ORBITA: Not to be ignored

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Disclosures

I am an interventional cardiologist (not even one PhD!)

Not fee-for service

And, I may be politically incorrect

Objective of ORBITA

To determine if in patients with symptomatic single vessel disease, PCI on a background of OMT, improved exercise time by at least 30s more than a sham control

To determine if there was a placebo effect associated with PCI

ORBITA was methodologically rigorous, meticulously conducted, but unexpectedly did not meet the primary endpoint

Reaction to ORBITA

Truth passes through 3 stages (Arthur Schopenhauer):

First, it is ridiculed

Second, it is violently opposed

Finally, it is accepted as self-evident

J Am Coll Cardiol 2007;50:1604-9

Reactions to ORBITA

Reactions were “.. competing choruses of overextrapolation and denigration”,

and were often “intemperate, innumerate and plain inaccurate”

Responses were also predictable,

And depended on the specialty!

Reactions to ORBITA

The nihilists: "..the last nail in the coffin for PCI"

The interventionists:

Who does PCI in such patients? "Low symptom burden (CCS 0-1) in ~25% of patients after antianginal therapy"

Unfair comparison; sicker patients underwent PCI. "More ostial and proximal lesions in PCI arm"

I don't see such patients in my practice. "Study question is limited to a minority of patients undergoing PCI in contemporary practice"

They didn't know how to do the procedure. Complications with FFR "are worrying"

Reactions to ORBITA

The interventional trialists/statisticians:

Tiny, irrelevant study. “Insufficient power to detect a clinically relevant difference between groups”

Poor statistical methods. “baseline imbalance in exercise time”, “t test not appropriate”

Results may be different on longer-term follow up. “Lack of extended follow-up results beyond 6 weeks”

Imagers:

Who uses TMT these days? “MPI would have shown a difference”

Reactions and responses

11% had no angina at randomization, high exercise times (8’ 48”), 29% had FFR >0.8

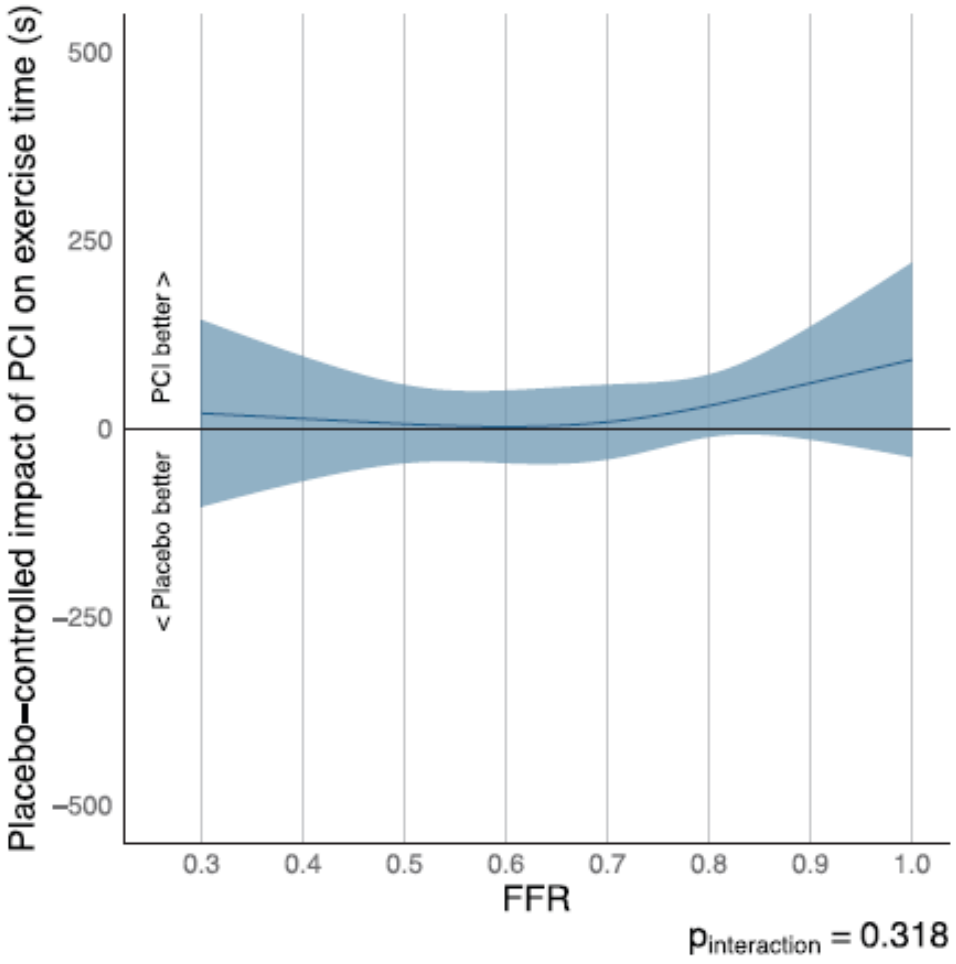
Similar proportion of patients were asymptomatic in other trials:

