

SHORT DAPT VS. LONGER DAPT: WHOM AND HOW?

CLINICIAN AND TRIALIST'S PERSPECTIVE

Robert W. Yeh, MD MSc MBA

Director, Richard A. and Susan F. Smith Center for Outcomes Research in Cardiology

Associate Chief, Interventional Cardiology, Beth Israel Deaconess Medical Center

Associate Professor of Medicine, Harvard Medical School

#TCTAP2021



@rwyeh



Beth Israel Deaconess
Medical Center



HARVARD MEDICAL SCHOOL
TEACHING HOSPITAL

Richard A. and Susan F.
Smith Center for Outcomes Research
in Cardiology

Funding and Disclosures

Industry Funding and Disclosures

Abbott Vascular: Scientific Advisory Board, CTO Proctoring, Consulting, Investigator-initiated research grant

Astra Zeneca: Consulting, Investigator-initiated research grants

Boston Scientific: Scientific Advisory Board, CTO Proctoring, Consulting, Investigator-initiated research grants

Medtronic: Scientific Advisory Board, Consulting, Investigator-initiated research grants

SAFE-PAD Study – (Co-PI) is jointly sponsored by Bard, Boston Scientific, Cook, Phillips, and Medtronic.

Non-Industry Funding

National Heart, Lung and Blood Institute

R01HL136708 (EXTEND Study)

K23HL118138 (DAPT Score)

K24HL150321



Current Guidelines Support Individualizing DAPT Duration

Individualized treatment (“selective”) is favored over one-size-fits all (“routine”)

Antiplatelet therapy after stenting			
DAPT is indicated for at least 1 month after BMS implantation.	I	A	791,799-801
DAPT is indicated for 6 months after DES implantation.	I	B	799,802,803
Shorter DAPT duration (<6 months) may be considered after DES implantation in patients at high bleeding risk.	IIb	A	804,805
Life-long single antiplatelet therapy, usually ASA, is recommended.	I	A	776,794
Instruction of patients about the importance of complying with antiplatelet therapy is recommended.	I	C	-
DAPT may be used for more than 6 months in patients at high ischaemic risk and low bleeding risk.	IIb	C	-



In patients with ACS treated with coronary stent implantation who have tolerated DAPT without bleeding complication and who are not at high bleeding risk (e.g., prior bleeding on DAPT, coagulopathy, oral anticoagulant use) continuation of DAPT for longer than 12 months may be reasonable (16,22-26,28,30,40,41,43,53,54,72).



In patients with ACS treated with DAPT after DES implantation who develop a high risk of bleeding (e.g., treatment with oral anticoagulant therapy), are at high risk of severe bleeding complication (e.g., major intracranial surgery), or develop significant overt bleeding, discontinuation of P2Y₁₂ therapy after 6 months may be reasonable (17-21,34,36,37).

How We Identify Patients for Short vs. Long Strategies?

Clinical Factors

Anatomical Factors

Procedural Factors



Clinical Factors – High Bleeding Risk

In 2018, ARC (developed the ST definition) developed a definition of HBR patients

- Includes PCI candidates who have a post-procedure 1-year >4% risk of a major bleed (BARC 3-5) and/or a >1% risk of intracranial bleeding
- HBR status is considered present for patients who meet at least 1 major or 2 minor HBR criteria



Validated Bleeding Scores

PARIS Bleeding Score

- Developed in an all-comers registry
- Validated in ADAPT-DES (C-stat 0.64)
- Factors include
 - Older age
 - Extremes of BMI
 - Smoking
 - Anemia
 - Triple therapy

