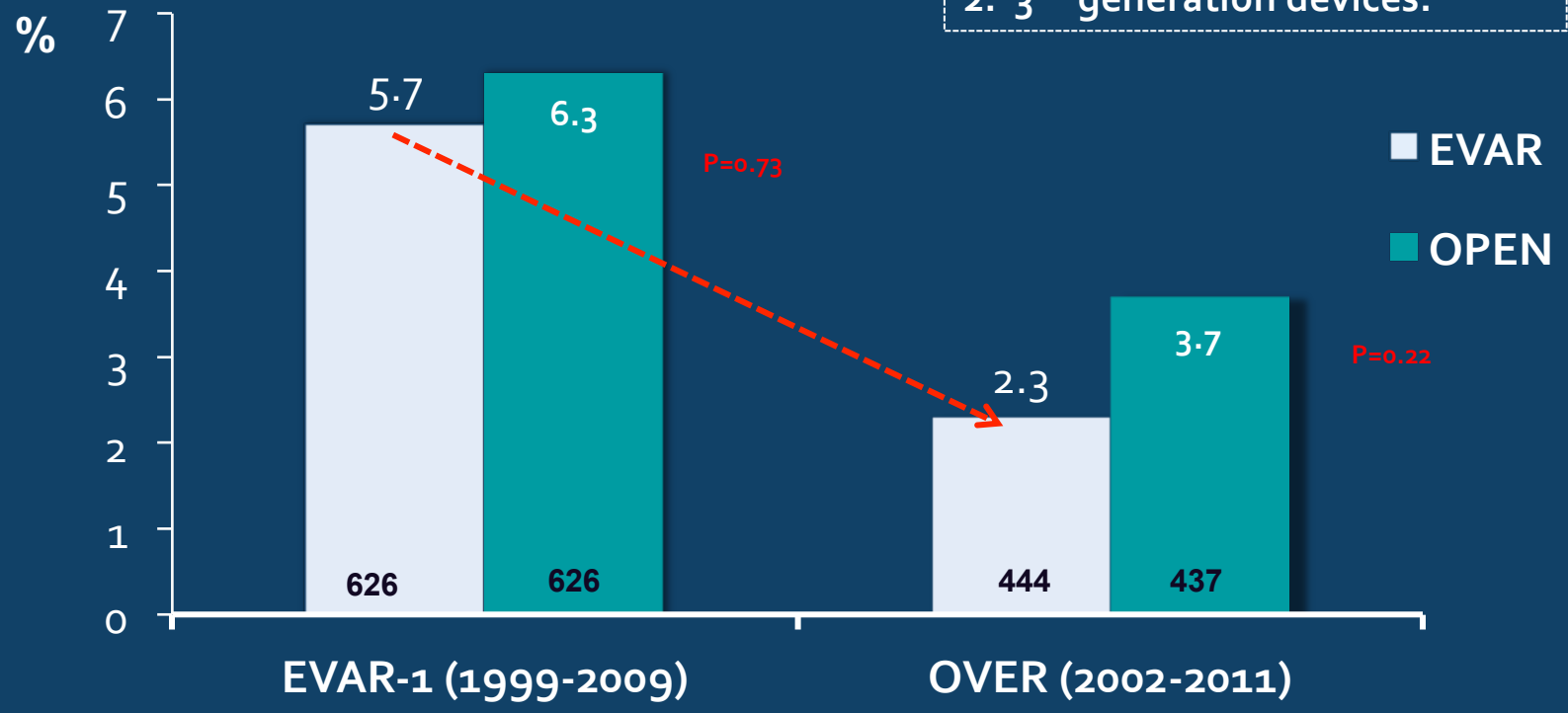
DREAM Investigators. N Engl J Med 2005;352:2398-2405. EVAR-1 Investigators. Lancet 2005;365:2179-2186. ACE trial. J Vasc Surg 2011;53:1167-73. OVER trial. JAMA 2009;302:1535-1542.

EVAR vs Open repair

Aneurysm-related death

Long-term mortality-randomized controlled trials

1.Optimal medical therapy
2. 3rd generation devices.



Low and intermediate surgical risk

EVAR-1 Investigators. NEJM 2010;362:1863-1871.

OVER trial. NEJM 2012;367:1988-1997.

Long-term mortality after EVAR vs Open repair Causes of death

	EVAR (%)	OPEN (%)	p
CV disease			
EVAR-1	9.2	8.1	ns
DREAM	9.2	8.9	0.16
OVER	8.8	6.6	0.23
Cancer			
EVAR-1	9.5	12.1	ns
DREAM	10.4	10.1	ns
OVER	8.8	11.0	0.27
Respiratory/Infection			
EVAR-1	3.9	6.0	ns
DREAM	4.0	2.8	ns
OVER	3.4	2.8	0.59

EVAR-1 Investigators. NEJM 2010;362:1863-1871. DREAM trial. NEJM 2010;362,1881-89.
OVER trial. NEJM 2012;367:1988-1997.

