Case Presentation

Dr : Hashem Sezavar

Prof : international cardiology

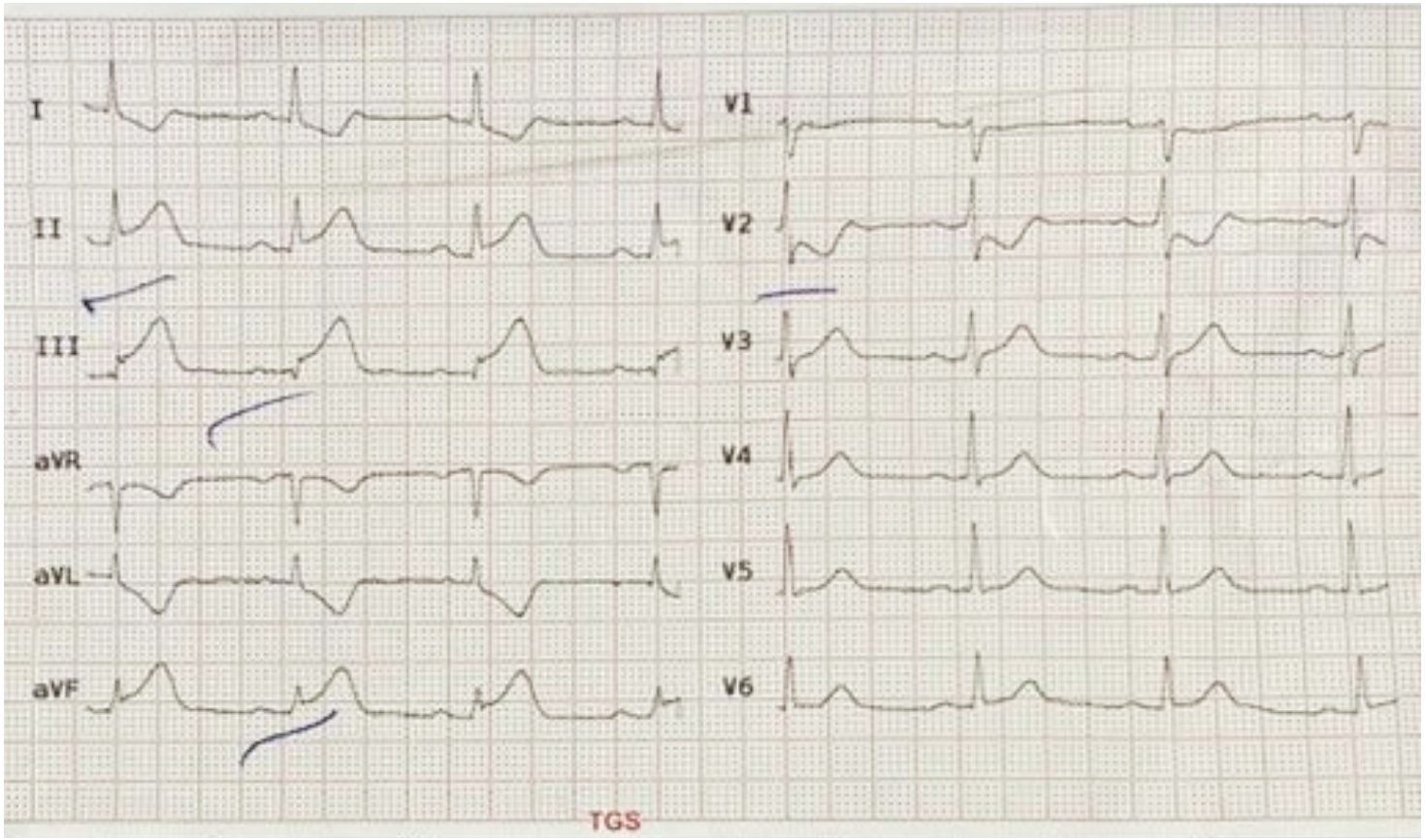
- A 71 years old lady with chief complaint of chest pain

  From 2 hours ago presented to EMS

  - PMHX: Negative

  - DH: negative

ECG at presentation



- **This patient should be triaged for immediate reperfusion therapy**
- **The PCI capable center is available within 2 hours**
- **which strategy is preferred?**