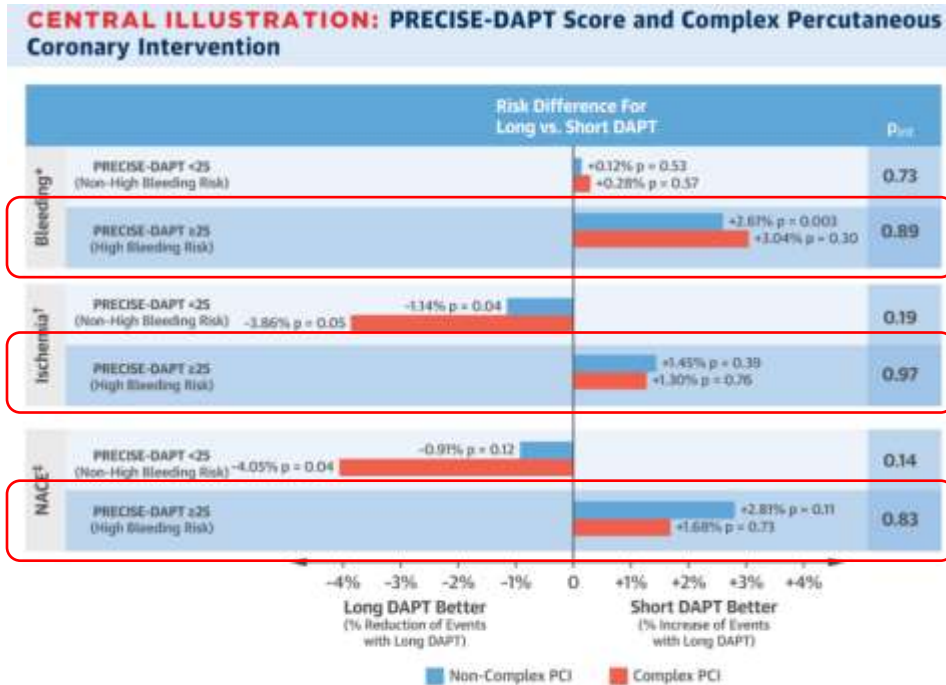
PRECISE-DAPT Bleeding Score

- Developed in pooled cohort of 8 RCTs
- Validated in PLATO Trial and Bern PCI registry (c-stat 0.66-0.70)
- Factors include
 - Lower hemoglobin
 - Higher WBC count
 - Older Age
 - Lower Cr clearance
 - Prior bleeding

Baber, Mehran et al.

Costa, Valgimigli et al.

Shorter vs. Longer DAPT Based on Bleeding Risk vs. Lesion Complexity

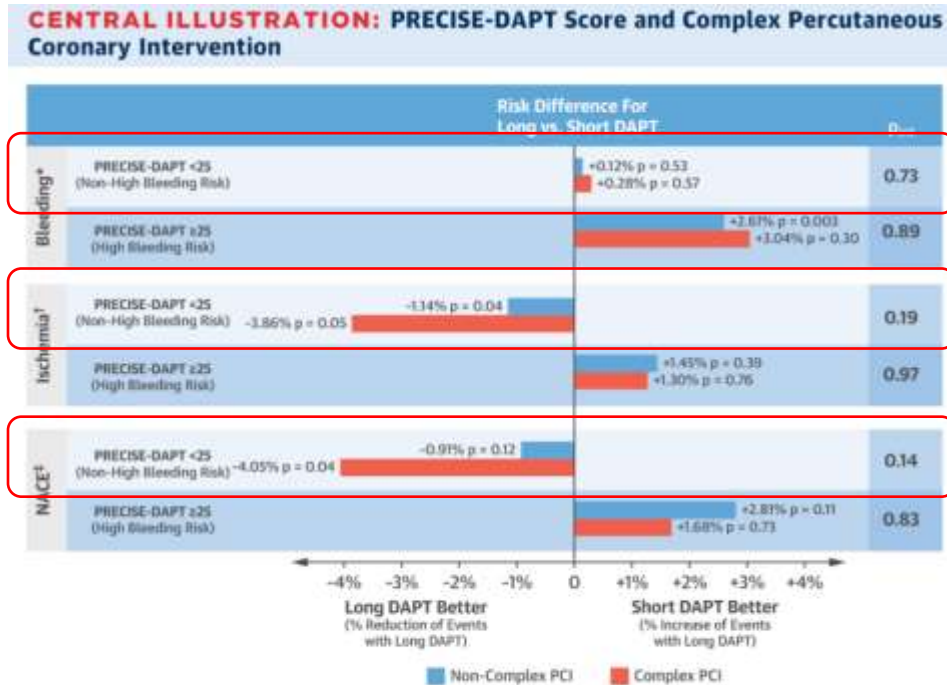


Short DAPT: 3-6 mo
Longer DAPT: 12-24 mo

Costa, F. et al. J Am Coll Cardiol. 2019;73(7):741-54.