Long-term outcomes of EVAR vs Open repair

Late-aneurysm rupture after EVAR

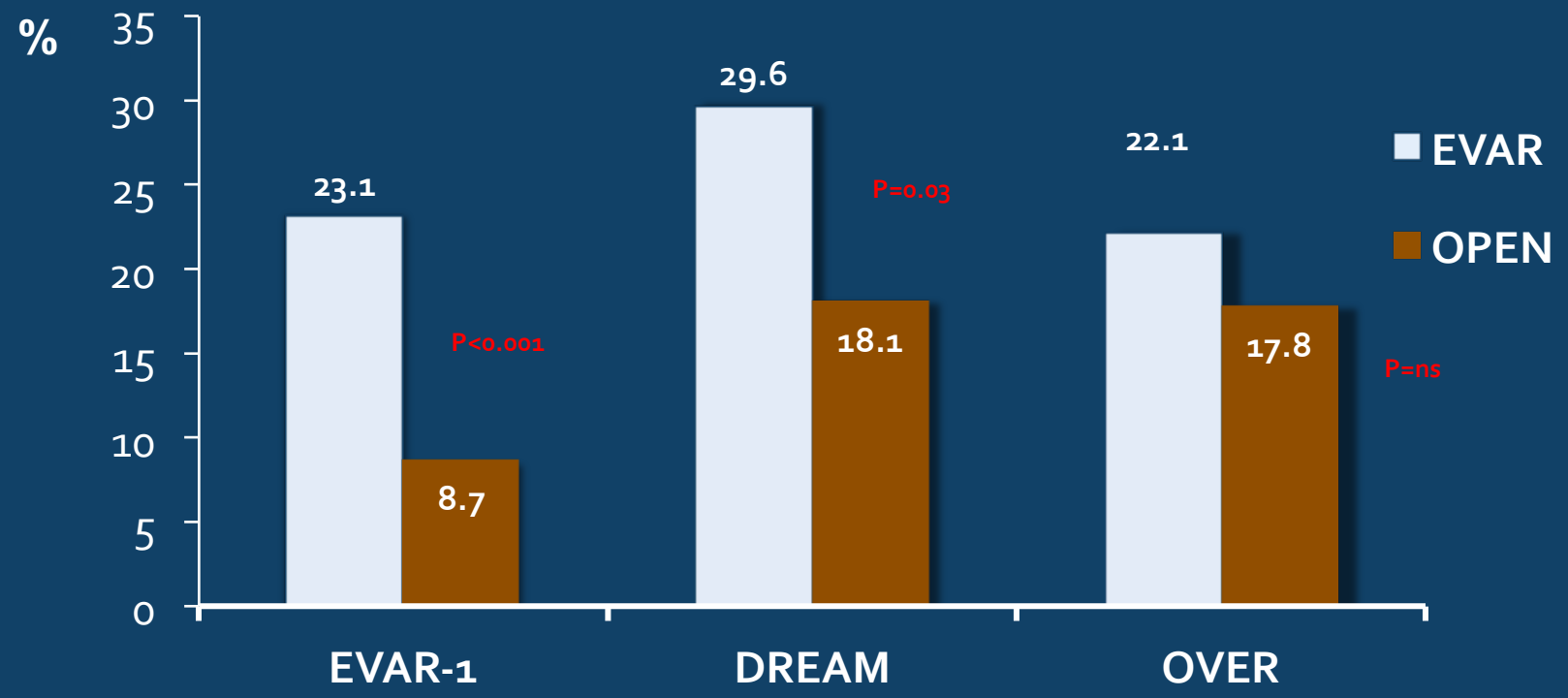
	EVAR	OPEN	p
EVAR-1 (8-y)	4.0	0	<0.05
DREAM (7-y)	0	1.1	ns
ACE (3-y)	1.3	0	0.12
OVER (8-y)	1.4	0	0.03

EVAR-1 Investigators. NEJM 2010;362:1863-1871. DREAM trial. NEJM 2010;362,1881-89.
ACE trial. J Vasc Surg 2011;53:1167-73. OVER trial. NEJM 2012;367:1988-1997.

EVAR vs Open repair

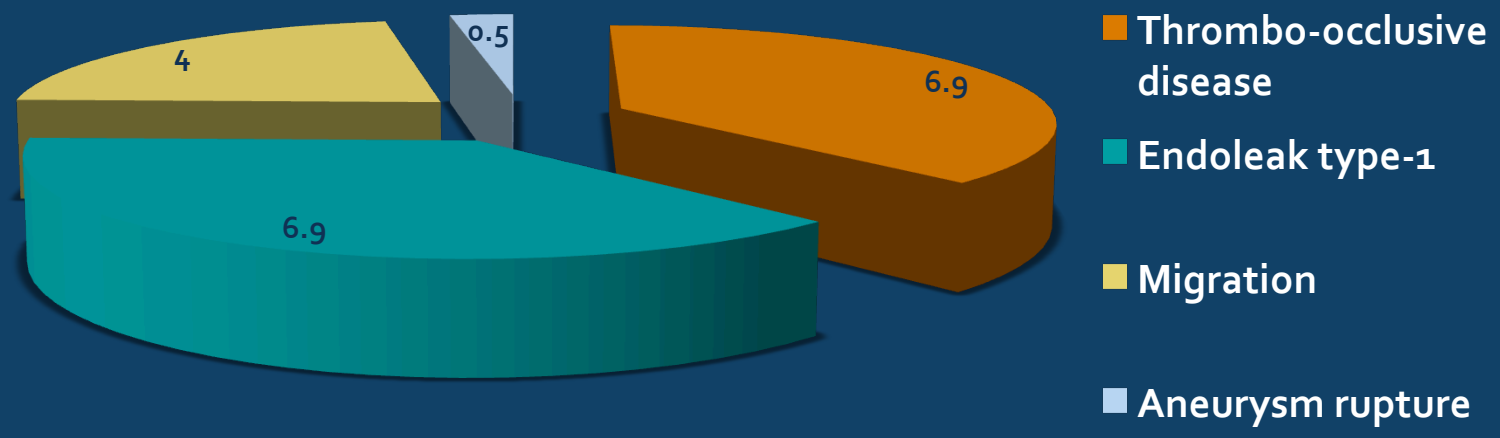
Secondary therapeutic procedures

Long-term outcomes of randomized controlled trials



EVAR-1 Investigators. NEJM 2010;362:1863-1871.
DREAM Investigators. NEJM 2010;362:1881-1889.
OVER trial. NEJM 2012;367:1988-1997.

