

**Session (73): NOACs and Emerging Indications: What does the Future Hold?**  
***Rivaroxiban in ACS : Is It Effective?***

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**Current Indications for “NOACs”**

1.

- **Non-valvular AF:** Stroke and SE prevention

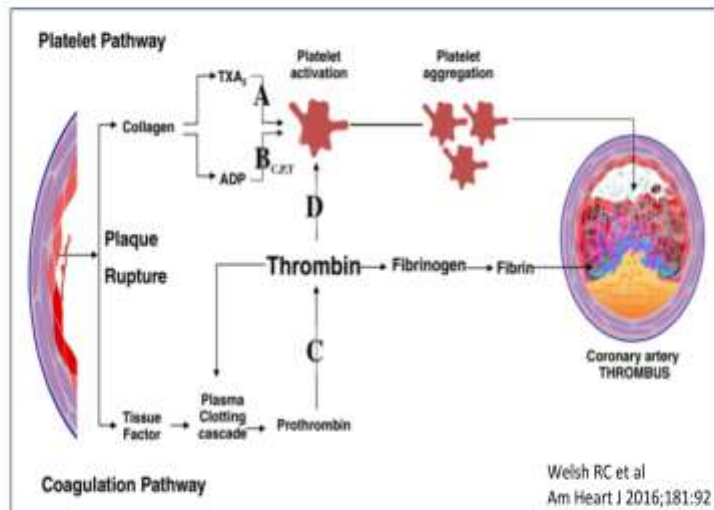
2.

- **VTE:** Treatment / prophylaxis

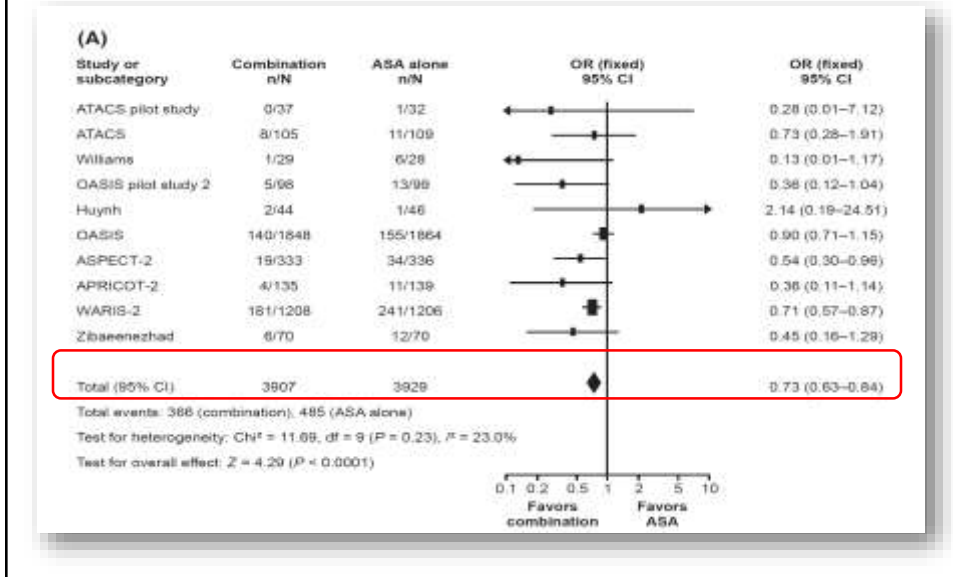
## Expanding NOACS Indications

- Cardioversion
- Ablation
- Hospitalized Cancer
- Ambulatory Cancer
- Peripheral arterial disease
- **Acute coronary syndrome**
- **Chronic stable angina**
- Valvular AF
- Heart failure
- LV thrombus
- Pulmonary hypertension
- Heparin-induced thrombocytopenia
- Anti-phospholipid antibody syndrome
- Patients with VTE and cirrhosis
- Cerebral venous thrombosis
- Splanchnic vein thrombosis

