NOACs after PCI

Kareem Mahmoud, MD
Cairo University

Anticoagulation after PCI

- Incidence of AF in AMI: 6-21%[1]
- LV thrombus is detected in 4% of STEMI patients treated with primary PCI[2]
- The incidence of bleeding in patients with triple therapy: 15.7%[3]

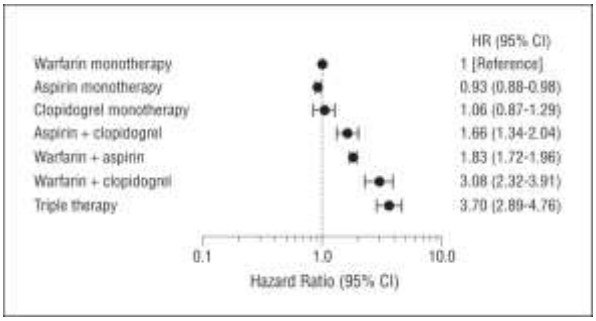
1. Schmitt, Joern, et al. *European heart journal* 30.9 (2008): 1038-1045
2. Gianstefani, Silvia, et al. *American Journal of Cardiology* 113.7 (2014): 1111-1116
3. Hansen, Morten L., et al. *Archives of internal medicine* 170.16 (2010): 1433-1441

The JAMA Network

From: **Risk of Bleeding With Single, Dual, or Triple Therapy With Warfarin, Aspirin, and Clopidogrel in Patients With Atrial Fibrillation**

Arch Intern Med. 2010;170(16):1433-1441. doi:10.1001/archinternmed.2010.271

Bleeding: fatal and non fatal

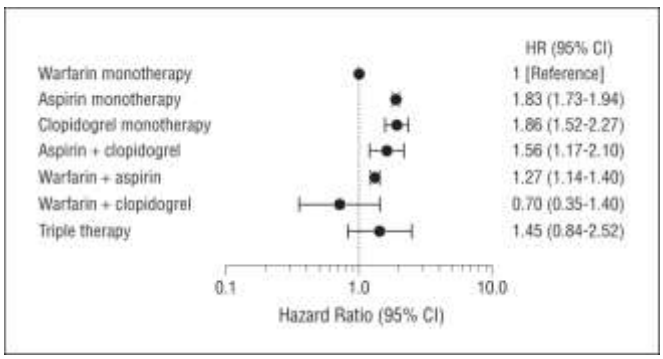


The JAMA Network

From: **Risk of Bleeding With Single, Dual, or Triple Therapy With Warfarin, Aspirin, and Clopidogrel in Patients With Atrial Fibrillation**

Arch Intern Med. 2010;170(16):1433-1441. doi:10.1001/archinternmed.2010.271

Ischemic stroke: fatal and non fatal



Can NOACs be safer substitute for Warfarin?

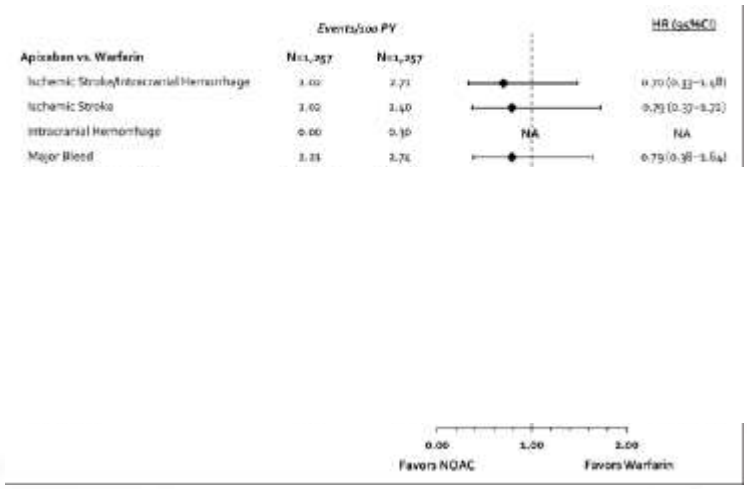
Meta-analysis of NOACs trials

- ARISTOTLE
- ENGAGE AF
- ROCKET AF
- RE-LY
- Phase-II trials

- NOACs were superior to Warfarin for prevention of composite stroke and systemic embolism
- Significant reduction in mortality