DREAM Trial
Indications for first reintervention

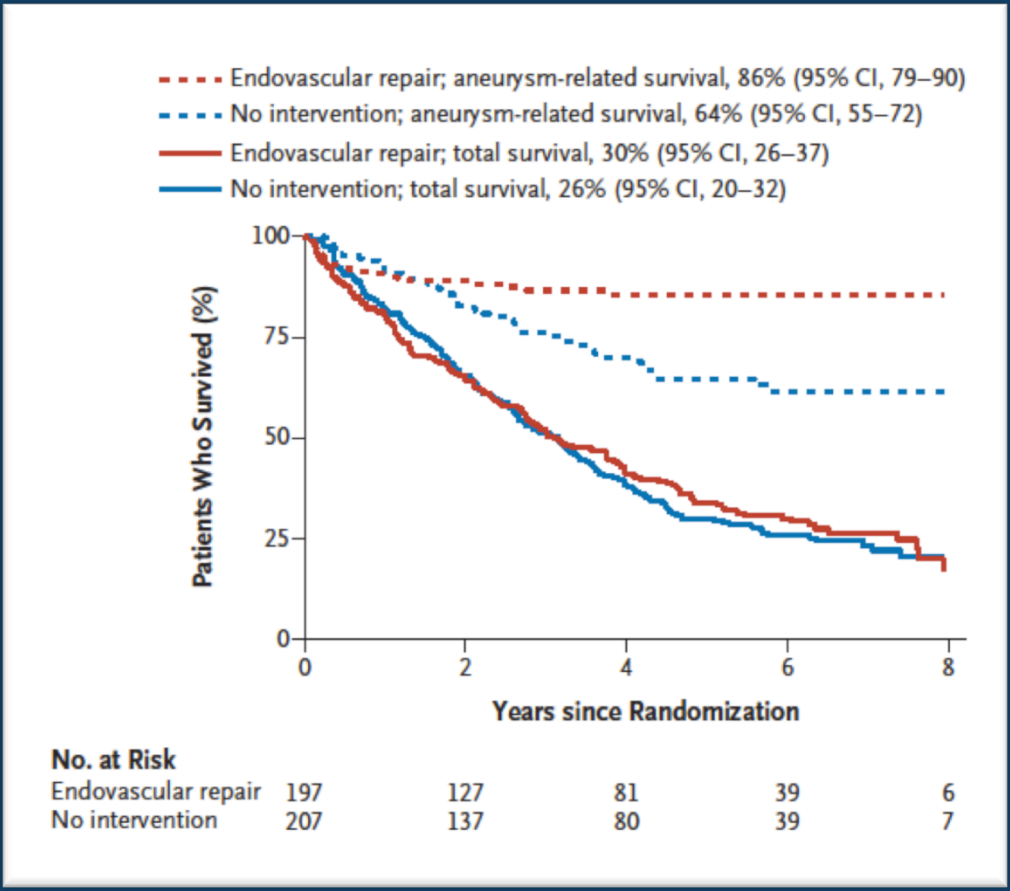


De Bruin JL, et al. N Engl J Med 2010;362:1881-1889.

EVAR 2 Trial
Endovascular repair vs no intervention
High surgical risk patients: unfit for open repair

No-Repair group
26.5% EVAR
7.2% Open repair

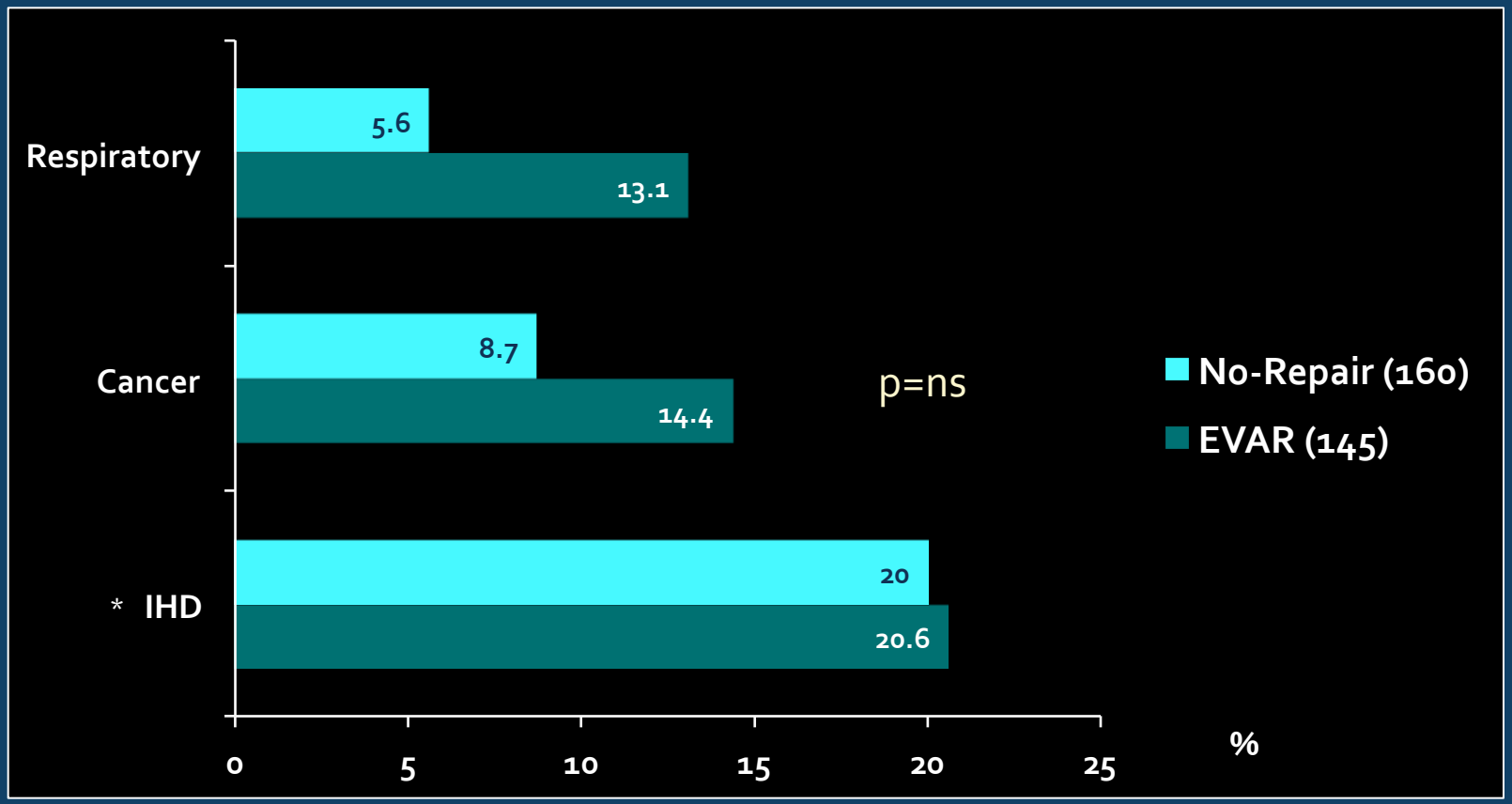
AAA repair: 33.8%



Aneurysms-related death
EVAR 13.6%
No Repair 35.6%
p=0.02

EVAR Trial. N Engl J Med 2010;362:1872-1880. Supplementary appendix data.