What About Low Bleeding Risk Patients?

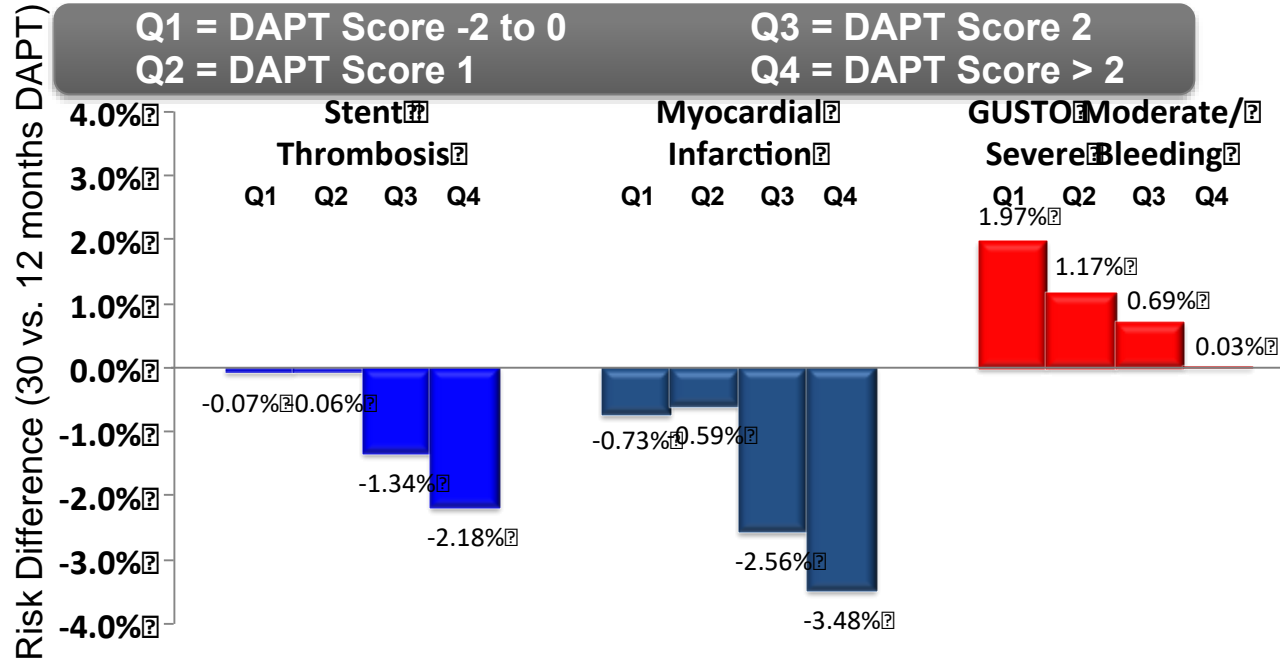


Costa, F. et al. J Am Coll Cardiol. 2019;73(7):741-54.

75% of patients had PRECISE-DAPT < 25 and would have benefited from LONGER DAPT duration, with clear signal of greater benefit for more complex disease.

ACS patients, particularly those with high DAPT Score, benefit most from long DAPT

