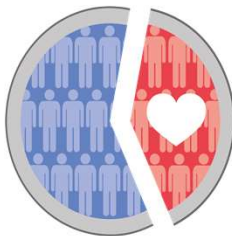


## Ticagrelor Position in ACS Management According to the Latest Guidelines

**Dr. Ahmad Separham**  
Interventional cardiologist  
Tabriz University of Medical Sciences

### Acute Coronary Syndromes & Death



CVDs cause approximately **one-third of all deaths** in the world.

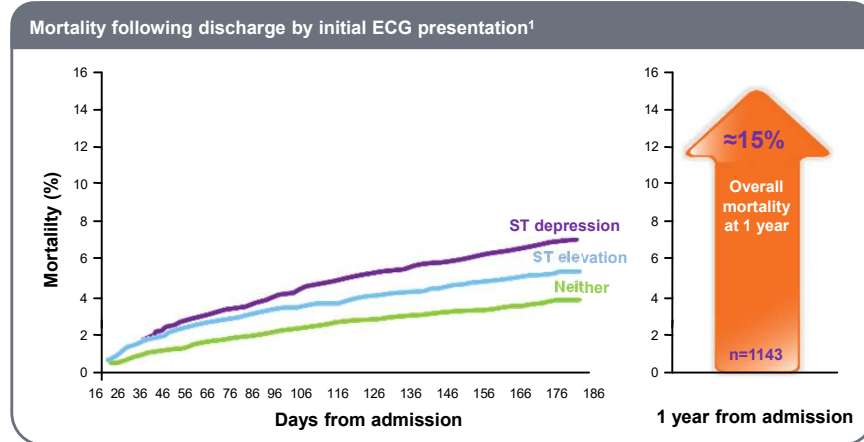
**7.5 million deaths** are estimated to be due to ischemic heart disease (IHD).

ACS and sudden death cause **most IHD-related deaths**, which represent 1.8 million deaths per year.

<https://oxfordmedicine.com/view/10.1093/med/9780198784906.001.0001/med-9780198784906-chapter-305>



## Regardless of how ACS presents, Post-discharge mortality remains high



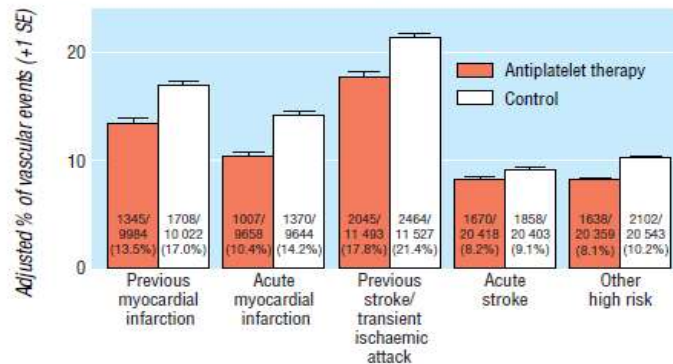
Long-term, the mortality rate rises to 15% within 12 months after the initial event. That means almost 1 in 6 patients may die within the first year of their heart attack.<sup>2</sup>

1. *Nature Clin Pract Cardiol.* 2008;5:580-589. 2. *Am Heart J.* 2007;153:29-35.