- Primary PCI

or

- Fibrinolysis

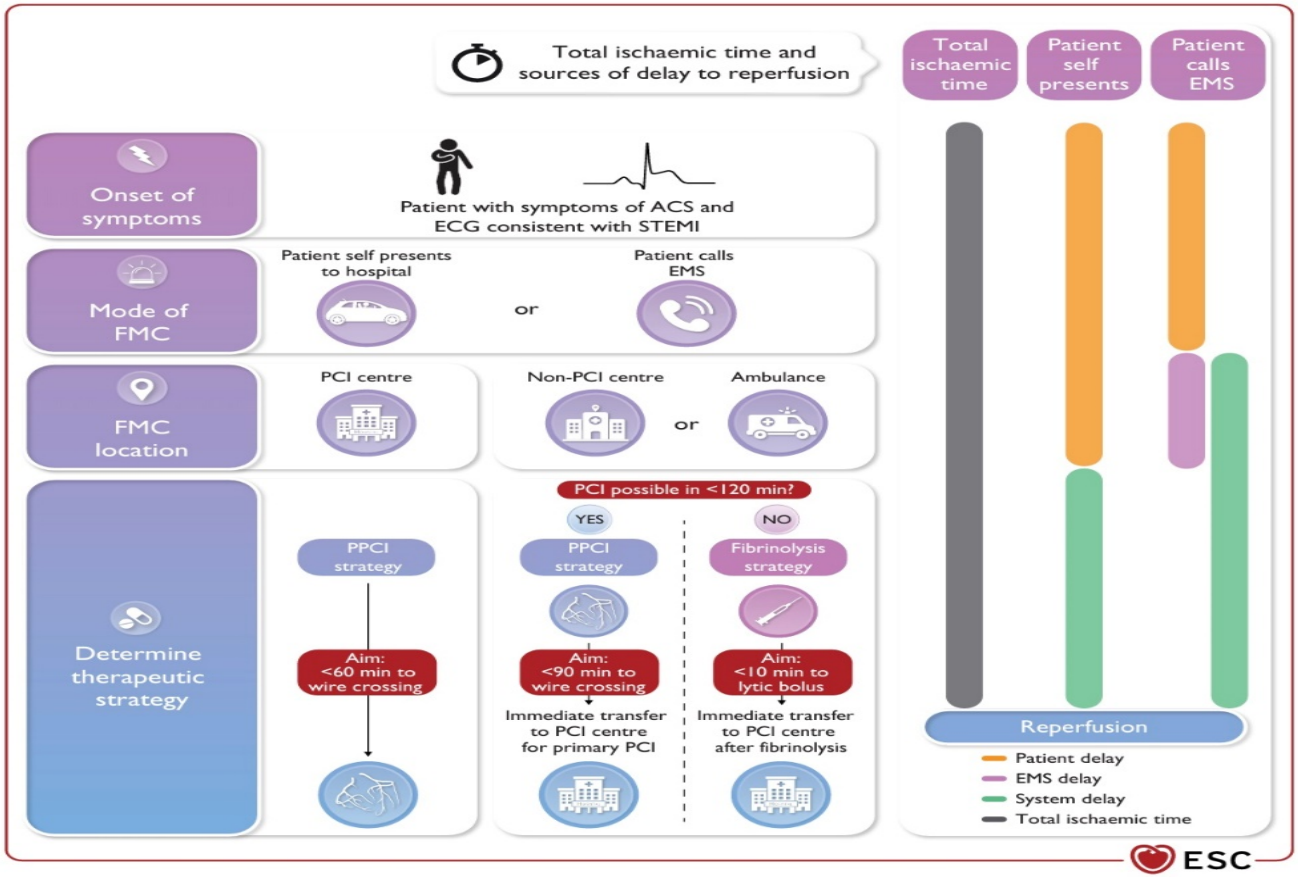
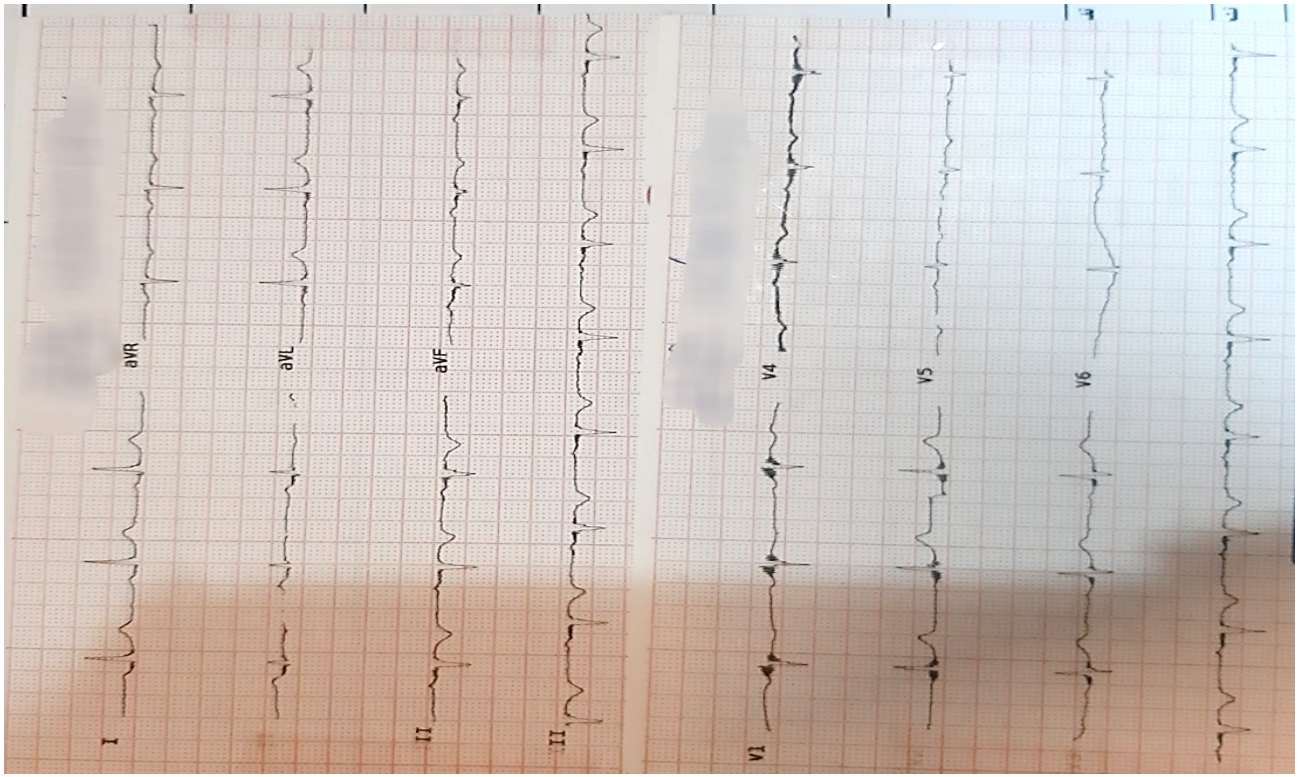