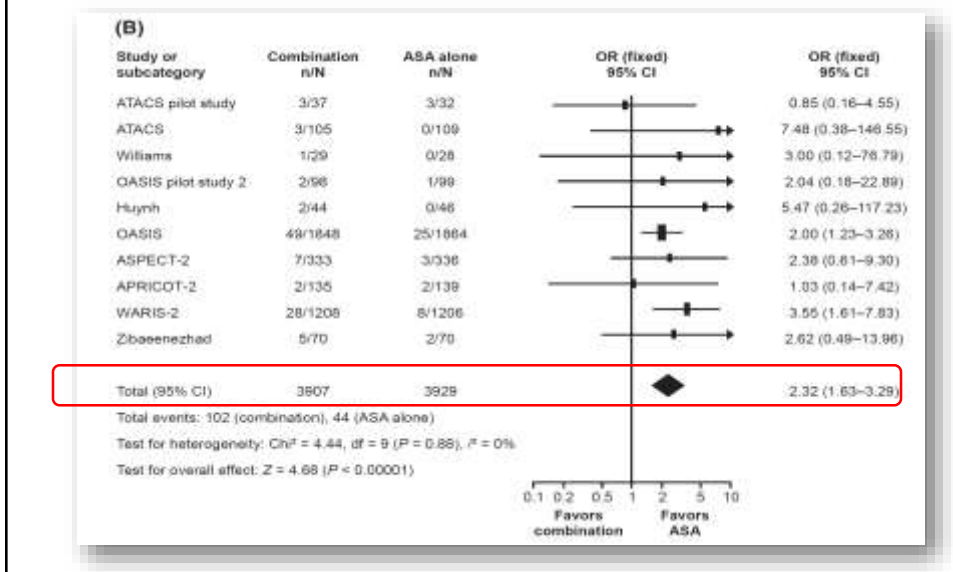
## DUAL PATHWAYS OF CLOTTING