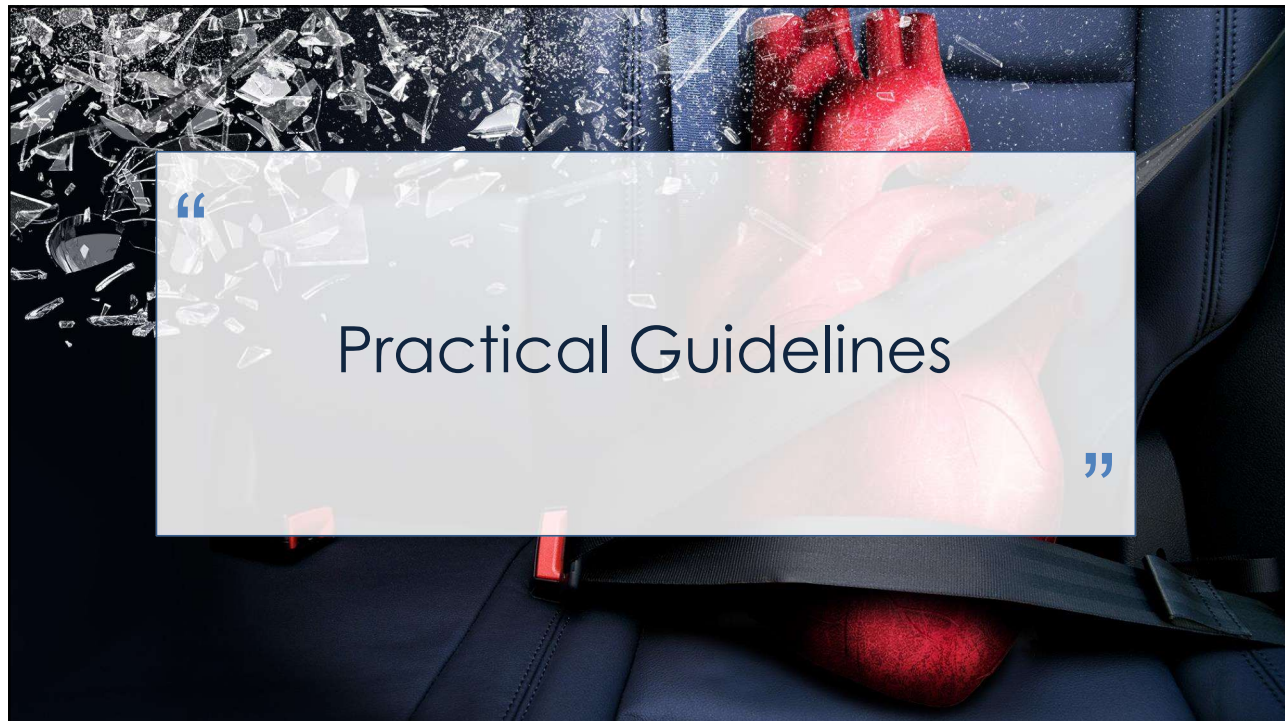
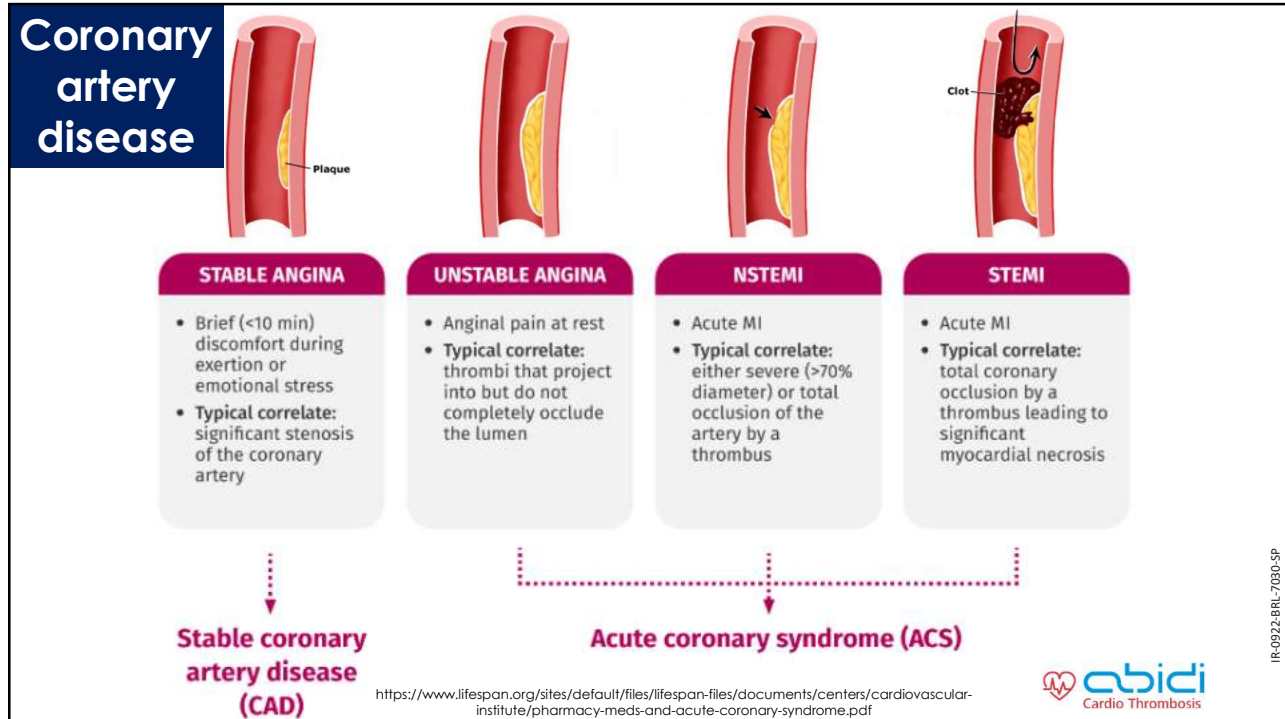
## Absolute effects of antiplatelet therapy on vascular events