EVAR-2 Trial: high surgical risk patients
Causes of death



- Ischaemic heart disease.

EVAR Trial. N Engl J Med 2010;362:1872-1880. supplementary appendix data.

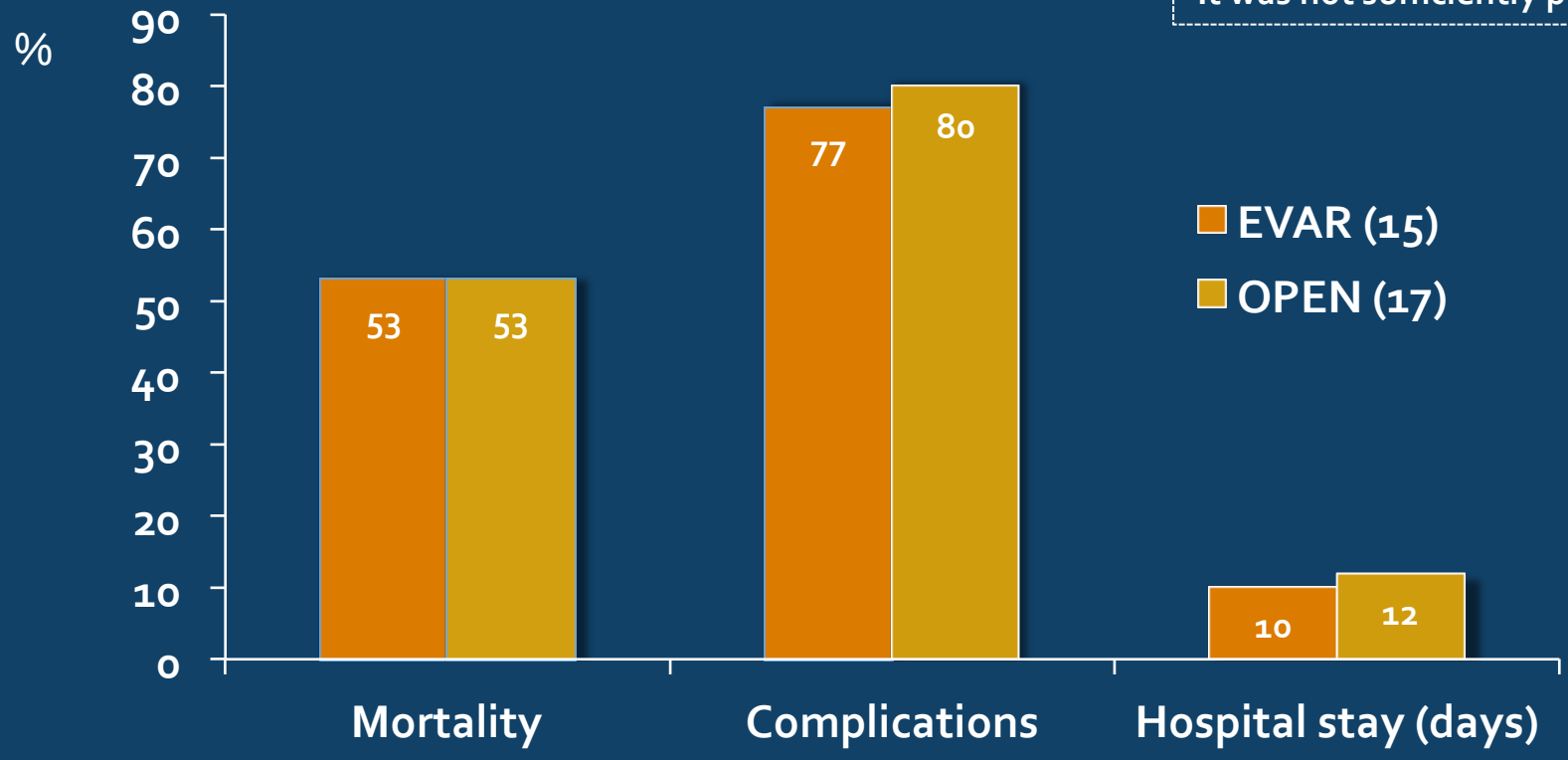
Endovascular repair of r-AAA

Authors	Year	Number of pts	Overall mortality (%)
Registries			
Veith (World experience)	2009	1037	21.1
Richards	2007	51	29
Gibbons	2008	474	15
Mani	2009	91	14.3
Meta-analysis			
Harkin	2007	891	18
Visser	2007	148	22
Mastracci	2008	436	21
Sadat	2008	730	30
Azizzadeh	2008	531	30
Rayt	2008	981	24
Karkos	2008	897	24

Karkos CD et al. Eur J Vasc Endovasc Surg 2011;42:775-786.