11% FAME 2, 13% COURAGE, 9% ACME

8’ 48” in Modified Bruce protocol is equivalent to 5’ 48” in Bruce; similar in ACME (8’ 51”)

As in routine practice, FFR was not used for deciding on the need for PCI

Reactions and responses



There was no impact of FFR at baseline on the effect of PCI on exercise time

Similar for angina

47% of patients had CCS II, III angina at 6 weeks after blinded PCI!

Circulation 2018;138:00–00. DOI: 10.1161/CIRCULATIONAHA.118.033801

Reactions and responses

These results may apply only to "..10% of patients undergoing PCI in contemporary practice"

Patient Characteristics	No. (%)						
	Total	2009[a]	2010	2011	2012	2013	2014
No. of diseased vessels (≥70% stenosis)							
0	2758 (0.7)	350 (0.9)	741 (0.8)	587 (0.8)	407 (0.6)	358 (0.6)	315 (0.5)
1	214 960 (54.1)	23 162 (56.5)	49 732 (55.4)	42 445 (54.2)	35 963 (53.8)	32 790 (52.5)	30 868 (52.0)
2	116 447 (29.3)	11 656 (28.4)	25 908 (28.9)	23 008 (29.4)	19 578 (29.3)	18 539 (29.7)	17 758 (29.9)
3	63 572 (16.0)	5856 (14.3)	13 323 (14.9)	12 288 (15.7)	10 901 (16.3)	10 770 (17.2)	10 434 (17.6)

In the US, over 50% of all elective PCIs are performed in patients with SVD

JAMA 2015;314(19):2045-2053

Reactions and responses

PCI is not needed in this group…

Patient Characteristics	No. (%) Total	2009[a]	2010	2011	2012	2013	2014
CAD presentation							
No symptoms, no angina	91 046 (22.9)	11 899 (29.0)	23 889 (26.6)	18 367 (23.5)	13 902 (20.8)	12 301 (19.7)	10 688 (18.0)
Symptoms unlikely to be ischemic	41 247 (10.4)	4145 (10.1)	9577 (10.7)	8301 (10.6)	7179 (10.7)	6165 (9.9)	5880 (9.9)
Stable angina	265 444 (66.7)	24 980 (60.9)	56 238 (62.7)	51 660 (66.0)	45 768 (68.5)	43 991 (70.4)	42 807 (72.1)
Angina							
No symptoms	102 920 (25.9)	12 443 (30.3)	26 313 (29.3)	20 541 (26.2)	16 313 (24.4)	14 420 (23.1)	12890 (21.7)
CCS class I	44 889 (11.3)	6297 (15.4)	12 752 (14.2)	10 070 (12.9)	6484 (9.7)	4934 (7.9)	4352 (7.3)
CCS class II	148 898 (37.4)	15 824 (38.6)	34 958 (39.0)	31 366 (40.0)	25 842 (38.7)	21 571 (34.5)	19 337 (32.6)
CCS class III	89 909 (22.6)	5575 (13.6)	13 442 (15.0)	14 454 (18.5)	16 299 (24.4)	19 412 (31.1)	20 727 (34.9)
CCS class IV	11 121 (2.8)	885 (2.2)	2239 (2.5)	1897 (2.4)	1911 (2.9)	2120 (3.4)	2069 (3.5)
No. of antianginal medications							
0	102 655 (25.8)	13 811 (33.7)	27 076 (30.2)	21 306 (27.2)	15 719 (23.5)	13 222 (21.2)	11 521 (19.4)
1	187 154 (47.1)	19 272 (47.0)	42 610 (47.5)	37 427 (47.8)	31 930 (47.8)	28 884 (46.3)	27 031 (45.5)
≥2	107 885 (27.1)	7928 (19.3)	20 011 (22.3)	19 585 (25.0)	19 195 (28.7)	20 350 (32.6)	20 816 (35.1)