Figure 7 Modes of presentation and pathways to invasive management and myocardial revascularization in patients presenting with STEMI.

Recommendations	Class[a]	Level[b]
Recommendations for reperfusion therapy for patients with STEMI		
Reperfusion therapy is recommended in all patients with a working diagnosis of STEMI (persistent ST-segment elevation or equivalents[c]) and symptoms of ischaemia of ≤12 h duration.[51,182]	I	A
A PPCI strategy is recommended over fibrinolysis if the anticipated time from diagnosis to PCI is <120 min.[52,218,219]	I	A
If timely PPCI (<120 min) cannot be performed in patients with a working diagnosis of STEMI, fibrinolytic therapy is recommended within 12 h of symptom onset in patients without contraindications.[176,183]	I	A

ECG after Fibrinolysis



- **Witch Antiplatelet should be started as second anti platelet ?**

- **Clopidogrel**
- **Ticagrelor**
- **prasugrel**

Recommendation Table 5 — Recommendations for antiplatelet and anticoagulant therapy in acute coronary syndrome

Recommendations	Class[a]	Level[b]
Antiplatelet therapy		
Aspirin is recommended for all patients without contraindications at an initial oral LD of 150–300 mg (or 75–250 mg i.v.) and an MD of 75–100 mg o.d. for long-term treatment.[284,285]	I	A
In all ACS patients, a $P2Y_{12}$ receptor inhibitor is recommended in addition to aspirin, given as an initial oral LD followed by an MD for 12 months unless there is HBR[c].[238,239,263,286]	I	A
A proton pump inhibitor in combination with DAPT is recommended in patients at high risk of gastrointestinal bleeding.[287,288]	I	A
Prasugrel is recommended in $P2Y_{12}$ receptor inhibitor-naïve patients proceeding to PCI (60 mg LD, 10 mg o.d. MD, 5 mg o.d. MD for patients aged ≥75 years or with a body weight <60 kg).[239]	I	B
Ticagrelor is recommended irrespective of the treatment strategy (invasive or conservative) (180 mg LD, 90 mg b.i.d. MD).[238]	I	B
Clopidogrel (300–600 mg LD, 75 mg o.d. MD) is recommended when prasugrel or ticagrelor are not available, cannot be tolerated, or are contraindicated.[263,289]	I	C