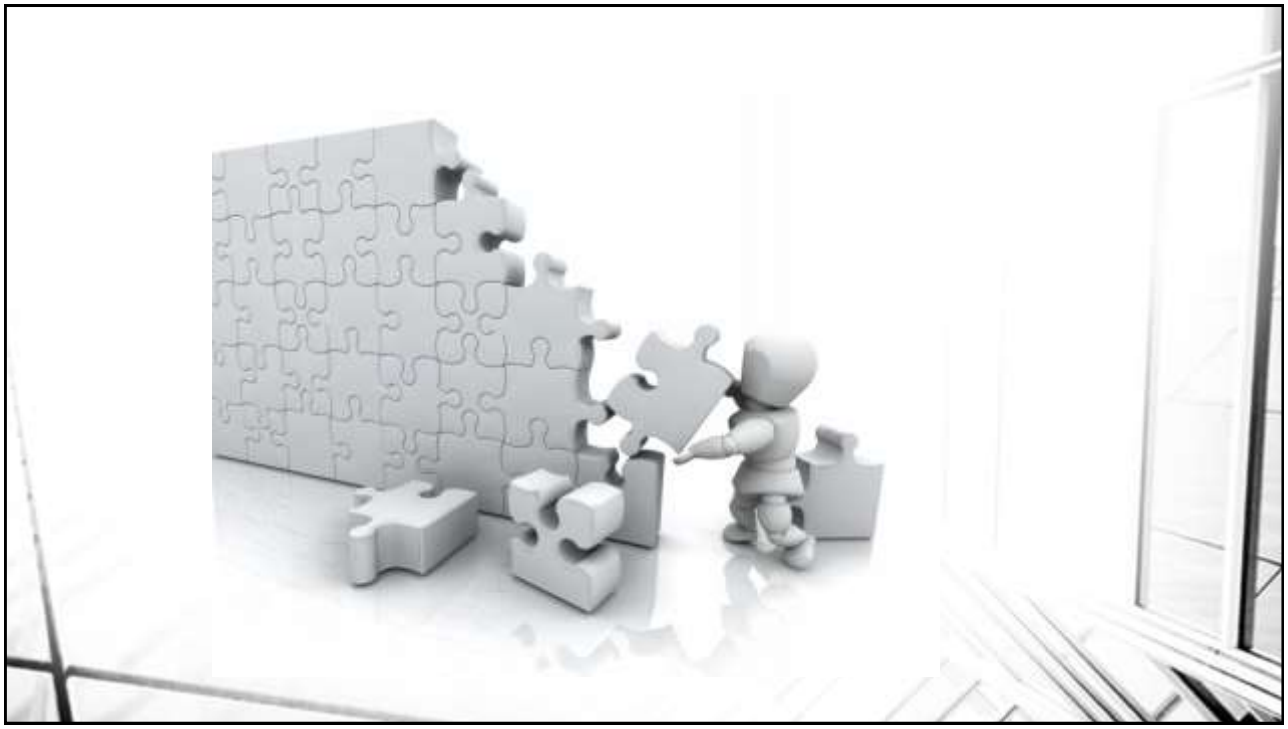
Hicks, Tim, Fiona Stewart, and Anne Eisinga. *Open heart* 3.1 (2016): e000279

NOACs in the US MARKETSCAN database

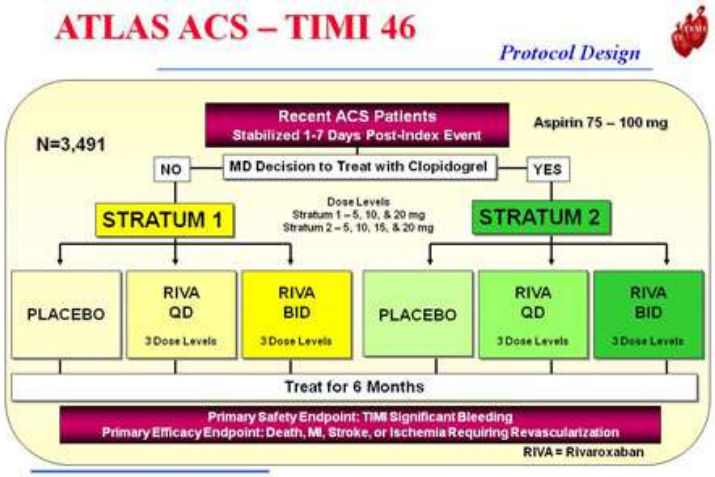


Coleman, Craig I., et al. *Stroke* 48.8 (2017): 2142-2149.

Can we safely and effectively use NOACs in post-PCI patients?