JAMA 2015;314(19):2045-2053

Reactions and responses

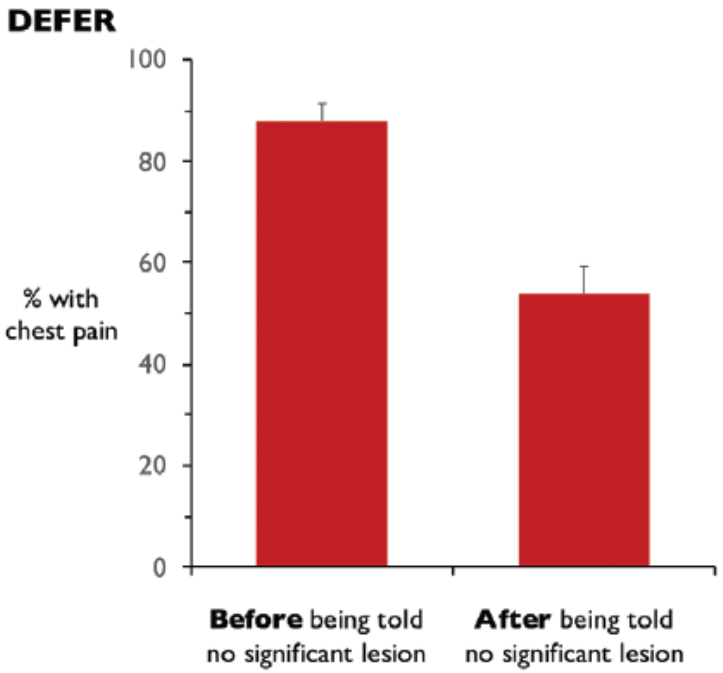
Baseline difference in exercise time, lack of adjustment for this difference, 16.6s difference is not significant because of lack of power

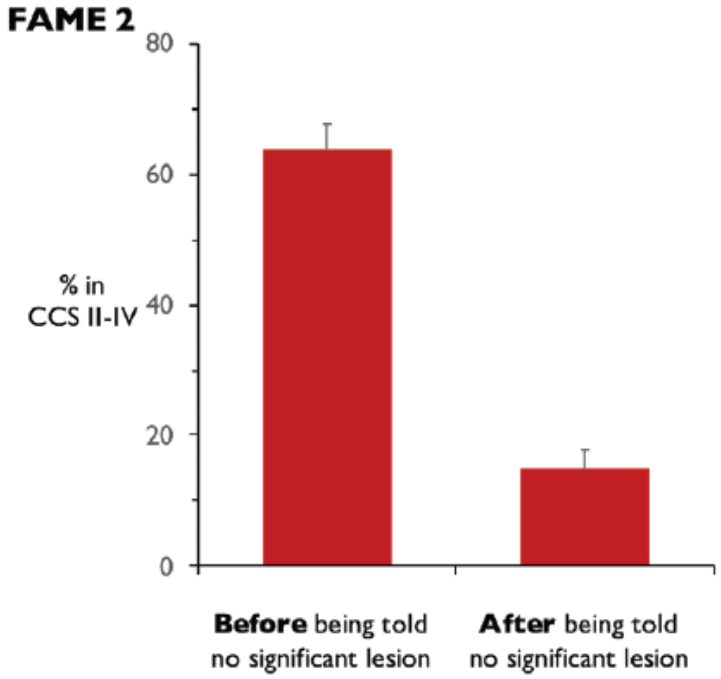
Results with ANCOVA: 21.4 s (-3.4 to 41.1 s; p=0.09)

Is a 20-40s improvement in exercise time an “exciting enough” (ie., clinically important) difference?