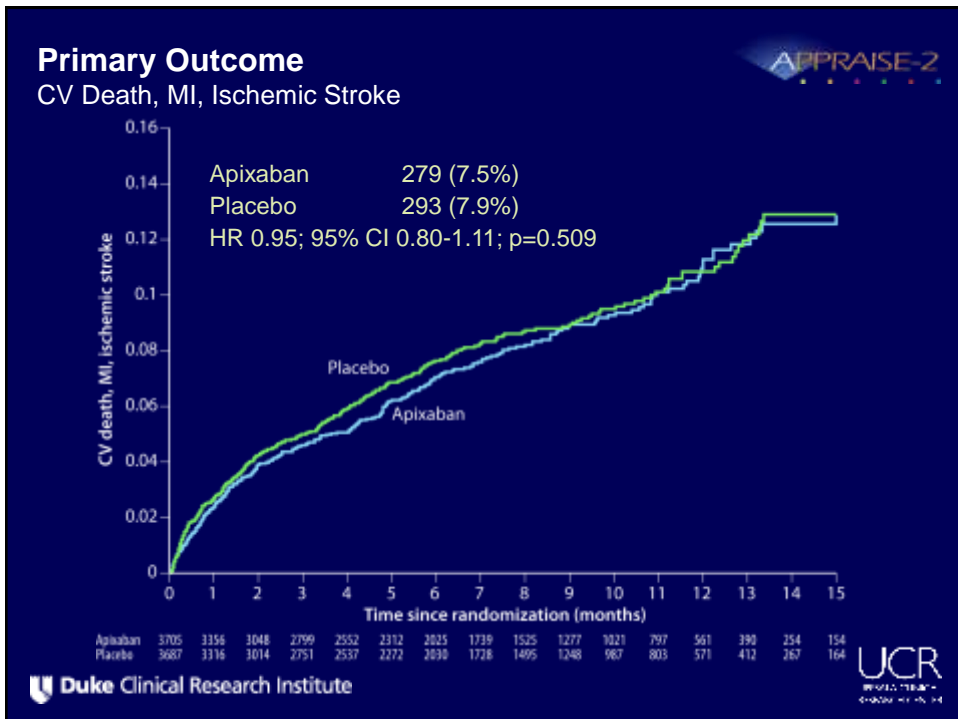
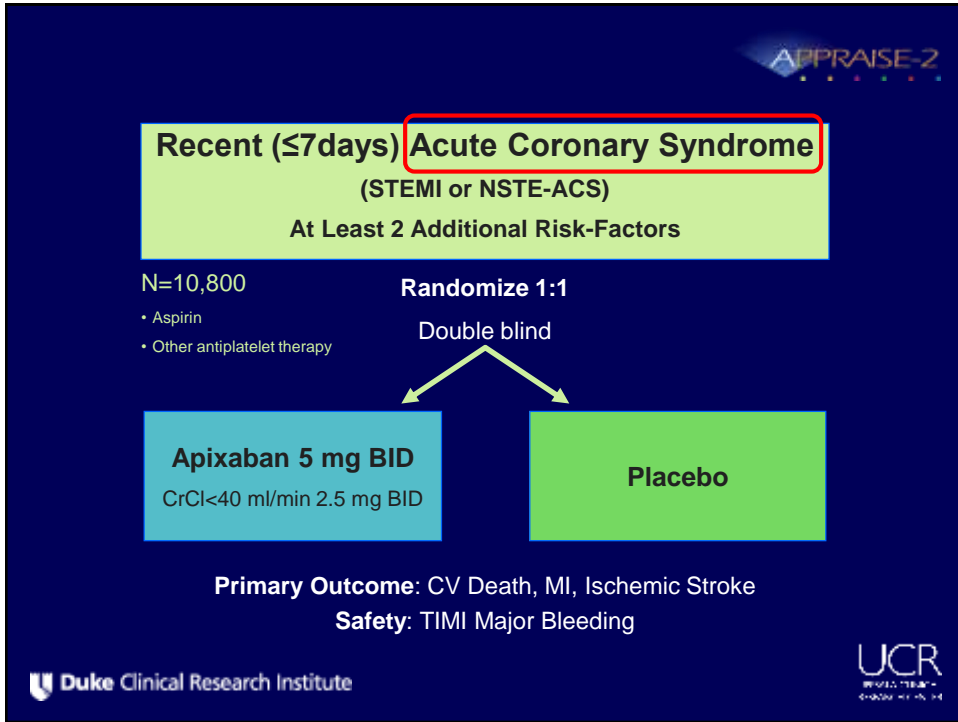