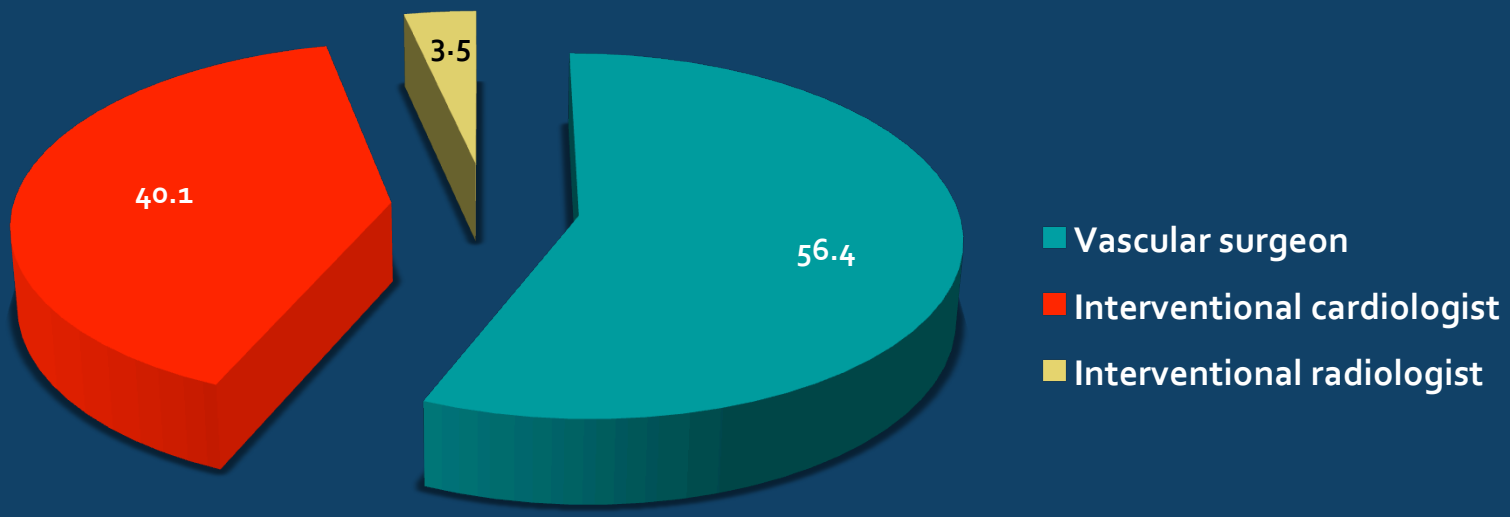
R-AAA: Randomized controlled trial Results of a Pilot Study

The trial proved the feasibility.
It was not sufficiently powerful.



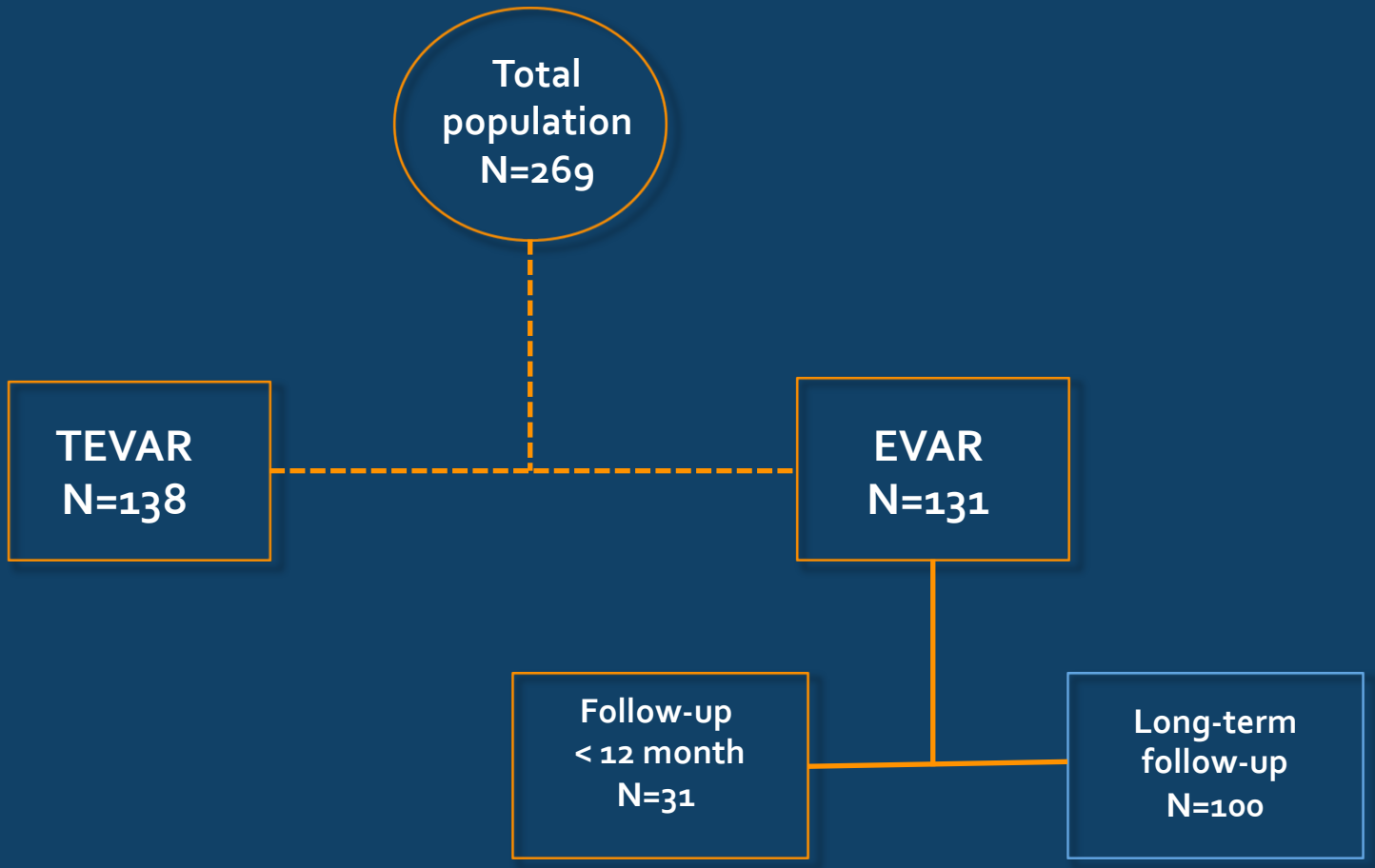
Eur J Vasc Endovasc Surg 2006;32:506-513.