Are the results of ORBITA really that novel?

The power of “telling” in DEFER and FAME 2

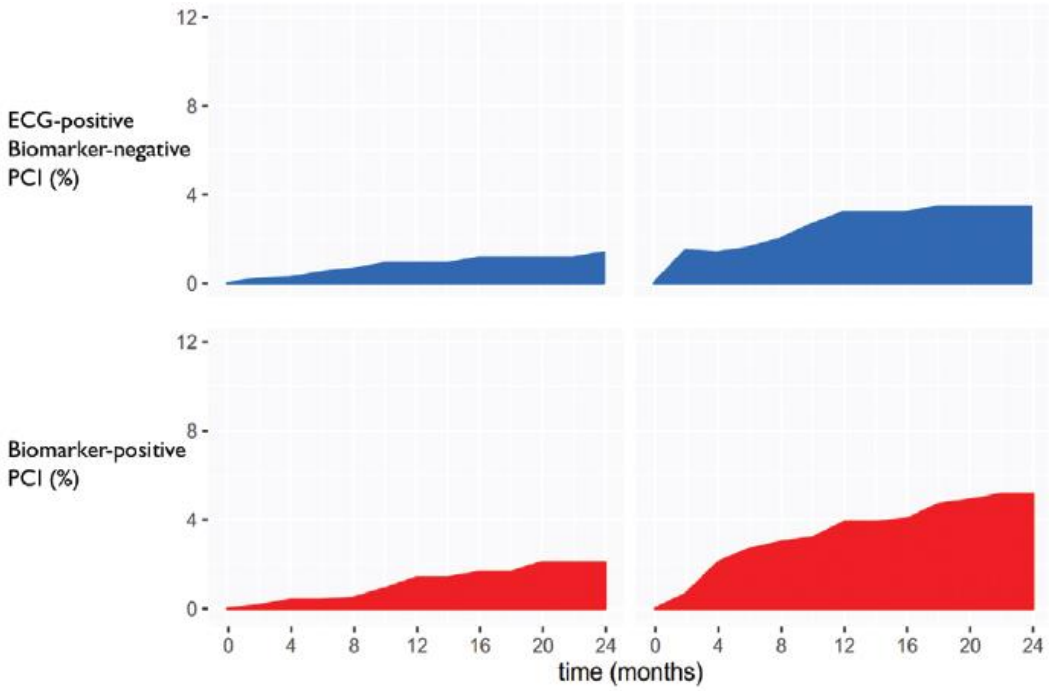


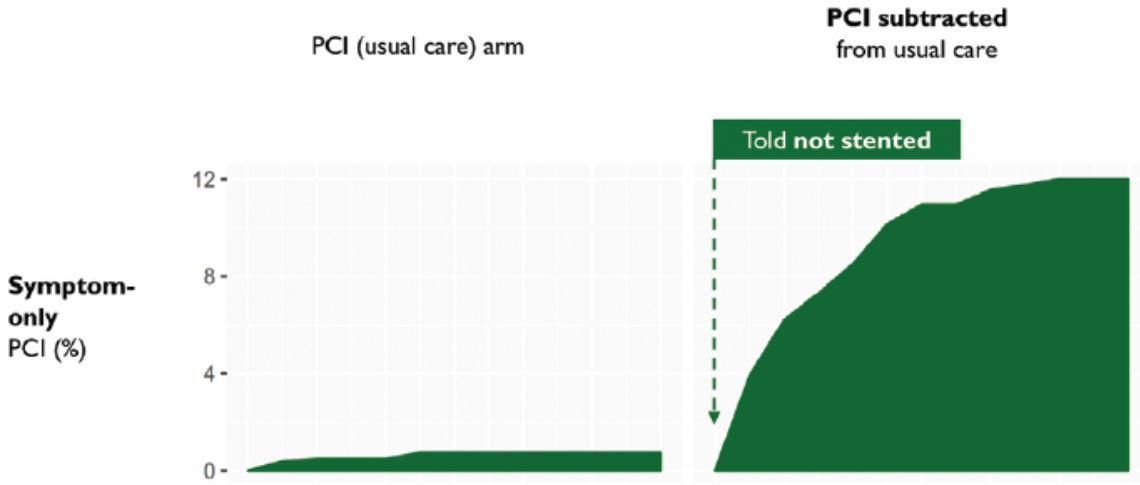


Circ Cardiovasc Qual Outcomes 2018;11:e004665

Are the results of ORBITA really that novel?