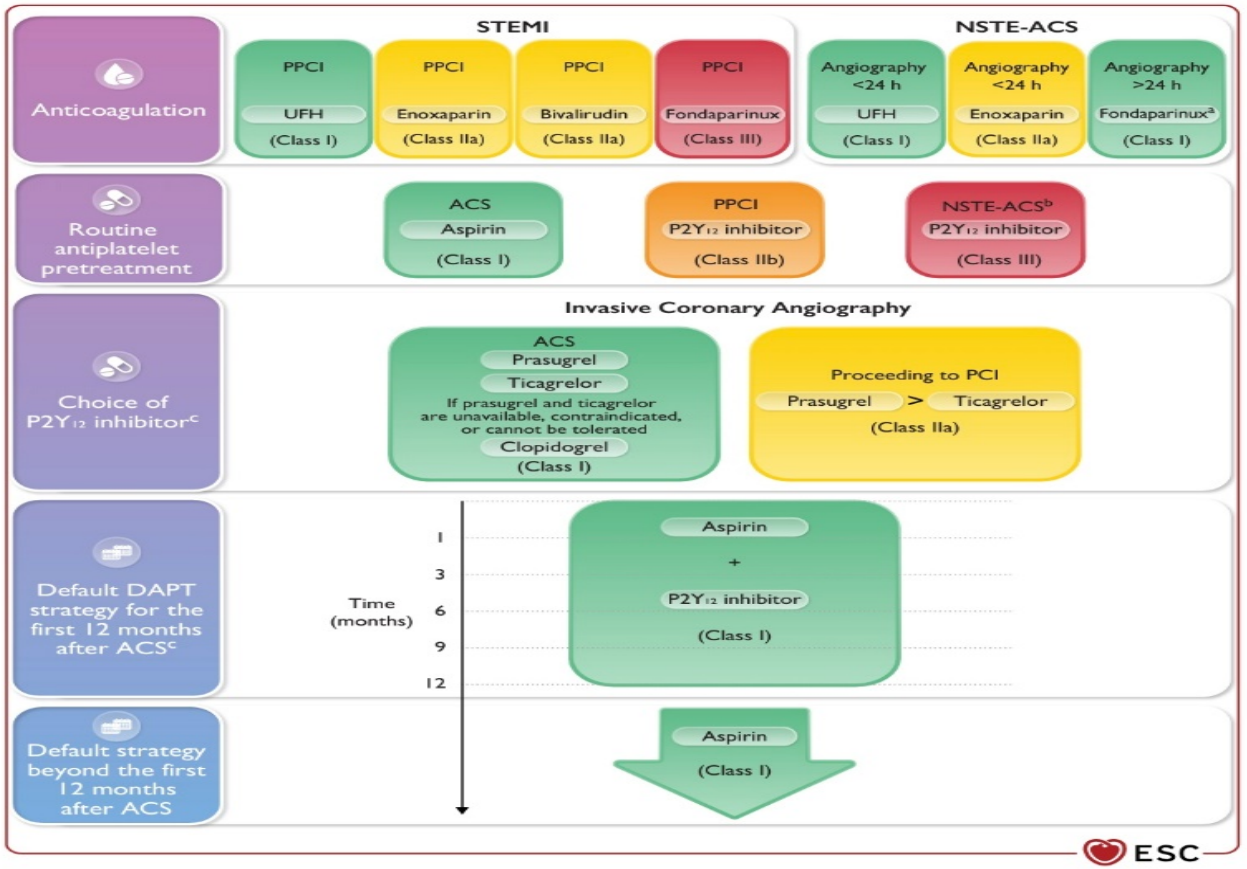


Figure 10 Recommended default antithrombotic therapy regimens in acute coronary syndrome patients without an indication for oral anticoagulation. ACS, acute coronary syndrome; DAPT, dual antiplatelet therapy; HBR, high bleeding risk; NSTE-ACS, non-ST-elevation acute coronary syndrome; PCI, percutaneous coronary intervention; PPCI, primary percutaneous coronary intervention; UFH, unfractionated heparin. Algorithm for antithrombotic therapy in ACS patients without an indication for oral anticoagulation undergoing invasive evaluation. [a]Fondaparinux (plus a single bolus of UFH at the time of PCI) is recommended in preference to enoxaparin for NSTE-ACS patients in cases of medical treatment or logistical constraints for transferring the NSTE-ACS patient to PCI within 24 h of symptom onset. [b]Routine pre-treatment with a $P2Y_{12}$ receptor inhibitor in NSTE-ACS patients in whom coronary anatomy is not known and early invasive management (<24 h) is planned is not recommended, but pre-treatment with a $P2Y_{12}$ receptor inhibitor may be considered in NSTE-ACS patients who are not expected to undergo an early invasive strategy (<24 h) and do not have HBR. [c]Clopidogrel is recommended for 12 months DAPT if prasugrel and ticagrelor are not available, cannot be tolerated, or are contraindicated, and may be considered in older ACS patients (typically defined as older than 70–80 years of age).

Recommendation Table 7 — Recommendations for fibrinolytic therapy

Recommendations	Class[a]	Level[b]
Fibrinolytic therapy		
When fibrinolysis is the reperfusion strategy, it is recommended to initiate this treatment as soon as possible after diagnosis in the pre-hospital setting (aim for target of <10 min to lytic bolus).[206,353–355]	I	A
A fibrin-specific agent (i.e. tenecteplase, alteplase, or reteplase) is recommended.[356,357]	I	B
A half-dose of tenecteplase should be considered in patients >75 years of age.[184]	IIa	B
Antiplatelet co-therapy with fibrinolysis		
Aspirin and clopidogrel are recommended.[340–342]	I	A
Anticoagulation co-therapy with fibrinolysis		
Anticoagulation is recommended in patients treated with fibrinolysis until revascularization (if performed) or for the duration of hospital stay (up to 8 days).[260,347,348,350,357–360]	I	A
Enoxaparin i.v. followed by s.c. is recommended as the preferred anticoagulant.[347,348,357–360]	I	A
When enoxaparin is not available, UFH is recommended as a weight-adjusted i.v. bolus, followed by infusion.[357]	I	B
In patients treated with streptokinase, an i.v. bolus of fondaparinux followed by an s.c. dose 24 h later should be considered.[260]	IIa	B

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•Plan after fibrinolysis and reperfusion?