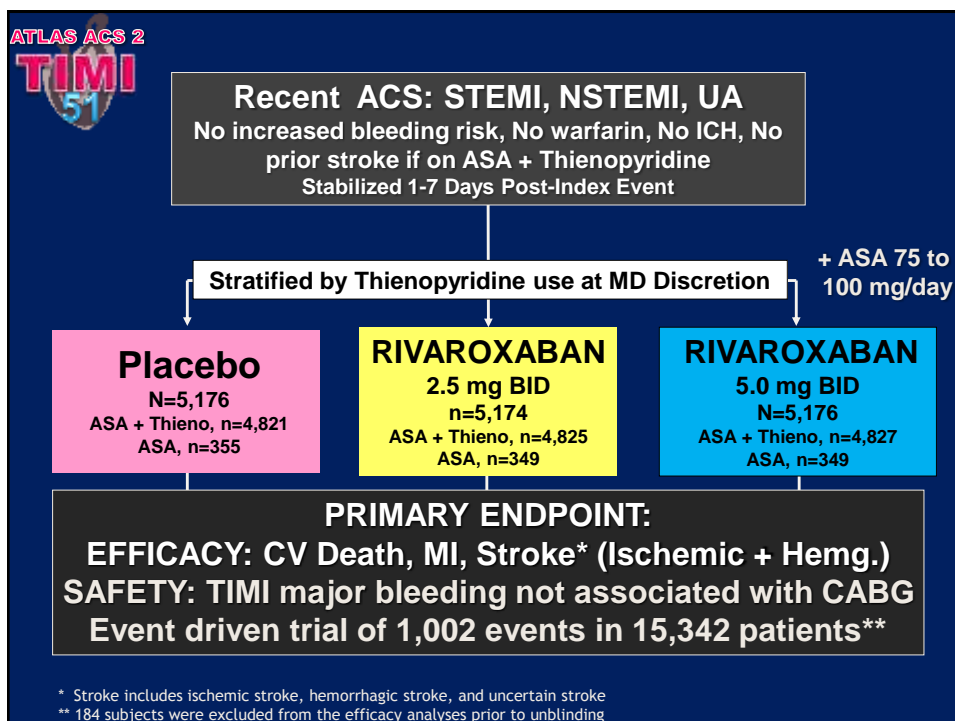
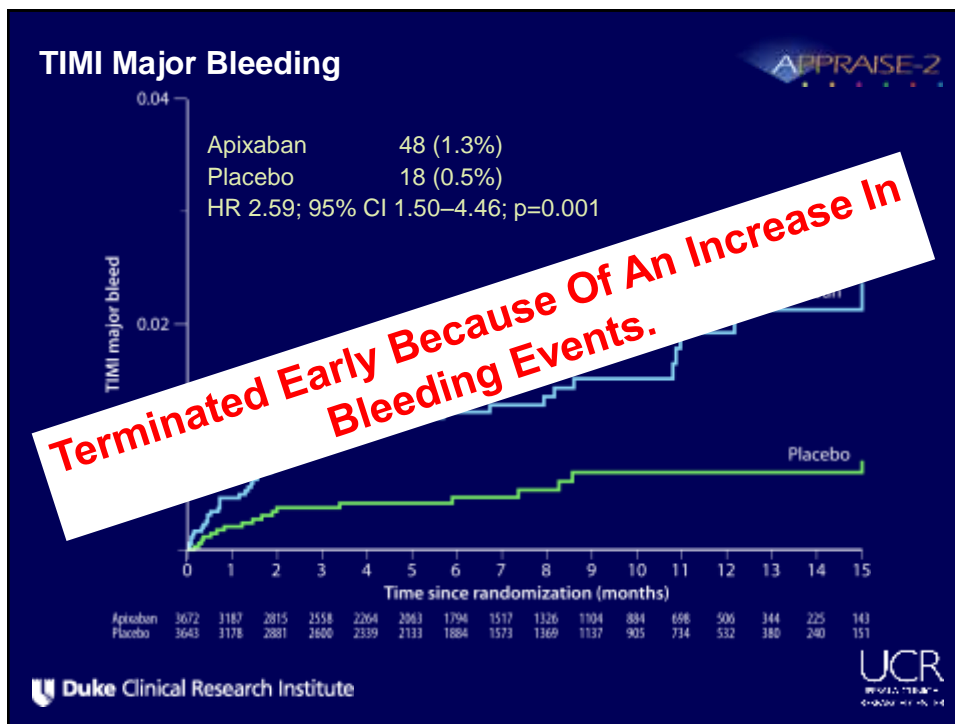
(A) major adverse events (all-cause death, nonfatal myocardial infarction, nonfatal thromboembolic stroke)