Benefit per 1000 patients (SE):	36 (5)	38 (5)	36 (6)	9 (3)	22 (3)
Mean months of treatment:	27	1	29	0.7	22
P value:	<0.0001	<0.0001	<0.0001	0.0009	<0.0001



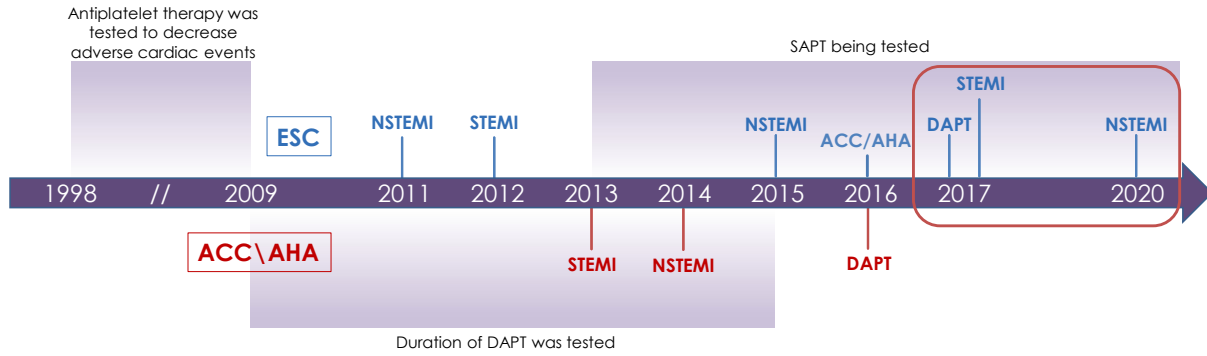
Antithrombotic Trialists' Collaboration. *BMJ* 2002; 324: 71-86.







Recent International Evidence Based Guidelines



Adapted from:  
Wien Klin Wochenschr (2016) 128:450–457  
Nature Reviews Cardiology volume 14, pages294–303 (2017)



IR-0952-BRL-7080-SP

ESC



2011 NSTEMI Guidelines

Recommendation

A P2Y12 inhibitor should be added to aspirin as soon as possible and maintained over 12 months, unless there are contraindications.

**Ticagrelor** is recommended for all patients at moderate-to-high risk of ischemic events, regardless of initial treatment strategy and including those pre-treated with clopidogrel.

Prasugrel is recommended for P2Y12-inhibitor-naïve patients (especially diabetics) in whom coronary anatomy is known and who are proceeding to PCI unless there is a high risk of life-threatening bleeding or other contraindications.

Clopidogrel is recommended for patients who cannot receive ticagrelor or prasugrel.

	COR	LOE
A P2Y12 inhibitor should be added to aspirin as soon as possible and maintained over 12 months, unless there are contraindications.	I	A
<b>Ticagrelor</b> is recommended for <u>all patients</u> at moderate-to-high risk of ischemic events, regardless of initial treatment strategy and including those pre-treated with clopidogrel.	I	B
Prasugrel is recommended for P2Y12-inhibitor-naïve patients (especially diabetics) in whom coronary anatomy is known and who are proceeding to PCI unless there is a high risk of life-threatening bleeding or other contraindications.	I	B
Clopidogrel is recommended for patients who cannot receive ticagrelor or prasugrel.	I	A



2012 STEMI Guidelines

Recommendation

An ADP-receptor blocker is recommended in addition to aspirin.