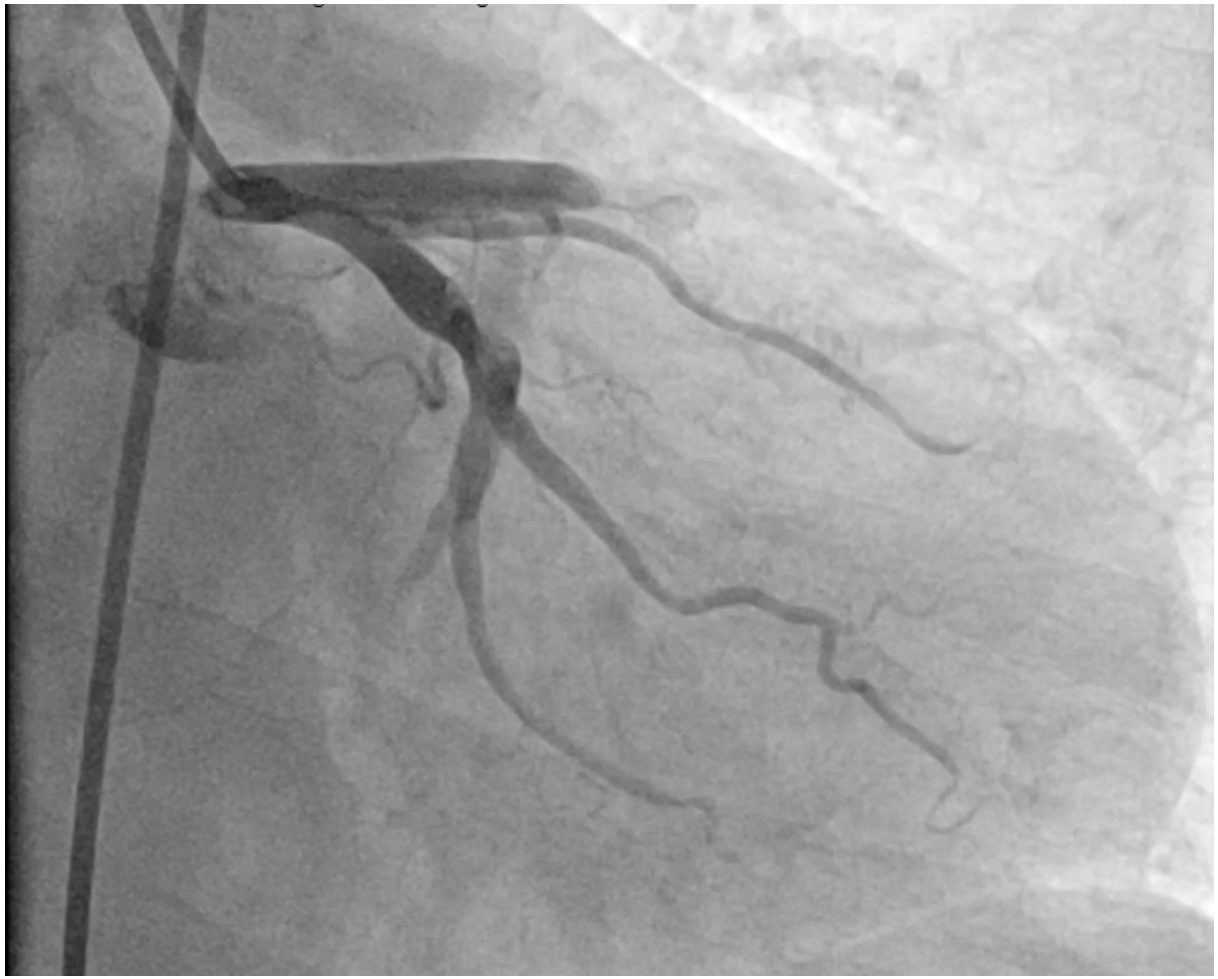
-Medical treatment in-hospital care?