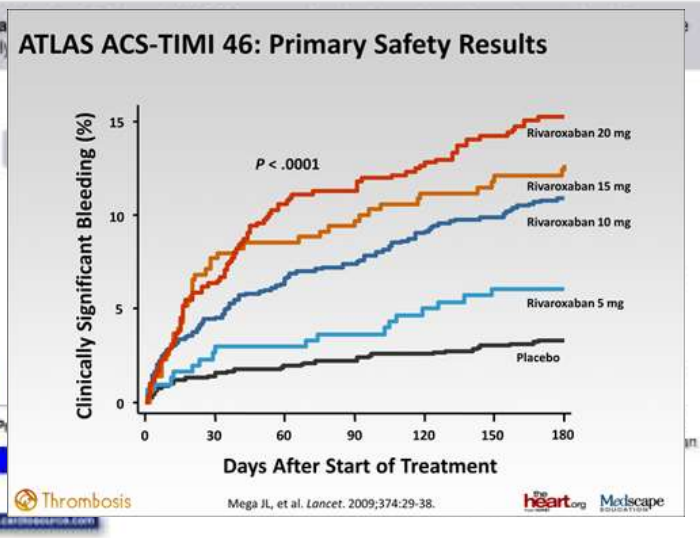


ATLAS ACS-TIMI 46

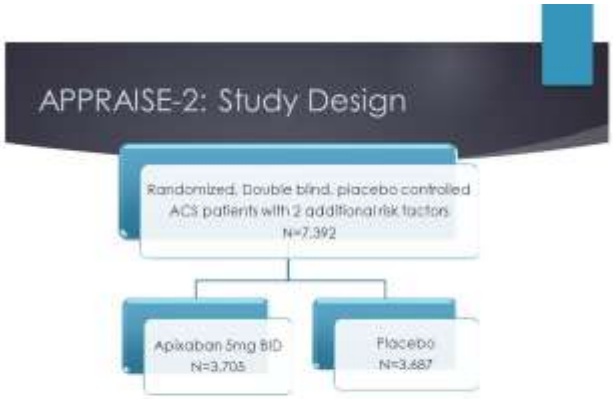


Mega, J. L., et al. *The Lancet* 374.9683 (2009): 29-38.

ATLAS ACS-TIMI 46



APPRAISE-2: Study Design



Primary Efficacy Endpoint: Cardiovascular death, MI or stroke
Primary Safety Endpoint: TIMI Major bleeding

Median Duration Follow up = 241 days (terminated early)

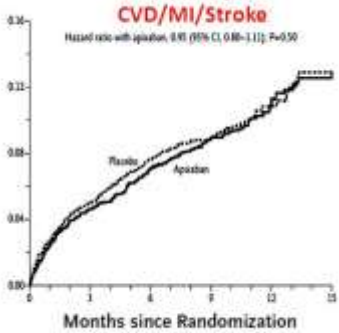
Alexander JH. NEJM. 2011;367:699-708.

Apixaban with Antiplatelet therapy after Acute Coronary Syndrome (APPRAISE-2)

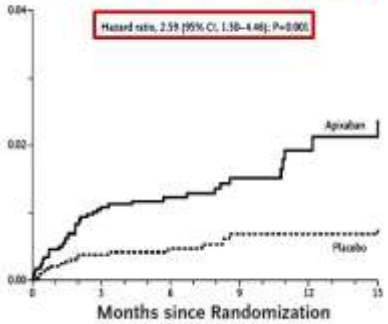
- Randomized, double-blind controlled clinical trial comparing apixaban, at dose of 5 mg twice daily with placebo in addition to standard antiplatelet therapy in pts with a recent ACS and at least 2 additional RF for recurrent ischemic events

RESULTS
The trial was terminated prematurely after recruitment of 7392 patients because of an increase in major bleeding events with apixaban in the absence of a counterbalancing reduction in recurrent ischemic events. With a median follow-up of 241 days,