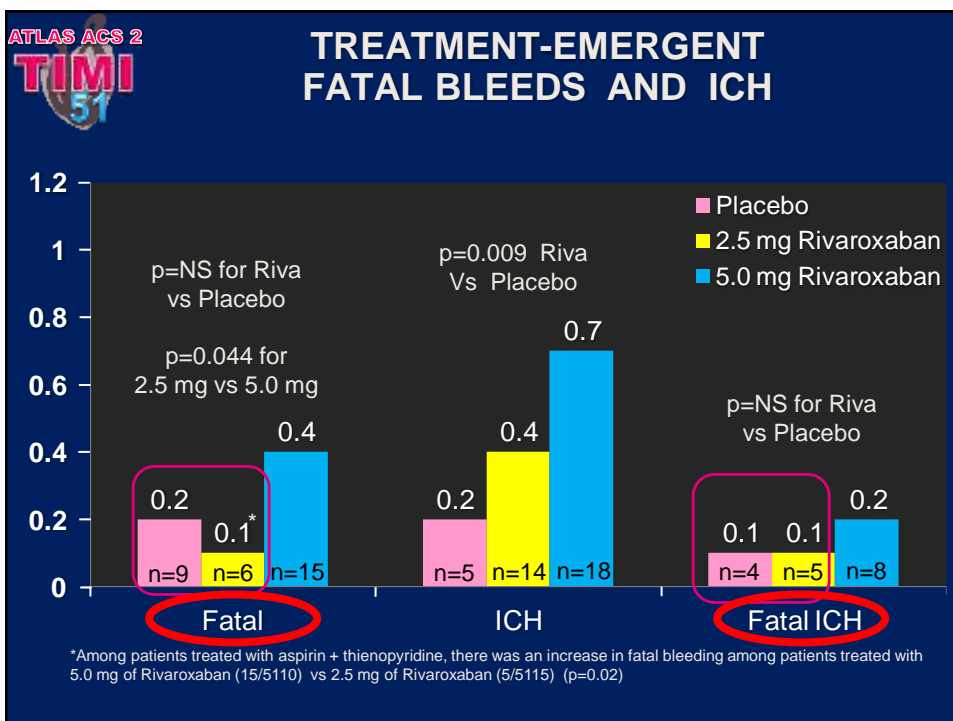
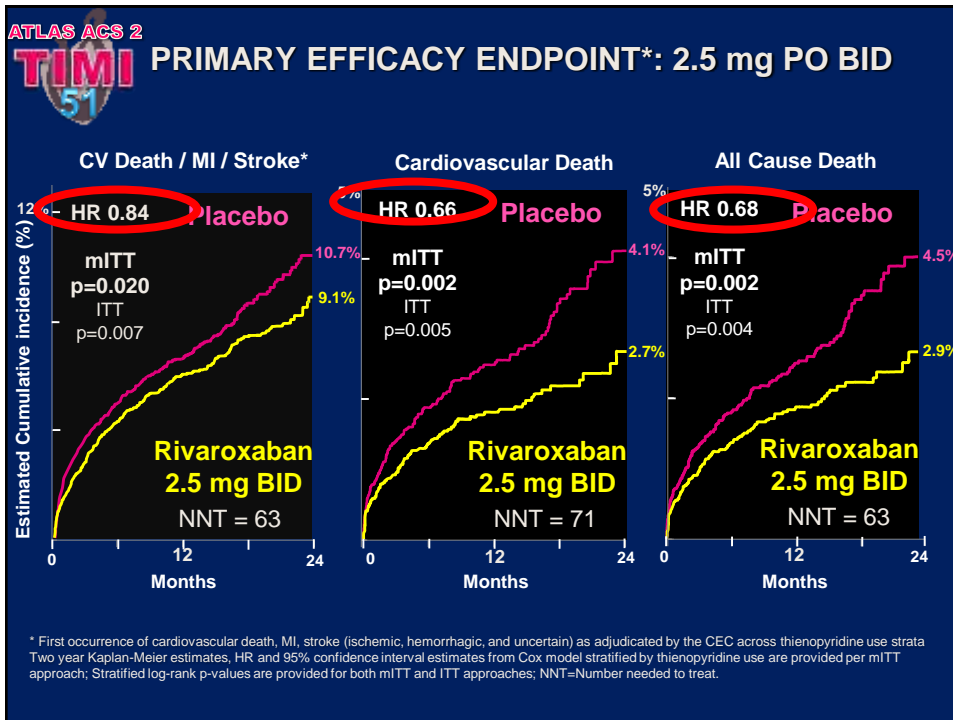