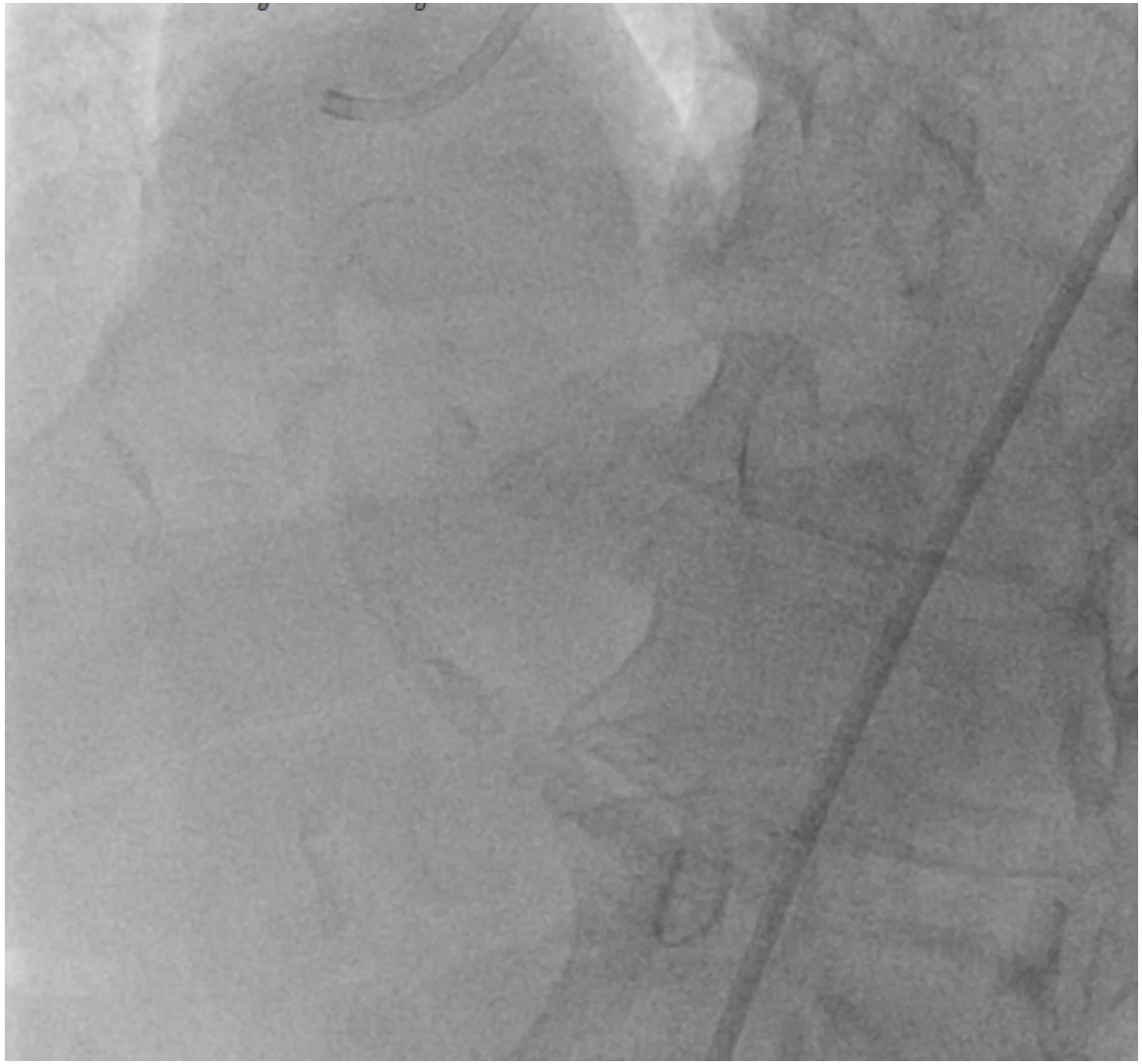
-Coronary angiography within 24 hour of fibrinolysis?

- Rescue PCI

Transfer/interventions after fibrinolysis		
Transfer to a PCI-capable centre is recommended in all patients immediately after fibrinolysis.[184–186,212,213,222–224]	I	A
Emergency angiography and PCI of the IRA, if indicated are recommended in patients with new-onset or persistent heart failure/shock after fibrinolysis.[185,225]	I	A
Angiography and PCI of the IRA, if indicated, is recommended between 2 and 24 h after successful fibrinolysis.[186,212,213,217,224]	I	A

Coronary angiography





- **PCI at the same time**

Or

- **Medical treatment and differed stenting**

Recommendation Table 5 — Recommendations for antiplatelet and anticoagulant therapy in acute coronary syndrome

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Antiplatelet therapy		
Aspirin is recommended for all patients without contraindications at an initial oral LD of 150–300 mg (or 75–250 mg i.v.) and an MD of 75–100 mg o.d. for long-term treatment.[284,285]	I	A
In all ACS patients, a $P2Y_{12}$ receptor inhibitor is recommended in addition to aspirin, given as an initial oral LD followed by an MD for 12 months unless there is HBR[c].[238,239,263,286]	I	A
A proton pump inhibitor in combination with DAPT is recommended in patients at high risk of gastrointestinal bleeding.[287,288]	I	A
Prasugrel is recommended in $P2Y_{12}$ receptor inhibitor-naïve patients proceeding to PCI (60 mg LD, 10 mg o.d. MD, 5 mg o.d. MD for patients aged ≥75 years or with a body weight <60 kg).[239]	I	B
Ticagrelor is recommended irrespective of the treatment strategy (invasive or conservative) (180 mg LD, 90 mg b.i.d. MD).[238]	I	B
Clopidogrel (300–600 mg LD, 75 mg o.d. MD) is recommended when prasugrel or ticagrelor are not available, cannot be tolerated, or are contraindicated.[263,289]	I	C