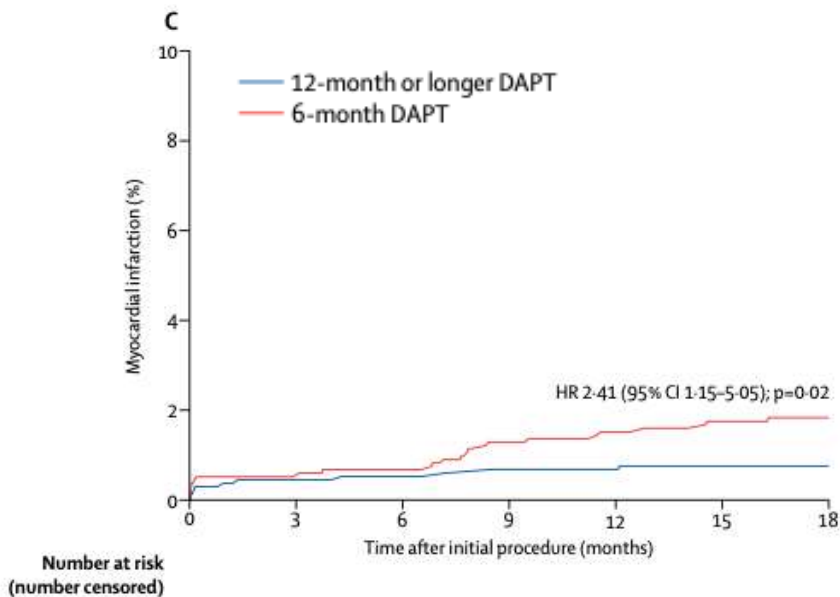
Variable	Points
Patient Characteristic	
Age	
≥ 75	-2
65 - <75	-1
< 65	0
Diabetes Mellitus	1
Current Cigarette Smoker	1
Prior PCI or Prior MI	1
CHF or LVEF < 30%	2
Index Procedure Characteristic	
MI at Presentation	1
Vein Graft PCI	2
Stent Diameter < 3mm	1



Yeh, Secemsky, Kereiakes et al. JAMA. 2016.

Going too short in ACS

- SMART-DATE: 6 vs. 12+ months DAPT after ACS (2700 pts). SAPT regimen = ASA monotherapy



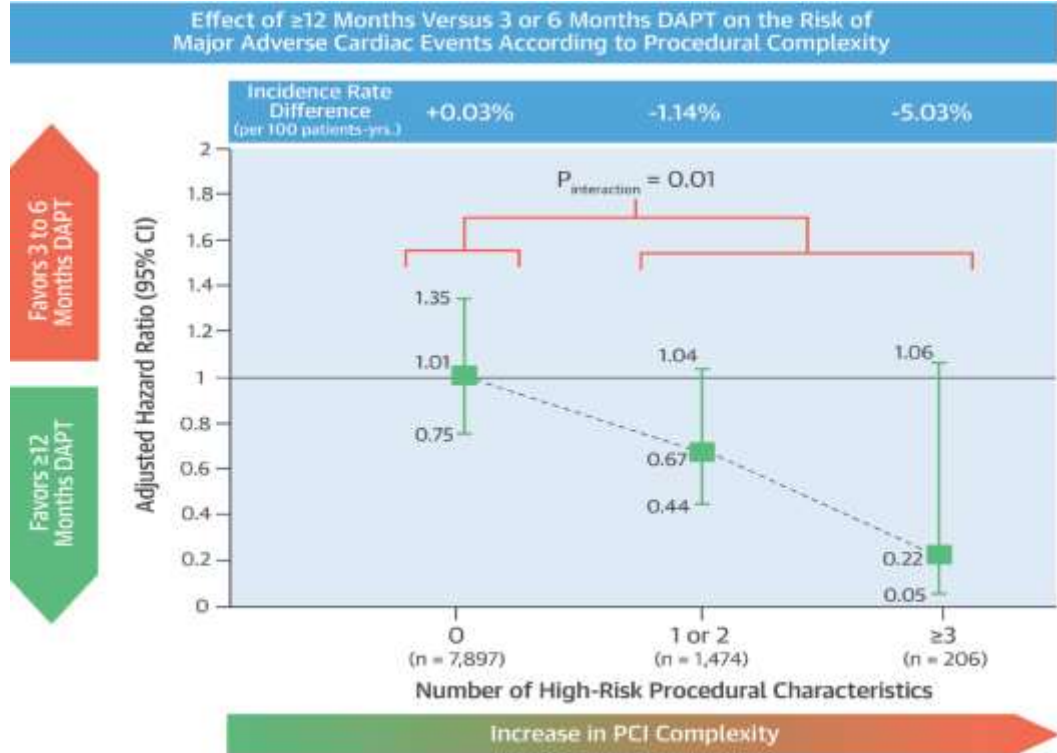
Hahn et al. Lancet 2018.