(B) major bleeding events for moderate-intensity VKA plus ASA versus ASA alone









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European Heart Journal (2017) 00, 1–46  
doi:10.1093/eurheartj/ehz293

ESC GUIDELINES

## 2017 ESC Guidelines for the management of acute myocardial infarction in patients presenting with ST-segment elevation

In low bleeding-risk patients who receive aspirin and clopidogrel, low-dose rivaroxaban (2.5 mg twice daily) may be considered.<sup>33B</sup>

IIb B

**Currently, the US has not approved any NOACs for ACS treatment and these agents are not recommended in the STEMI or NSTEMI-ACS guidelines [Amsterdam *et al.* 2014; O’Gara *et al.* 2013].**


### Pharmacological treatments in SCAD patients (2)

Indication	Class	Level
<b>Angina/ischæmia<sup>a</sup> relief (cont’d)</b>		
In asymptomatic patients with large areas of ischaemia (>10%) β-blockers should be considered.	IIa	C
In patients with vasospastic angina, calcium channel blockers and nitrates should be considered and beta-blockers avoided.	IIa	B
<b>Event prevention</b>		
Low-dose aspirin daily is recommended in all SCAD patients.	I	A
Clopidogrel is indicated as an alternative in case of aspirin intolerance.	I	B
Statins are recommended in all SCAD patients.	I	A
It is recommended to use ACE inhibitors (or ARBs) if presence of other conditions (e.g. heart failure, hypertension or diabetes).	I	A

ACE = angiotensin converting enzyme; ARB = angiotensin receptor blocker.  
<sup>a</sup>No demonstration of benefit on prognosis  
 This slide corresponds to Table 28 in the full text.

[www.escardio.org/guidelines](http://www.escardio.org/guidelines) Eur Heart J. 2013;34:2949–3003. doi:10.1093/eurheartj/ehz296

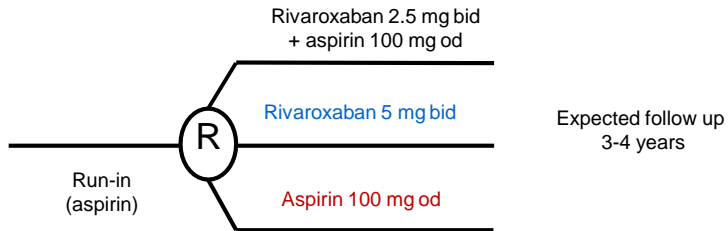
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## COMPASS design

### Chronic Stable CAD or PAD 2,200 with a primary outcome event



Run-in (aspirin) → R → 
 

- Rivaroxaban 2.5 mg bid + aspirin 100 mg od
- Rivaroxaban 5 mg bid
- Aspirin 100 mg od


 Expected follow up 3-4 years

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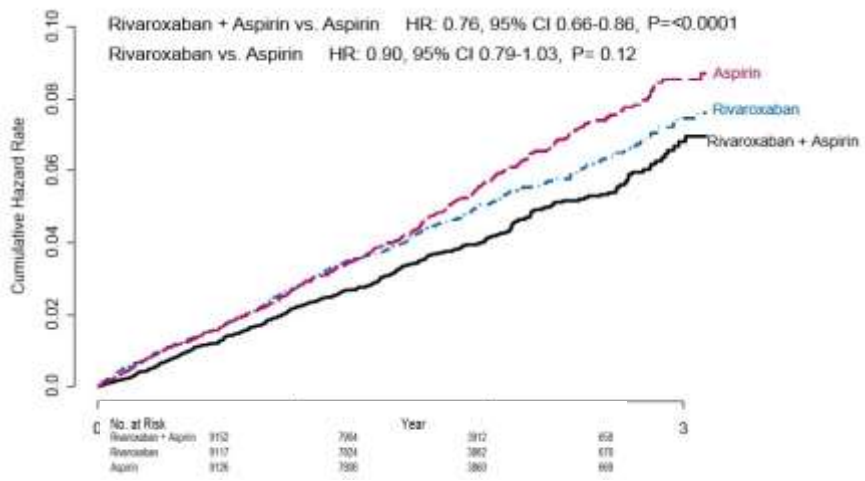


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## Primary: CV death, MI

Rivaroxaban + Aspirin vs. Aspirin HR: 0.76, 95% CI 0.66-0.86, P=<0.0001

Rivaroxaban vs. Aspirin HR: 0.90, 95% CI 0.79-1.03, P= 0.12



No. at Risk	Year	0	1	2	3
Rivaroxaban + Aspirin		912	794	512	252
Rivaroxaban		917	704	382	176
Aspirin		926	756	383	169

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## Primary components

Outcome	R + A N=9,152	A N=9,126	Rivaroxaban + Aspirin vs. Aspirin	
	N (%)	N (%)	HR (95% CI)	p
CV death	160 (1.7%)	203 (2.2%)	0.78 (0.64-0.96)	0.02
Stroke	83 (0.9%)	142 (1.6%)	0.58 (0.44-0.76)	<0.0001
MI	178 (1.9%)	205 (2.2%)	0.86 (0.70-1.05)	0.14