Probability of CVD/MI/Stroke

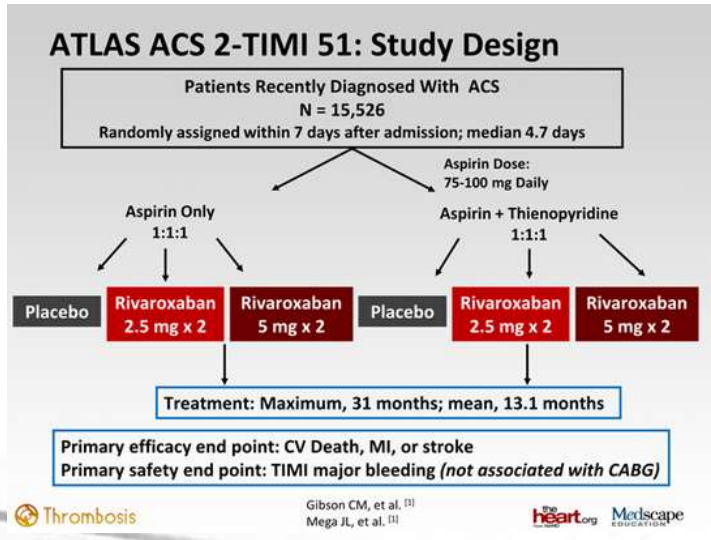


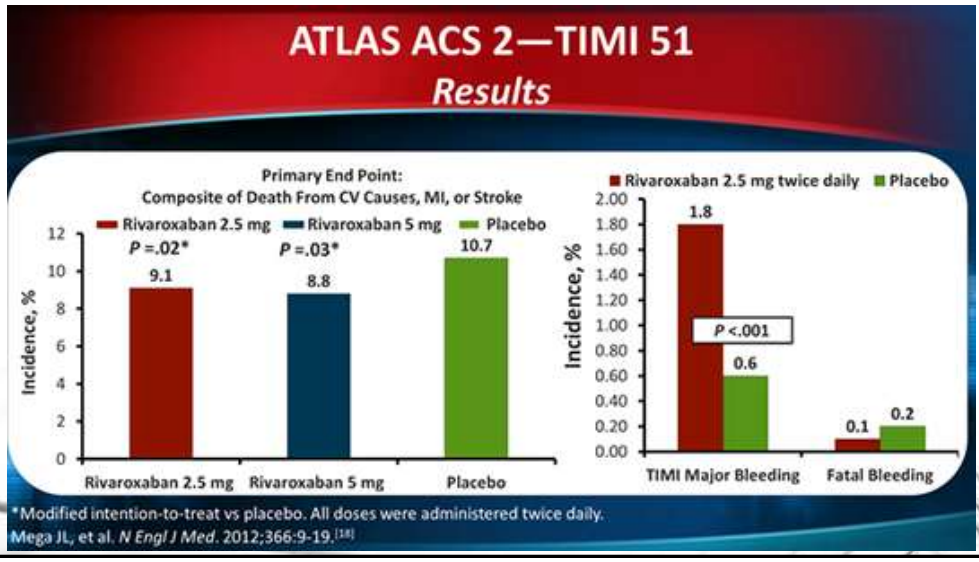
Probability of TIMI major bleeding



N Engl J Med 2011;365:699-708.

ATLAS ACS 2-TIMI 51

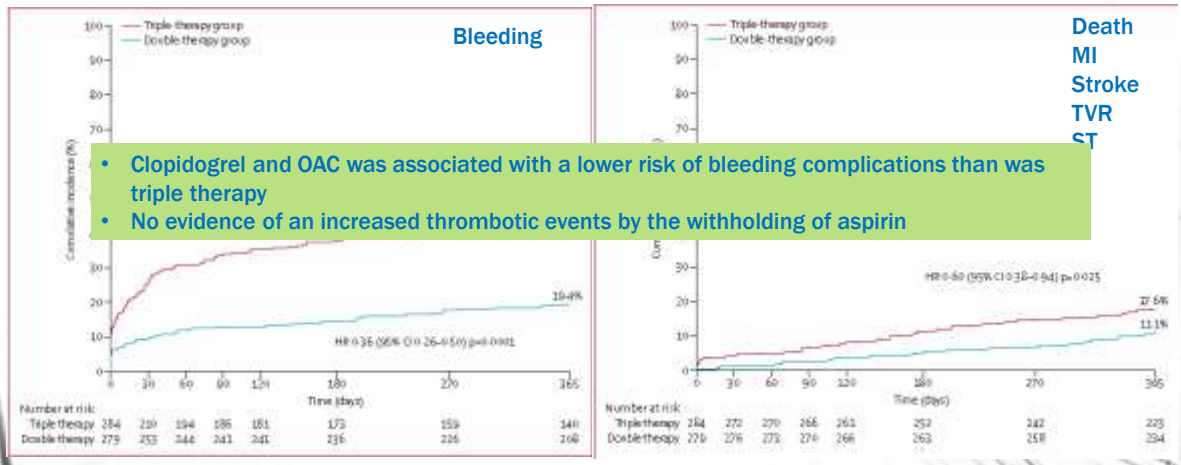




ATLAS ACS 2-TIMI 51

- Rivaroxaban reduced the risk of death from cardiovascular causes, MI, or stroke in patients with ACS
- This was associated with increased risk of bleeding with no significant increase in the rate of fatal bleeding
- The addition of very low-dose anticoagulation with rivaroxaban (2.5 mg twice daily) may represent a new treatment strategy in patients with a recent ACS