Endovascular treatment of AAA by speciality in Mexico (2012)



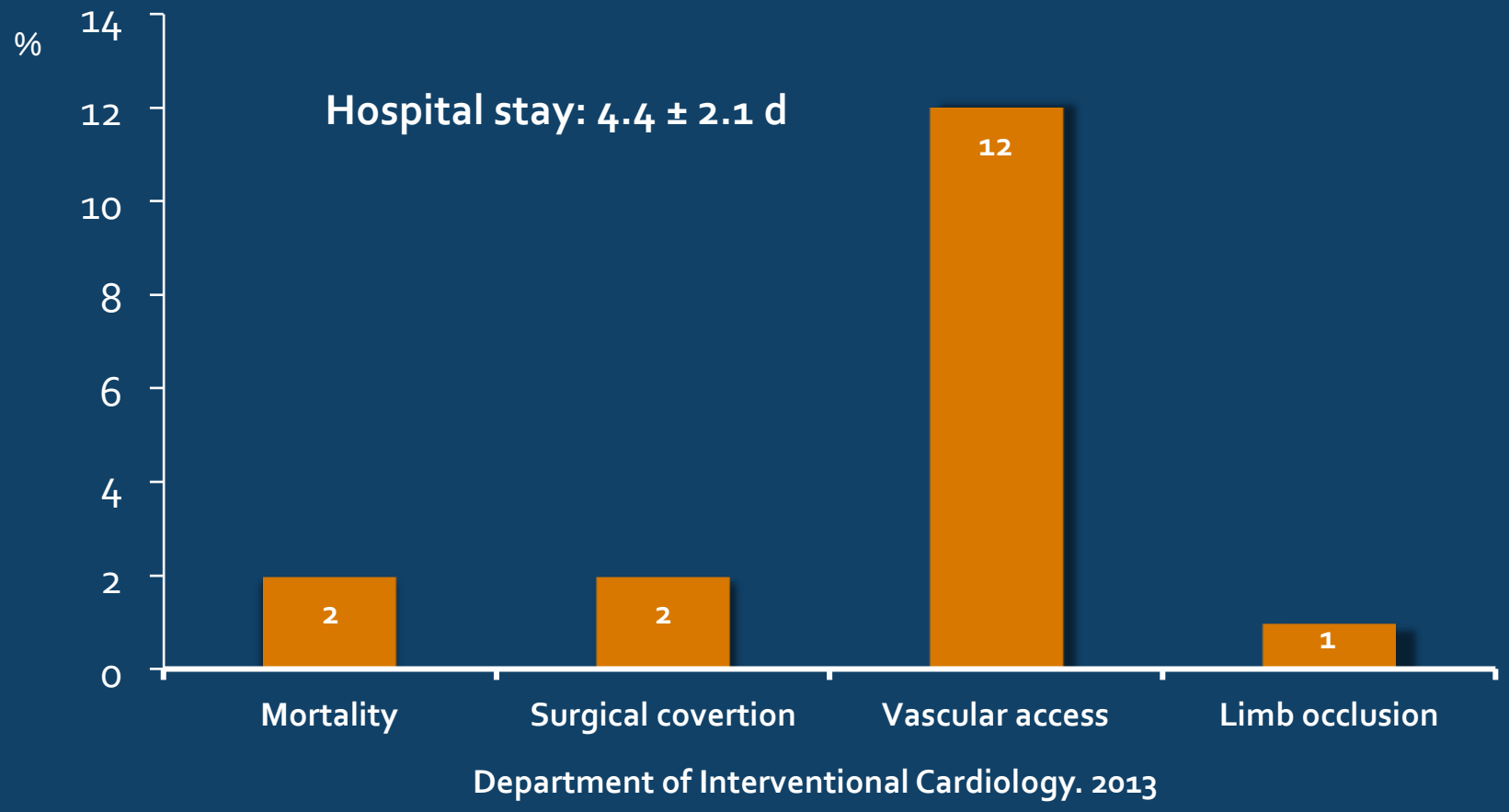
Approved for use in Mexico : Endurant® Medtronic, Endologix Powerlink®, Gore Excluder®, and Cook Zenith®

Endovascular treatment of AAA



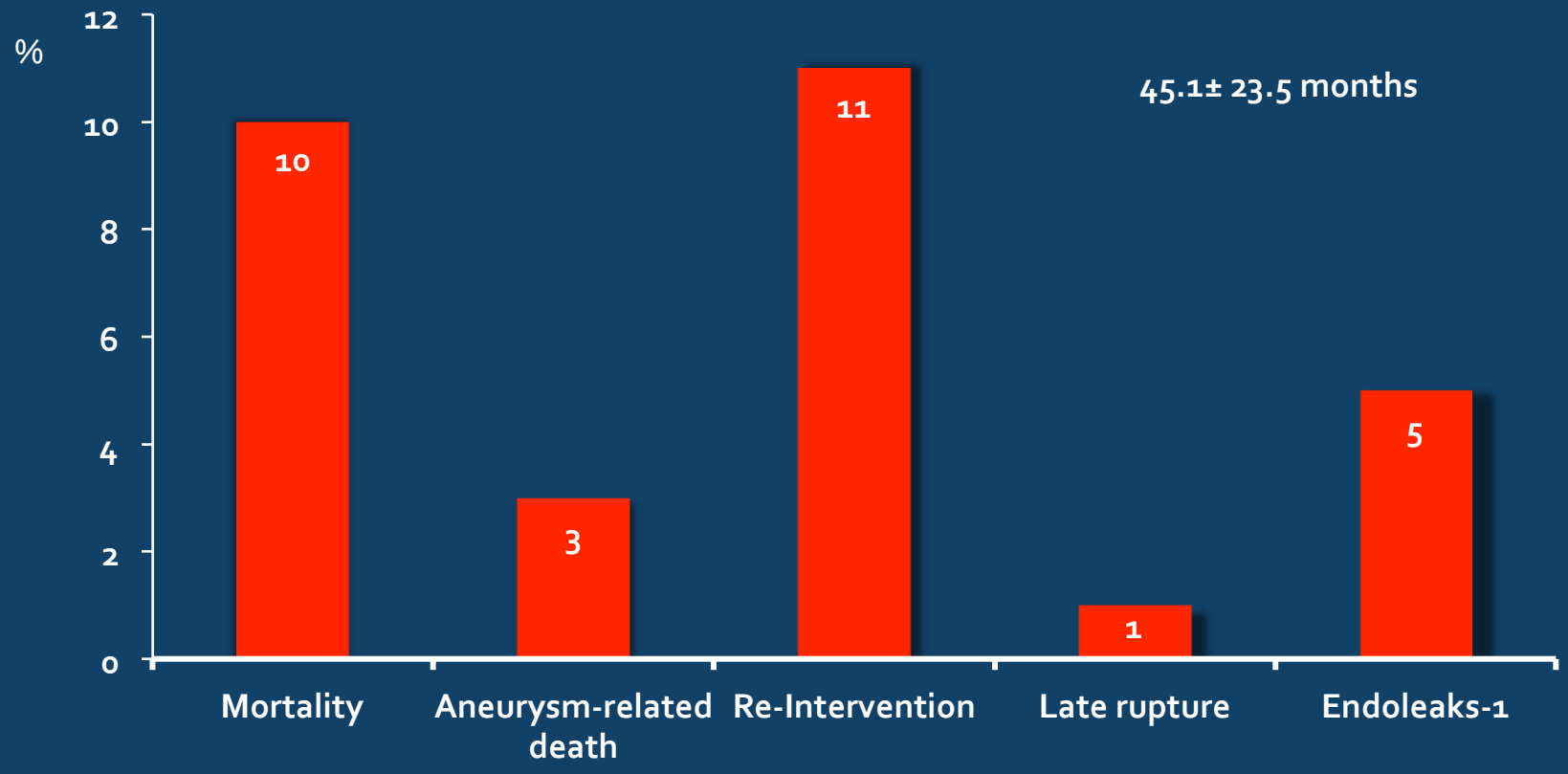
Eid-Lidt G. Instituto Nacional de Cardiología "Ignacio Chávez". 2013.