Options are:

- **Ticagrelor**
- Prasugrel in clopidogrel-naïve patients, if no history of prior stroke/TIA, age <75 years
- Clopidogrel, preferably when prasugrel or ticagrelor are either not available or contraindicated.

	COR	LOE
An ADP-receptor blocker is recommended in addition to aspirin.	I	A
<b>Ticagrelor</b>	I	B
Prasugrel in clopidogrel-naïve patients, if no history of prior stroke/TIA, age <75 years	I	B
Clopidogrel, preferably when prasugrel or ticagrelor are either not available or contraindicated.	I	B

European Heart Journal (2011) 32, 2999–3054

European Heart Journal (2012) 33, 2569–2619



DAPT - PCI



2016 DAPT Guidelines

COR	LOE	RECOMMENDATION
I	B	In patients with ACS treated with DAPT after BMS or DES implantation, P2Y12 inhibitor therapy (clopidogrel, prasugrel, or ticagrelor) should be given for at least 12 months.
IIa	B	In patients with ACS treated with DAPT after coronary stent implantation, it is reasonable to use ticagrelor in preference to clopidogrel for maintenance P2Y12 inhibitor therapy.

J Am Coll Cardiol. 2016 Sep, 68 (10) 1082–1115



2017 DAPT Guidelines

RECOMMENDATION	COR	LOE
In patients with ACS, ticagrelor on top of aspirin is recommended, regardless of initial treatment strategy, including patients pre-treated with clopidogrel unless there are contraindications.	I	B
Clopidogrel on top of aspirin is recommended in stable CAD patients undergoing coronary stent implantation and in ACS patients who cannot receive ticagrelor or prasugrel.	I	A

European Heart Journal (2018) 39, 213–254



DAPT – Medical Therapy

**2016 DAPT Guidelines**

COR	LOE	RECOMMENDATION
I	B	In patients with ACS who are managed with medical therapy alone (without revascularization or fibrinolytic therapy) and treated with DAPT, P2Y12 inhibitor therapy (clopidogrel or ticagrelor) should be continued for at least 12 months.
IIa	B	In patients with NSTEMI-ACS who are managed with medical therapy alone (without revascularization or fibrinolytic therapy) and treated with DAPT, it is reasonable to use ticagrelor in preference to clopidogrel for maintenance P2Y12 inhibitor therapy.

J Am Coll Cardiol. 2016 Sep, 68 (10) 1082–1115

**2017 DAPT Guidelines**

RECOMMENDATION	LOE	COR
In patients with ACS who are managed with medical therapy alone and treated with DAPT, it is recommended to continue P2Y12 inhibitor therapy (either ticagrelor or clopidogrel) for 12 months.	I	A
Ticagrelor is recommended over clopidogrel, unless the bleeding risk outweighs the potential ischemic benefit.	IIa	B

European Heart Journal (2018) 39, 213–254



## 2017 DAPT Guidelines

### Switching between oral P2Y12 inhibitors

RECOMMENDATION	COR	LOE
In patients with ACS who were previously exposed to clopidogrel, switching from clopidogrel to ticagrelor is recommended early after hospital admission at a loading dose of 180 mg irrespective of timing and loading dose of clopidogrel, unless contraindications* to ticagrelor exist.	I	B
Additional switching between oral P2Y12 inhibitors may be considered in cases of side effects/drug intolerance according to the proposed algorithms.	IIb	C