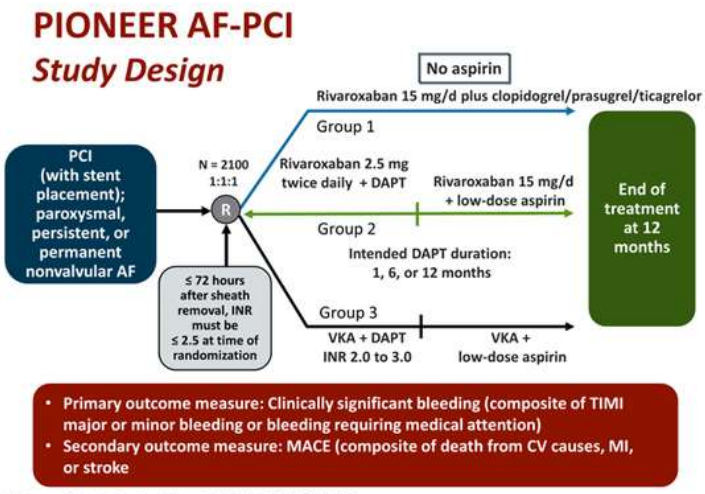
WOEST



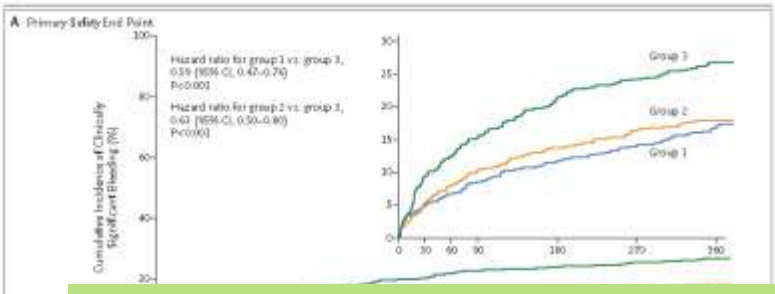
- Clopidogrel and OAC was associated with a lower risk of bleeding complications than was triple therapy
- No evidence of an increased thrombotic events by the withholding of aspirin

Dewilde, Willem JM, et al. *The Lancet* 381.9872 (2013): 1107-1115.

PIONEER AF-PCI



Gibson CM, et al. *Am Heart J.* 2015;169:472-478.



- Study doses:
  - Low-dose rivaroxaban (15 mg once daily) + P2Y12 inhibitor for 12 months or
  - Very-low dose rivaroxaban (2.5 mg twice daily) + DAPT for 1, 6, or 12 months
- Both were associated with a lower bleeding than was standard therapy with a vitamin K antagonist + DAPT for 1, 6, or 12 months
- The three groups had similar efficacy rates
- The study was underpowered (broad CI- lower number of secondary events)

Gibson, C. Michael, et al. *New England Journal of Medicine* 375.25 (2016): 2423-2434

RE-DUAL PCI (Dabigatran)

1ry endpoint: first major or clinically relevant nonmajor bleeding event

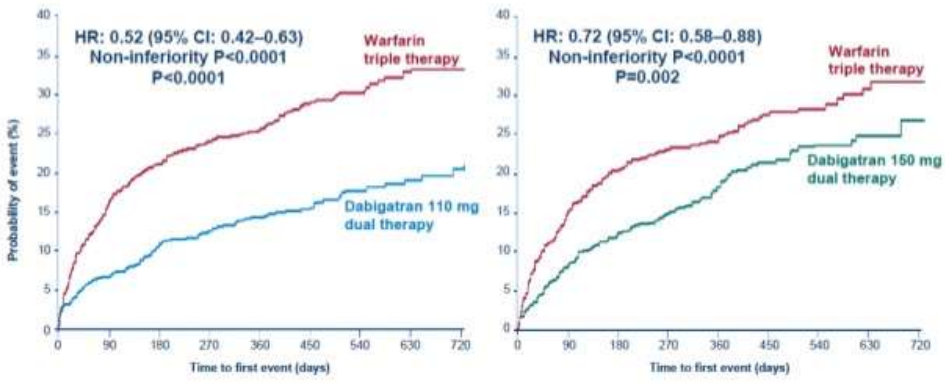
2ry endpoint: composite of TE events (MI, stroke, or SE), death, or unplanned revascularization

- Triple W+ DAPT
- D 150+ P2Y12 inh.
- D 110+ P2Y12 inh.

Cannon, Christopher P., et al. *New England Journal of Medicine* 377.16 (2017): 1513-1524.

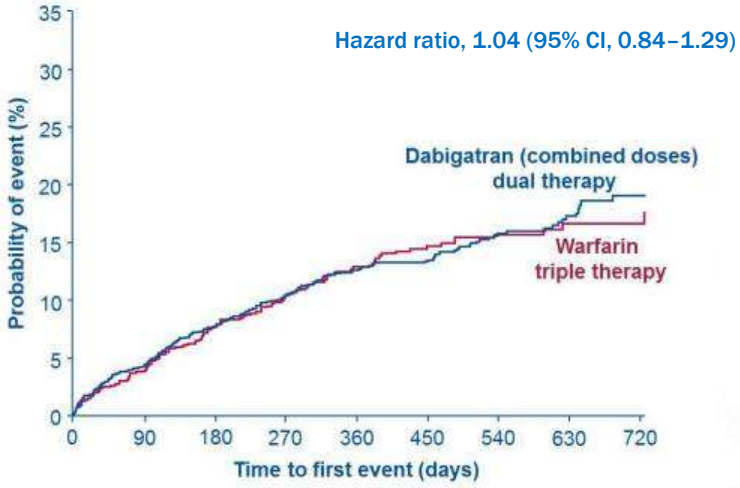
Primary Endpoint: Time to first ISTH major or clinically relevant non-major bleeding event

RE-DUAL PCI



Cannon, Christopher P., et al. *New England Journal of Medicine* 377.16 (2017): 1513-1524.