Echocardiography

- Normal LV size and Mild dysfunction (LVEF: 50%)
- Normal RV size and function
- Mild MR
- Mild to moderate TR, No PAH
- Base and mid of Inferior and Posterior are Severe Hypokinetic
- No PE

Medication

- Aspirin
- Ticagrelor
- Rosuvastatin
- Heparin
- TNG
- Beta blocker
- ACEI or ARB

Beta-blockers		
Beta-blockers are recommended in ACS patients with LVEF ≤40% regardless of HF symptoms.[801,870–872]	I	A
Routine beta-blockers for all ACS patients regardless of LVEF should be considered.[798,873–878]	IIa	B
RAAS system inhibitors		
Angiotensin-converting enzyme (ACE) inhibitors[d] are recommended in ACS patients with HF symptoms, LVEF ≤40%, diabetes, hypertension, and/or CKD.[195,813–817,879]	I	A
Mineralocorticoid receptor antagonists are recommended in ACS patients with an LVEF ≤40% and HF or diabetes.[826,880]	I	A
Routine ACE inhibitors for all ACS patients regardless of LVEF should be considered.[816,817]	IIa	A

Anticoagulation co-therapy with fibrinolysis		
Anticoagulation is recommended in patients treated with fibrinolysis until revascularization (if performed) or for the duration of hospital stay (up to 8 days).[260,347,348,350,357–360]	I	A
Enoxaparin i.v. followed by s.c. is recommended as the preferred anticoagulant.[347,348,357–360]	I	A
When enoxaparin is not available, UFH is recommended as a weight-adjusted i.v. bolus, followed by infusion.[357]	I	B
In patients treated with streptokinase, an i.v. bolus of fondaparinux followed by an s.c. dose 24 h later should be considered.[260]	IIa	B