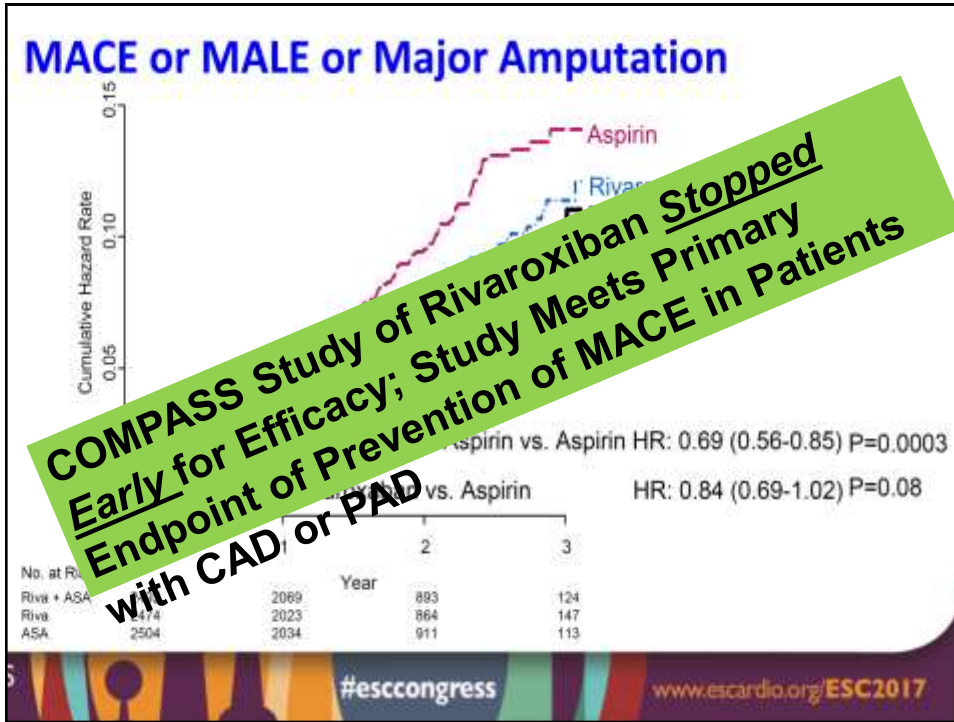
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## Major

Outcome	R + A N=9,152	R N=9,117	A N=9,126	Rivaroxaban + Aspirin vs. Aspirin		Rivaroxaban vs. Aspirin	
	N (%)	N (%)	N (%)	HR (95% CI)	P	HR (95% CI)	P
Major bleeding	288 (3.1%)	255 (2.8%)	170 (1.9%)	1.70 (1.40-2.05)	<0.0001	1.51 (1.25-1.84)	<0.0001
Fatal	15 (0.2%)	14 (0.2%)	10 (0.1%)	1.49 (0.67-3.33)	0.32	1.40 (0.62-3.15)	0.41
Non fatal ICH*	21 (0.2%)	32 (0.4%)	19 (0.2%)	1.10 (0.59-2.04)	0.77	1.69 (0.96-2.98)	0.07
Non-fatal other critical organ*	42 (0.5%)	45 (0.5%)	29 (0.3%)	1.43 (0.89-2.29)	0.14	1.57 (0.98-2.50)	0.06

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### Atherothrombotic Therapy in Coronary Artery Disease

		<u>Efficacy</u>	<u>Bleeding</u>
	ASA	++	+
<b>CURE</b>	DAPT	+++	++
Post ACS	ASA + Warf	+++	+++
<b>ATLAS-2</b>	DAPT + Riva 2.5	++++	++
Post ACS			
<b>COMPASS</b>	ASA + Riva 2.5	++++	++
Chronic CAD			

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## Relevant Questions Still To Be Addressed

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- **Which patients** should be considered for this approach?
- The **optimal time** for introducing rivaroxaban
- The requirement for and frequency of patient **monitoring**
- The potential for combining rivaroxaban with the **newer antiplatelets** plus ASA

*Thank You*