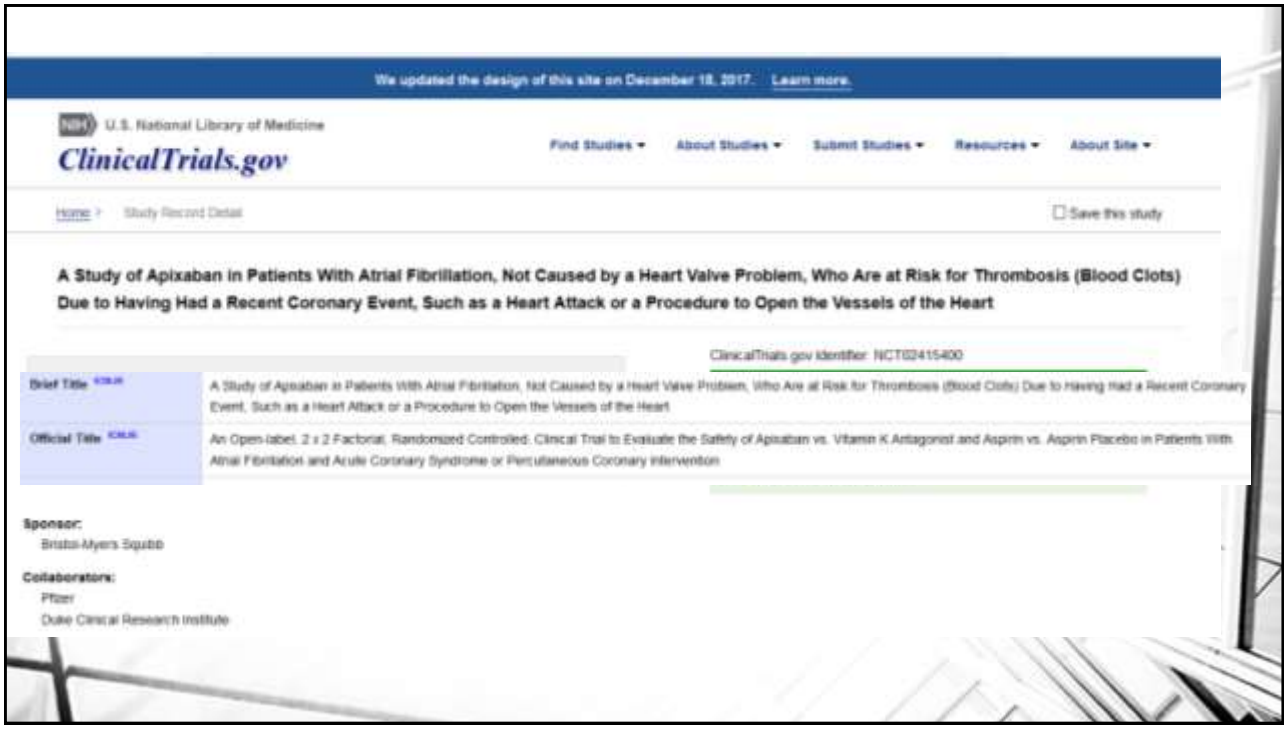
2ry endpoint

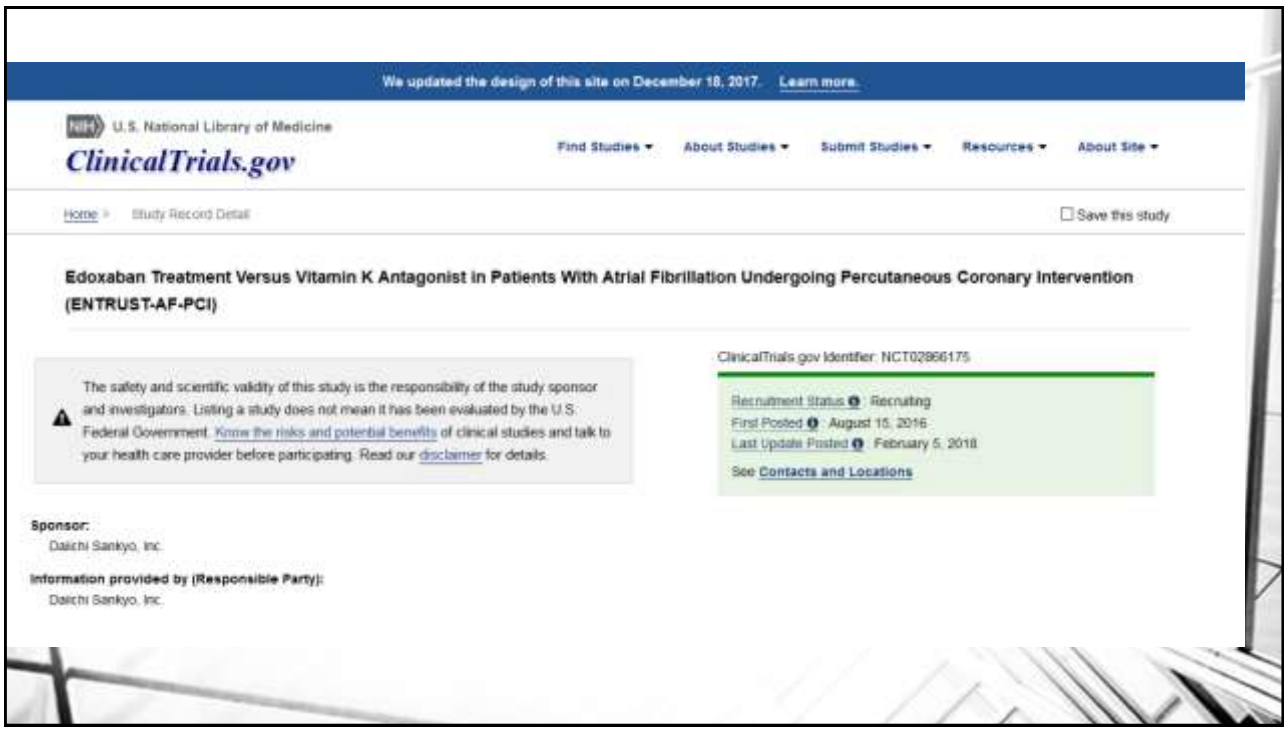


Cannon, Christopher P., et al. *New England Journal of Medicine* 377.16 (2017): 1513-1524.

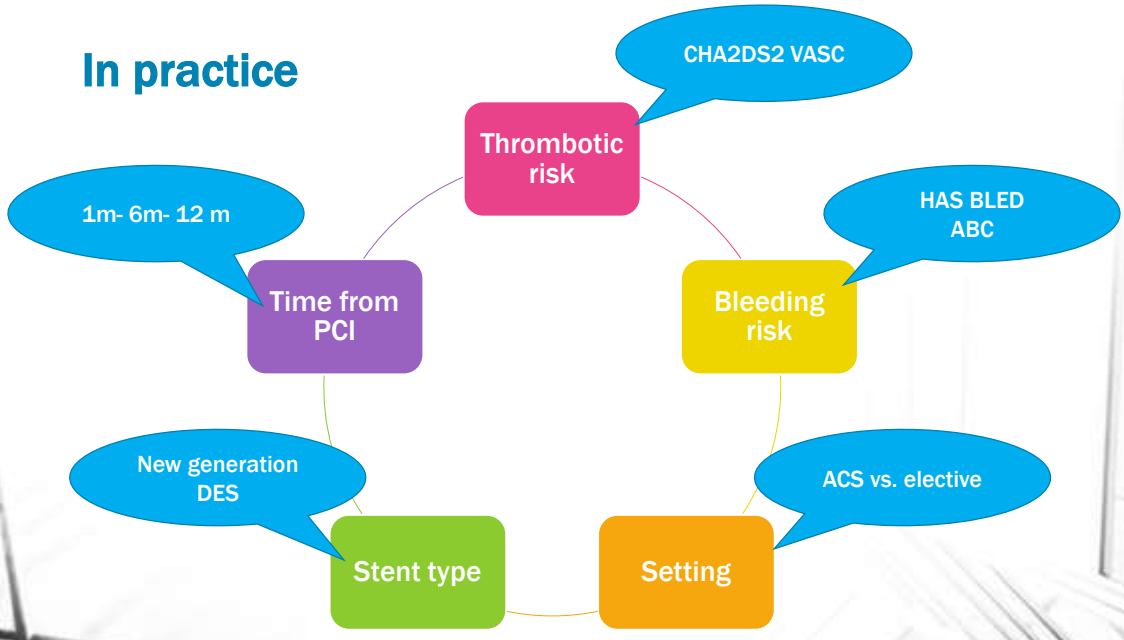
RE-DUAL PCI

- Dabigatran and P2Y12 inhibitor as compared with triple therapy with warfarin, P2Y12 inhibitor, and aspirin:
  - Lower risk of bleeding
  - Noninferior with respect to the rate of thromboembolic events.
- This was achievable with Each of the two doses of dabigatran (110 mg bid and 150 mg bid)