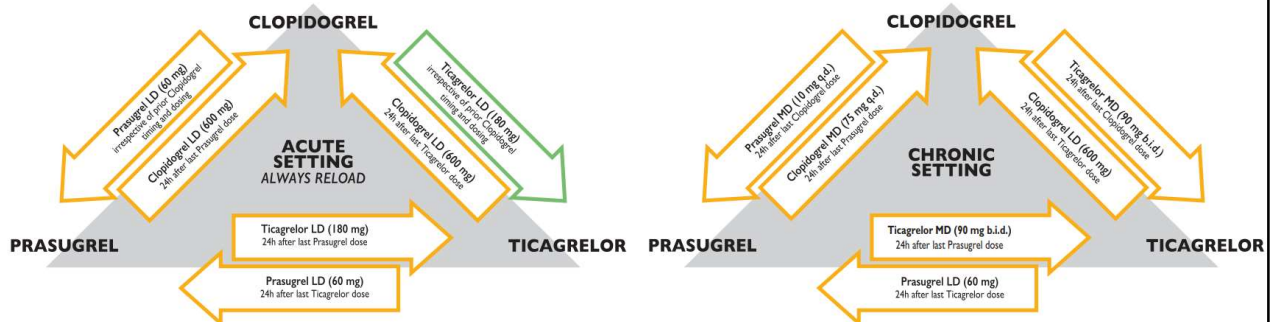
\* Contraindications for ticagrelor: previous intracranial hemorrhage or ongoing bleeds.