In-Hospital outcomes
Intermediate-high risk patients



Department of Interventional Cardiology. 2013

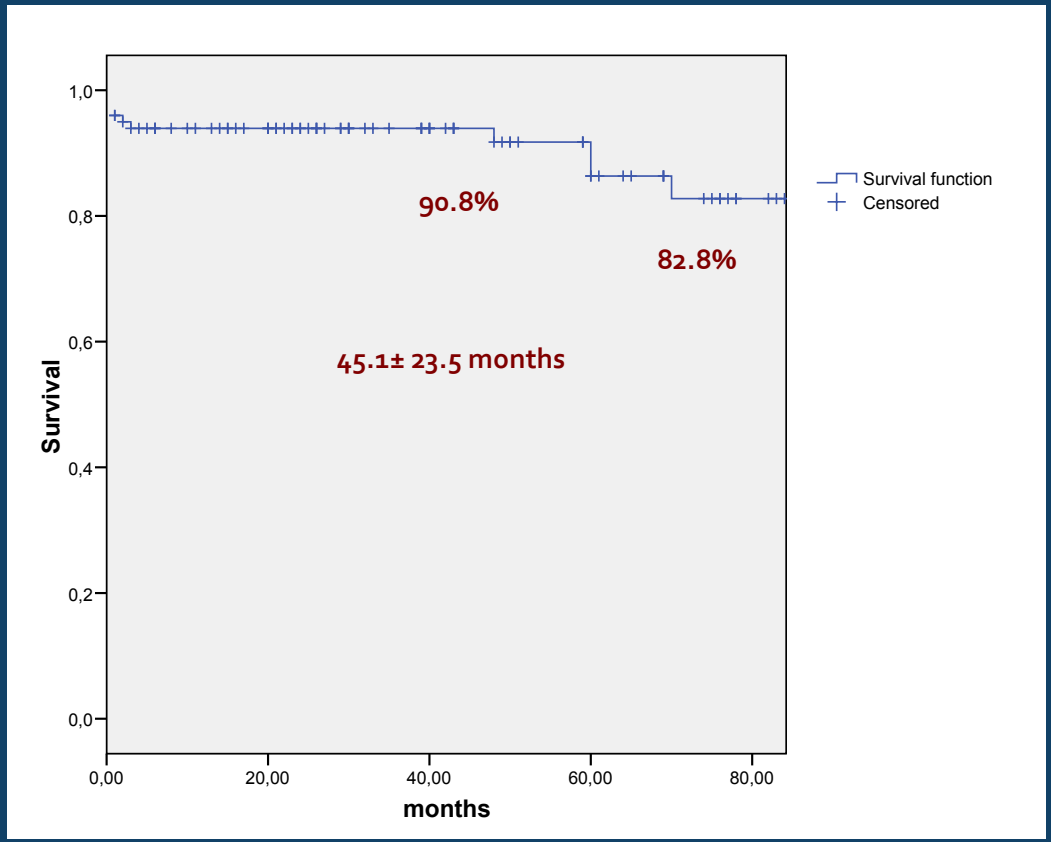
Long-term outcomes
Major adverse events (4-y)