Anatomical Factors: Coronary Complexity

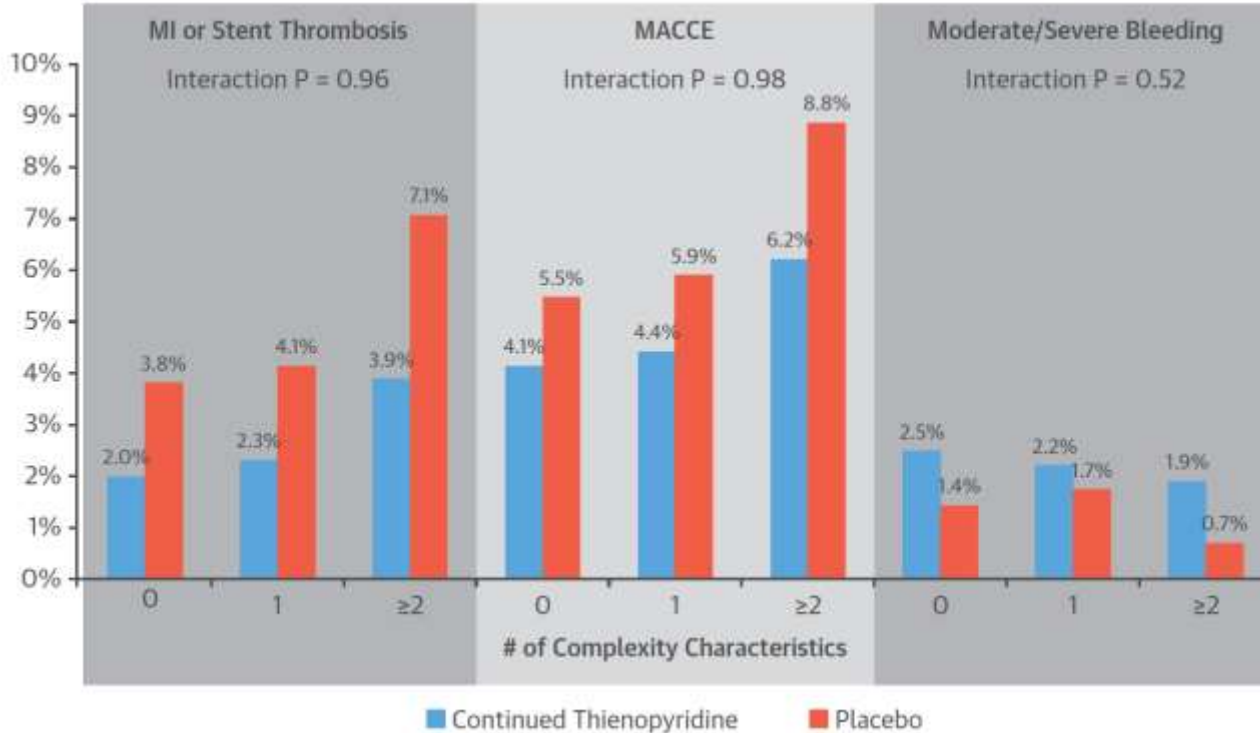
Pooled analysis of 6 RCTs
 Comparing 3 to 6 months DAPT
 Vs. ≥ 12 months DAPT

Complex Features:

- 3 vessels treated
- ≥ 3 stents placed
- ≥ 3 lesions treated
- Bifurcation with 2 stents
- Total stent length > 60 mm
- CTO



Lesion Complexity and Outcomes of Extended Dual Antiplatelet Therapy After Percutaneous Coronary Intervention



My takeaway:

Coronary complexity should influence DAPT duration most within 1st year of PCI esp among lower bleeding risk patients.

Thereafter, it likely matters much less, and is superseded by other clinical risk factors

How Should We Give Shorter vs. Longer DAPT?

■ Short DAPT – Bleeding risk exceeds ischemic

- Do we give DAPT for 1 month? 3 months?
- Discontinue the P2Y12 inhibitor at the end or discontinue ASA?
- Which P2Y12 inhibitor do we use?

■ Longer DAPT - Ischemic risk exceeds bleeding

- Do we give DAPT for 12 months? 24 months? 30 months? Indefinite?
- Discontinue the P2Y12 inhibitor at the end or discontinue ASA? Lower the dose of P2Y12?
- Which P2Y12 inhibitor do we use?