European Heart Journal (2018) 39, 213–254



## 2017 DAPT Guidelines

### Switching between oral P2Y12 inhibitors



European Heart Journal (2018) 39, 213–254



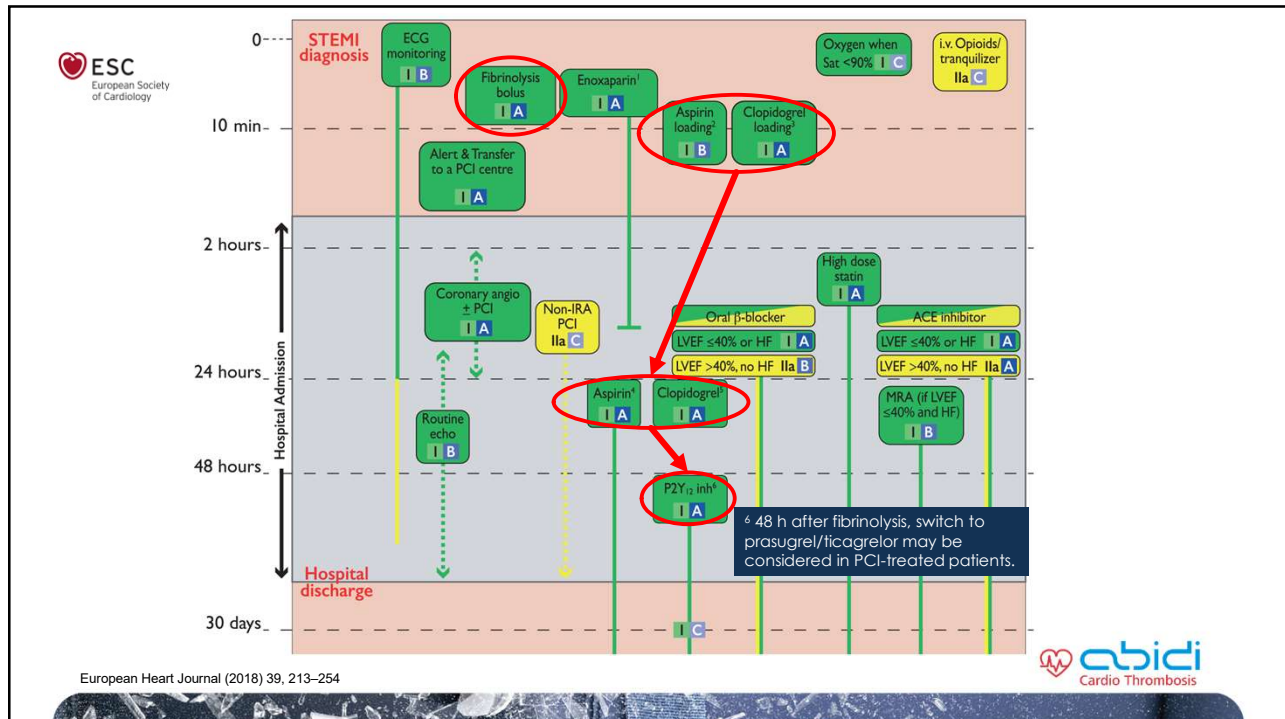


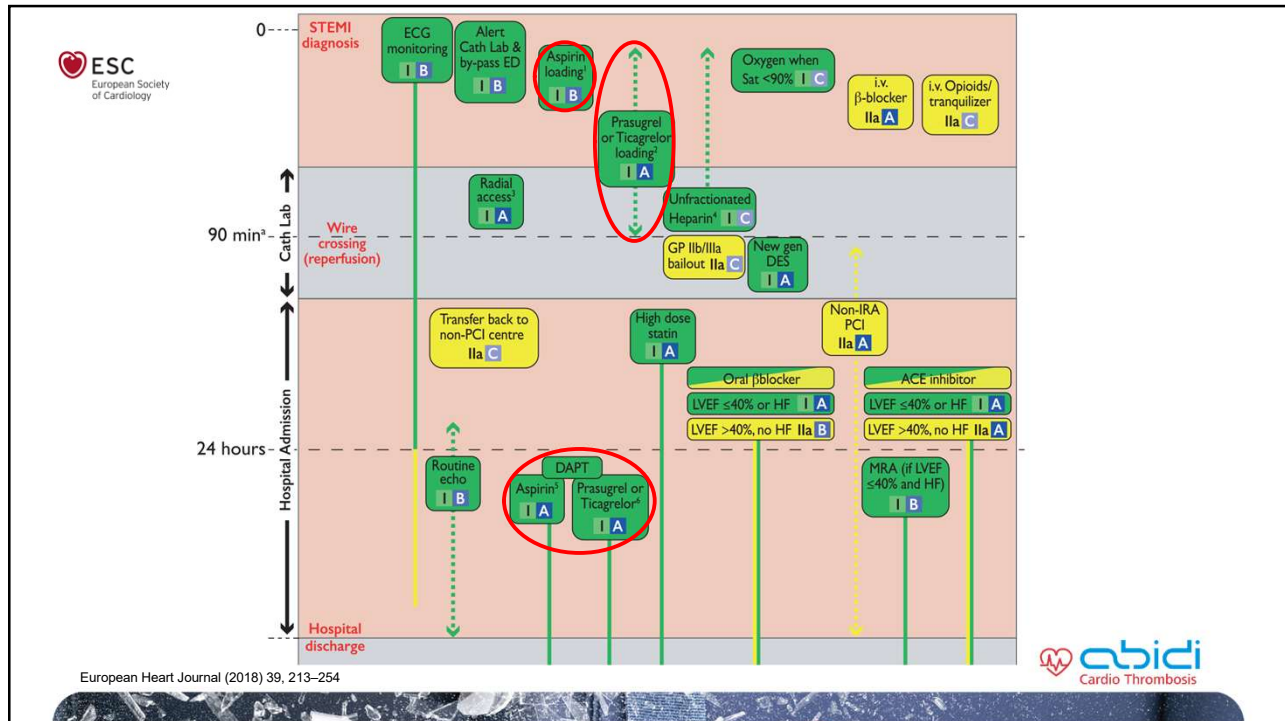
## 2017 STEMI Guidelines

### Antiplatelet co-therapy with fibrinolysis

RECOMMENDATION	COR	LOE
Clopidogrel is indicated in addition to aspirin.	I	A
DAPT (in the form of aspirin plus a P2Y12 inhibitor) is indicated for up to 1 year in patients undergoing fibrinolysis and subsequent PCI.	I	C

*Clopidogrel is the P2Y12 inhibitor of choice as co-adjuvant and after fibrinolysis, but 48 h after fibrinolysis, switch to prasugrel/ticagrelor may be considered in patients who underwent PCI.*





## 2020 NSTEMI Guidelines

RECOMMENDATION	COR	LOE
<b>Pre-treatment</b> with a P2Y12 receptor inhibitor may be considered in patients with NSTEMI-ACS who are not planned to undergo an early invasive strategy and do not have an HBR.	IIb	C
It is not recommended to administer <b>routine pre-treatment</b> with a P2Y12 receptor inhibitor in patients in whom coronary anatomy is not known and an early invasive management is planned.	III	A