Effect of “subtraction anxiety” on revascularization in FAME 2





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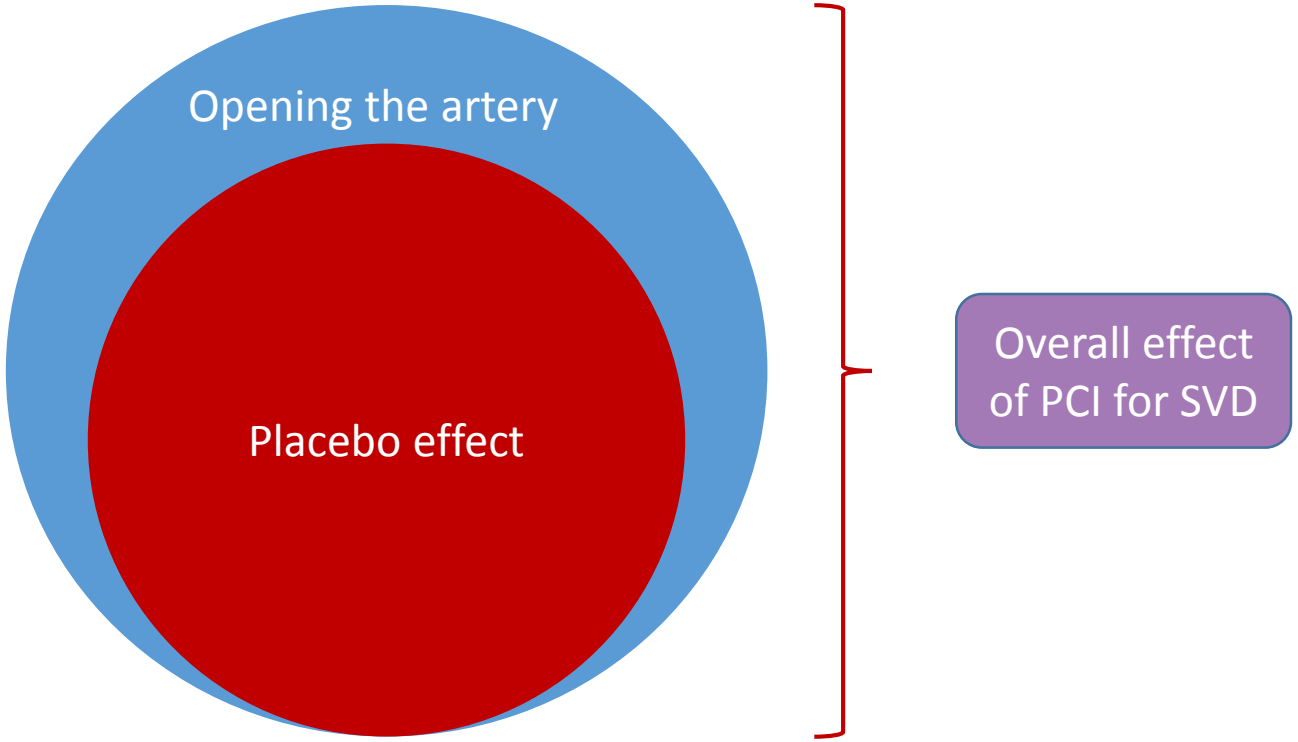
What ORBITA teaches us?



In patients with symptomatic SVD, the alleviation of symptoms by PCI may be due to a (**proportionally**) large placebo effect

What we should (probably) not take from ORBITA

The truth is self-evident!

“And if the patient is treated with PCI and is benefiting from the “placebo effect,” who am I to interfere with that benefit of this “therapy”?”

What we should take from ORBITA

1. Patients with stable angina and single vessel disease should be initially treated with OMT

2. The magnitude of benefit of PCI on objective measures of symptom relief in this population is less than previously believed

3. These findings should form part of the doctor-patient conversation while planning treatment

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