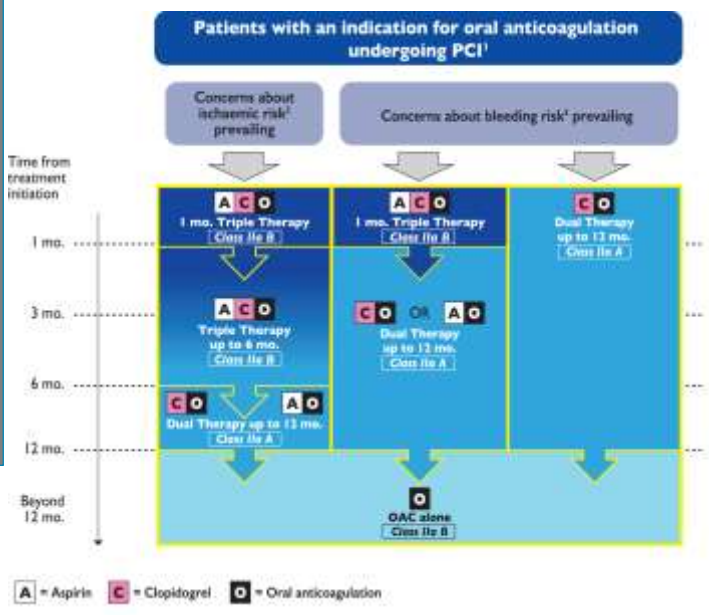

We updated the design of this site on December 18, 2017. Learn more.
U.S. National Library of Medicine
ClinicalTrials.gov
Find Studies
About Studies
Submit Studies
Resources
About Site
Home > Study Record Detail
Save this study
A Study of Apixaban in Patients With Atrial Fibrillation, Not Caused by a Heart Valve Problem, Who Are at Risk for Thrombosis (Blood Clots) Due to Having Had a Recent Coronary Event, Such as a Heart Attack or a Procedure to Open the Vessels of the Heart
ClinicalTrials.gov Identifier: NCT02415400
Brief Title
A Study of Apixaban in Patients With Atrial Fibrillation, Not Caused by a Heart Valve Problem, Who Are at Risk for Thrombosis (Blood Clots) Due to Having Had a Recent Coronary Event, Such as a Heart Attack or a Procedure to Open the Vessels of the Heart
Official Title
An Open-label, 2 x 2 Factorial, Randomized Controlled, Clinical Trial to Evaluate the Safety of Apixaban vs. Vitamin K Antagonist and Aspirin vs. Aspirin Placebo in Patients With Atrial Fibrillation and Acute Coronary Syndrome or Percutaneous Coronary Intervention
Sponsor:
Bristol-Myers Squibb
Collaborators:
Pfizer
Duke Clinical Research Institute


We updated the design of this site on December 18, 2017. Learn more.
U.S. National Library of Medicine
ClinicalTrials.gov
Find Studies
About Studies
Submit Studies
Resources
About Site
Home > Study Record Detail
Save this study
Edoxaban Treatment Versus Vitamin K Antagonist in Patients With Atrial Fibrillation Undergoing Percutaneous Coronary Intervention (ENTRUST-AF-PCI)
The safety and scientific validity of this study is the responsibility of the study sponsor and investigators. Listing a study does not mean it has been evaluated by the U.S. Federal Government. Know the risks and potential benefits of clinical studies and talk to your health care provider before participating. Read our disclaimer for details.
ClinicalTrials.gov Identifier: NCT02866175
Recruitment Status : Recruiting
First Posted : August 15, 2016
Last Update Posted : February 5, 2018
See Contacts and Locations
Sponsor:
Daiichi Sankyo, Inc.
Information provided by (Responsible Party):
Daiichi Sankyo, Inc.

In practice



- ACS
- Prior ST
- Stenting last remaining coronary artery
- Diffuse MVD esp. DM
- CKD
- ≥ 3 stents
- ≥ 3 lesions
- Bifurcation with 2 stents
- Total stent length > 60 mm
- CTO



- HAS BLED
- ABC

Eur Heart J. 2017;39(3):213-260. doi:10.1093/eurheartj/ehx419

Strategies to decrease bleeding complications

- Scores
- Short triple therapy: dual therapy may be considered
- NOACs instead of VKA, lower doses of NOACs
- If VKA, lower INR target
- Clopidogrel is P2Y12 inhibitor of choice
- Low dose ASA (≤100 mg/d)
- Routine use of PPI

Conclusions

- Anticoagulation in patients post-PCI needs critical balance between thrombotic and bleeding risks
- There is growing evidence that supports the use of NOACs in post-PCI patients needing anticoagulation
- Dual anti-thrombotics may be alternative to triple therapy in these patients to decrease bleeding events
- The studied NOACs doses in clinical trials are:
  - Rivaroxiban 15 mg qd + P2Y12
  - Rivaroxiban 2.5 mg bid + P2Y12 + ASA
  - Dabigatran 110 mg bid or 150 mg bid + P2Y12
- The duration of triple therapy should be reduced as much as possible to decrease bleeding events


To be continued...