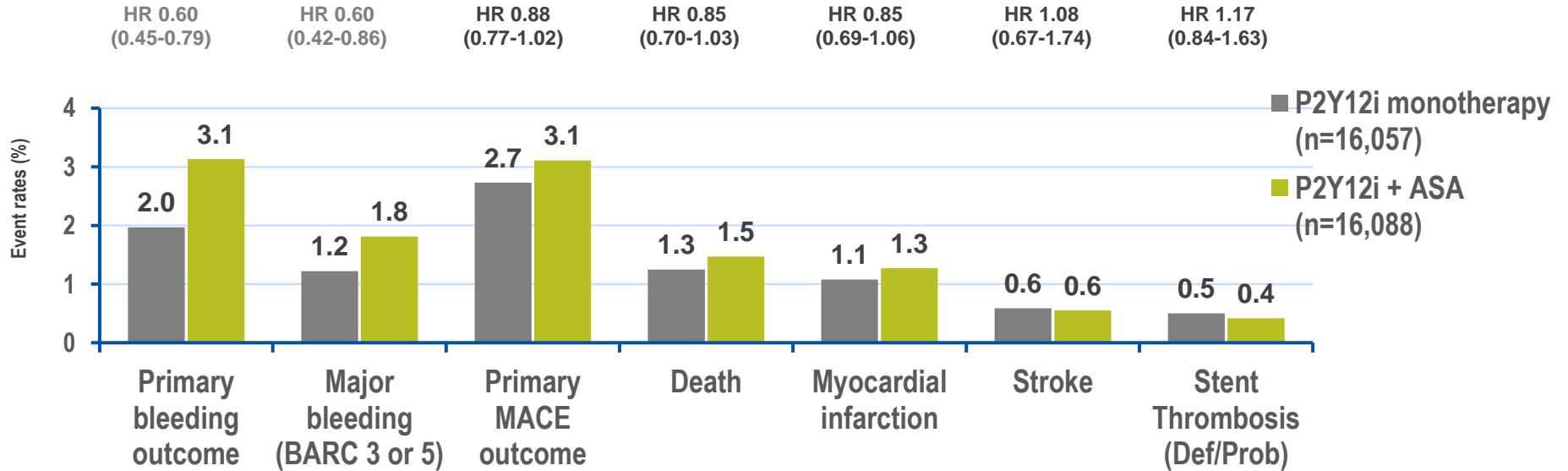
Meta-Analysis

Randomized short DAPT trials included

Trial	Blind	Intervention	Control	Follow-up
GLOBAL-LEADERS	Open label	Ticagrelor monotherapy after month 1	Clopidogrel (stable CAD) or ticagrelor (ACS) + ASA 75-100mg daily	12 months
SMART CHOICE	Open label	Any P ₂ Y ₁₂ i monotherapy after month 3	Any P ₂ Y ₁₂ i + ASA 81-200mg daily after month 1	12 months
STOPDAPT 2	Open label	Clopidogrel monotherapy after month 1	Clopidogrel + ASA 75-100mg daily	12 months
TWILIGHT	Double blind	Ticagrelor monotherapy after month 3	Ticagrelor + ASA 81-100mg daily	15 month (randomized at month 3)
TICO	Open label	Ticagrelor monotherapy after month 3	Ticagrelor + ASA 100mg daily	12 months

Meta-Analysis

Clinical outcomes



Conclusions

- The cliché holds true: there is no one size fits all for DAPT strategies.
- Shortening duration in stable PCI likely does not meaningfully increase ischemic events, nor decrease bleeding events in low risk patients
- Use tools to identify HBR patients most likely to benefit from short duration
- Remember that many patients are not HBR, and will still benefit from longer durations of DAPT, particularly ACS patients and high DAPT score.
- Within these broad recommendations, there are still many different approaches clinicians might take.





Beth Israel Deaconess
Medical Center

Richard A. and Susan F.
Smith Center for Outcomes Research
in Cardiology

Thank you!

E: ryeh@bidmc.harvard.edu



@rwyeh