Department of Interventional Cardiology. 2013

Endovascular repair

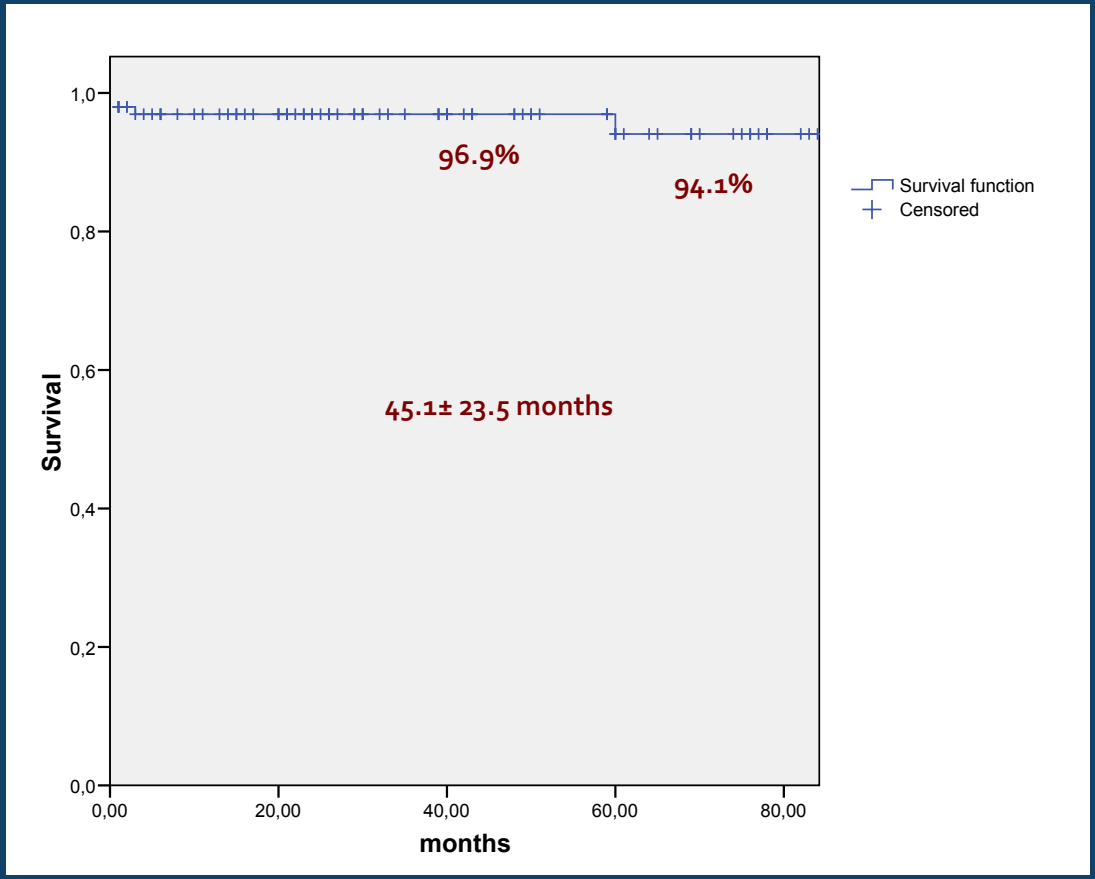
Global survival (4 - 7 ys)



Department of Interventional Cardiology. 2013

Endovascular repair

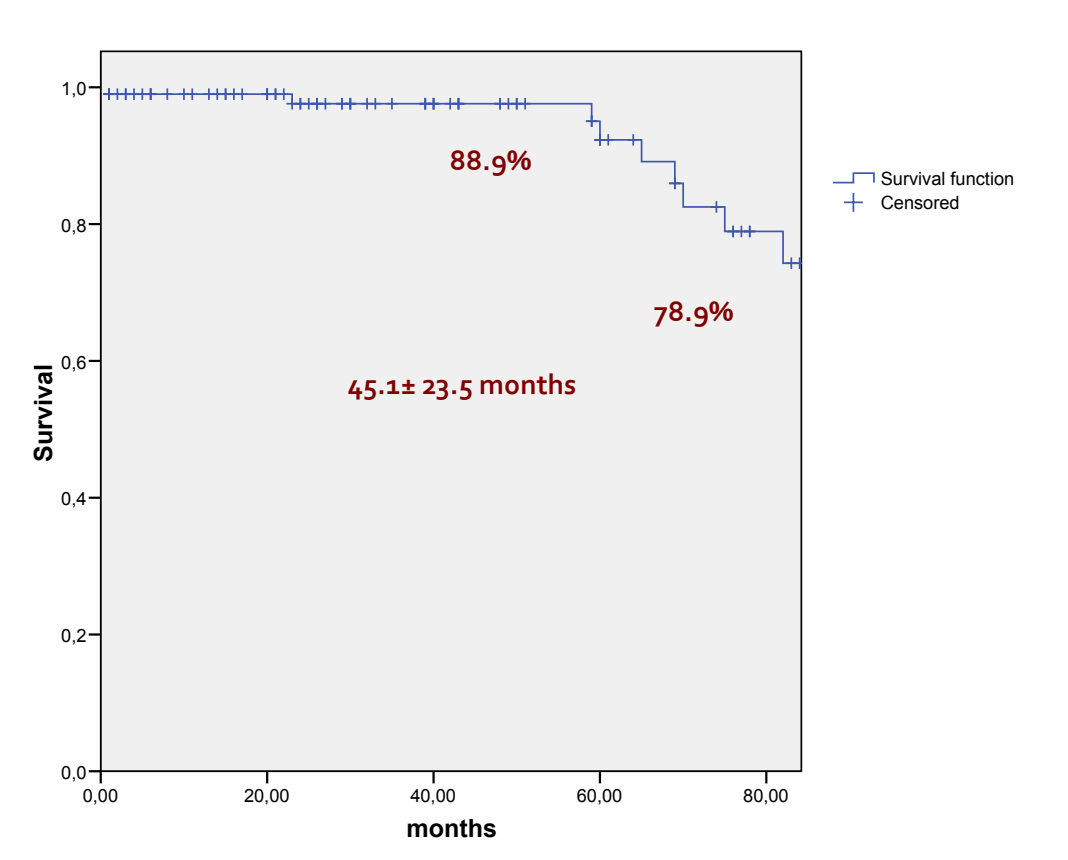
Aneurysm-related survival (4 - 7 ys)



Department of Interventional Cardiology. 2013

Endovascular repair

Survival without a reintervention (4 – 7 ys)



Department of Interventional Cardiology. 2013

Conclusions

1. Small AAA: no advantages has been shown between early or delayed EVAR strategy (PIVOTAL & CAESAR Trials)..

2. Low-intermediate risk patients: there is no significant difference in the primary outcome of long-term mortality between the EVAR and open repair. Re-interventions rate higher with EVAR (EVAR-1, DREAM, OVER Trials).

3. High-risk patients, unfit for open repair: endovascular repair is associated with a significant lower rate of aneuryms-related mortality and similar rate of death from any cause (EVAR-2). It is necessary more data to define the role of EVAR in r-AAA (IMPROVED Trial).

4. Long-term outcomes of EVAR in Mexico: comparable to the RCTs.