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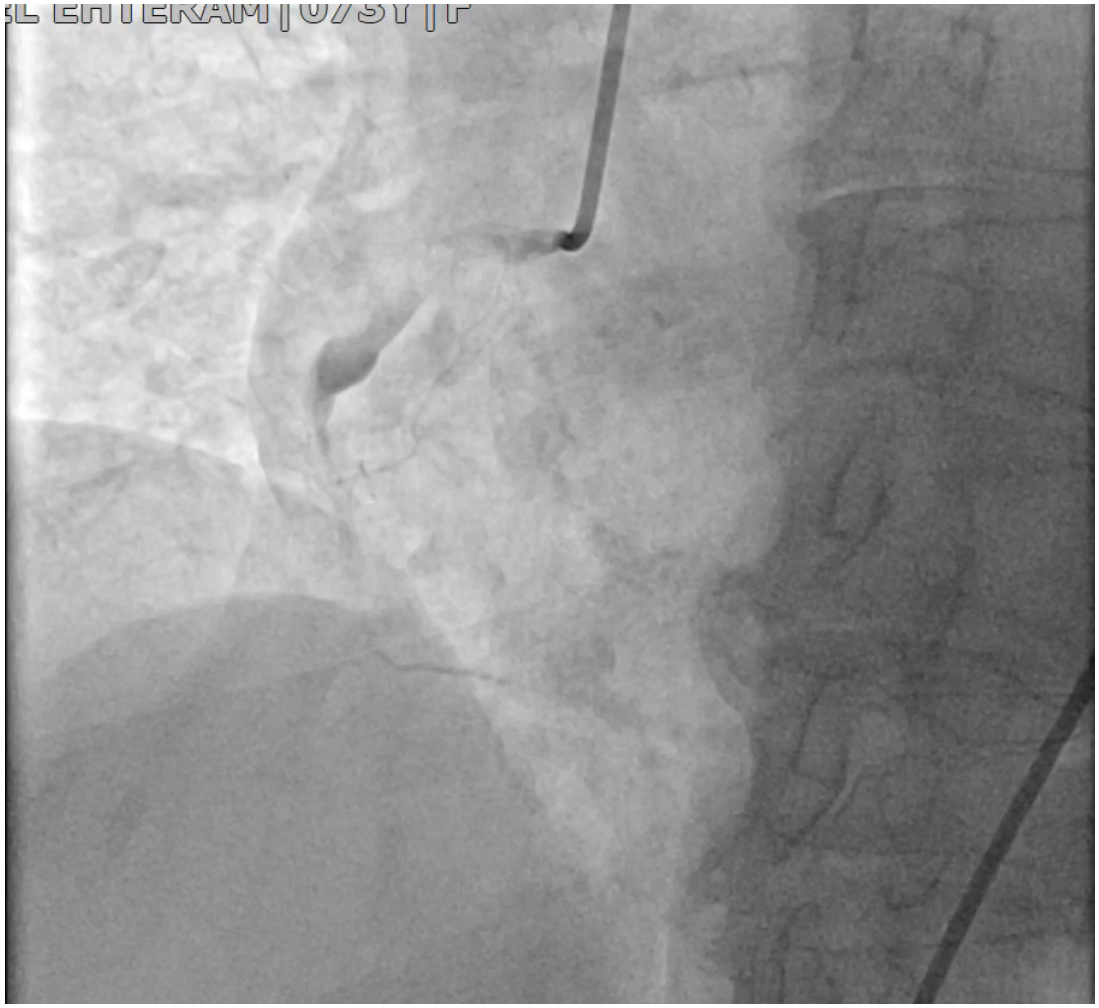
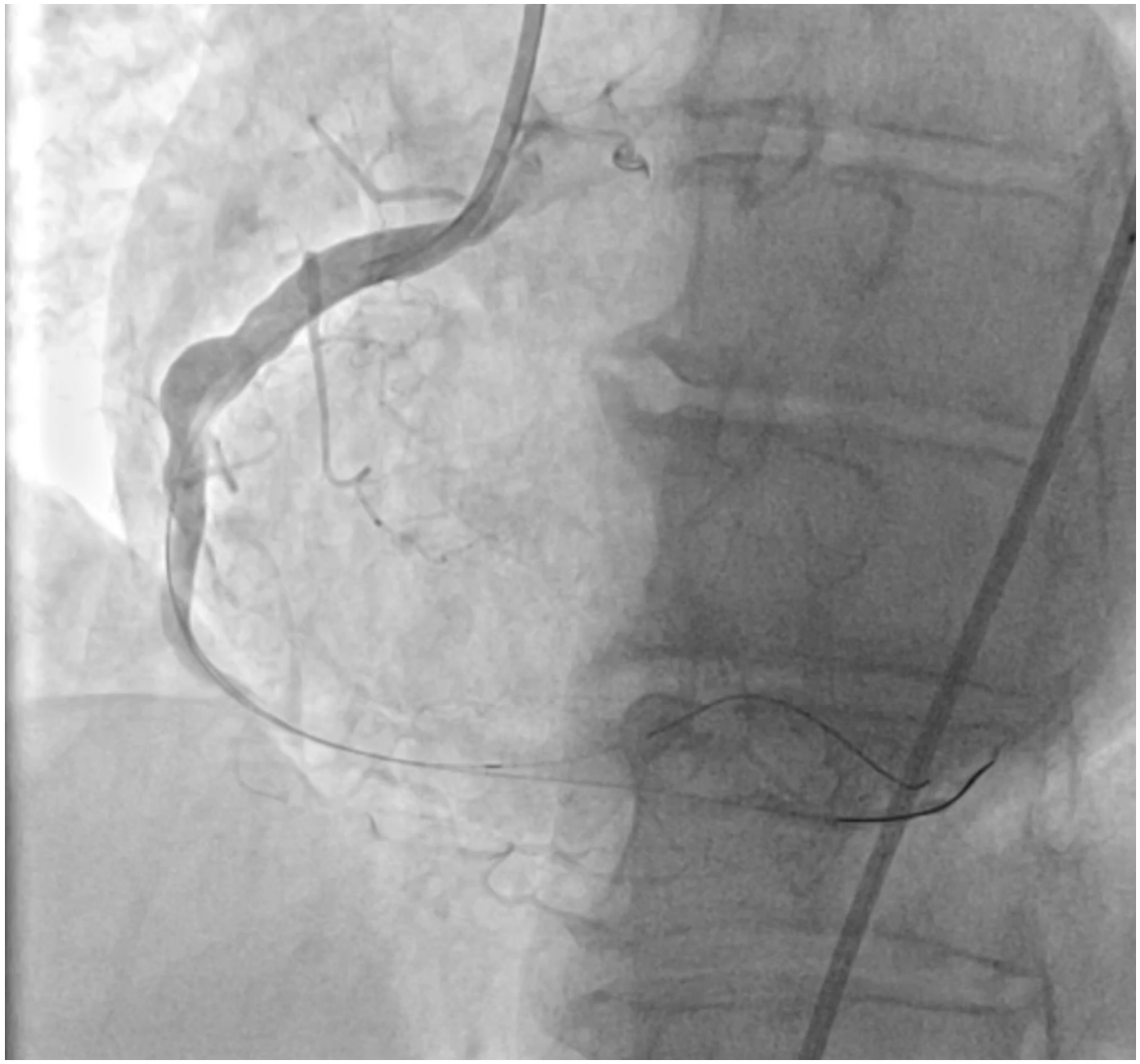
- Intravenous nitrates may be useful during the acute phase in STEMI patients with Hypertension or HF

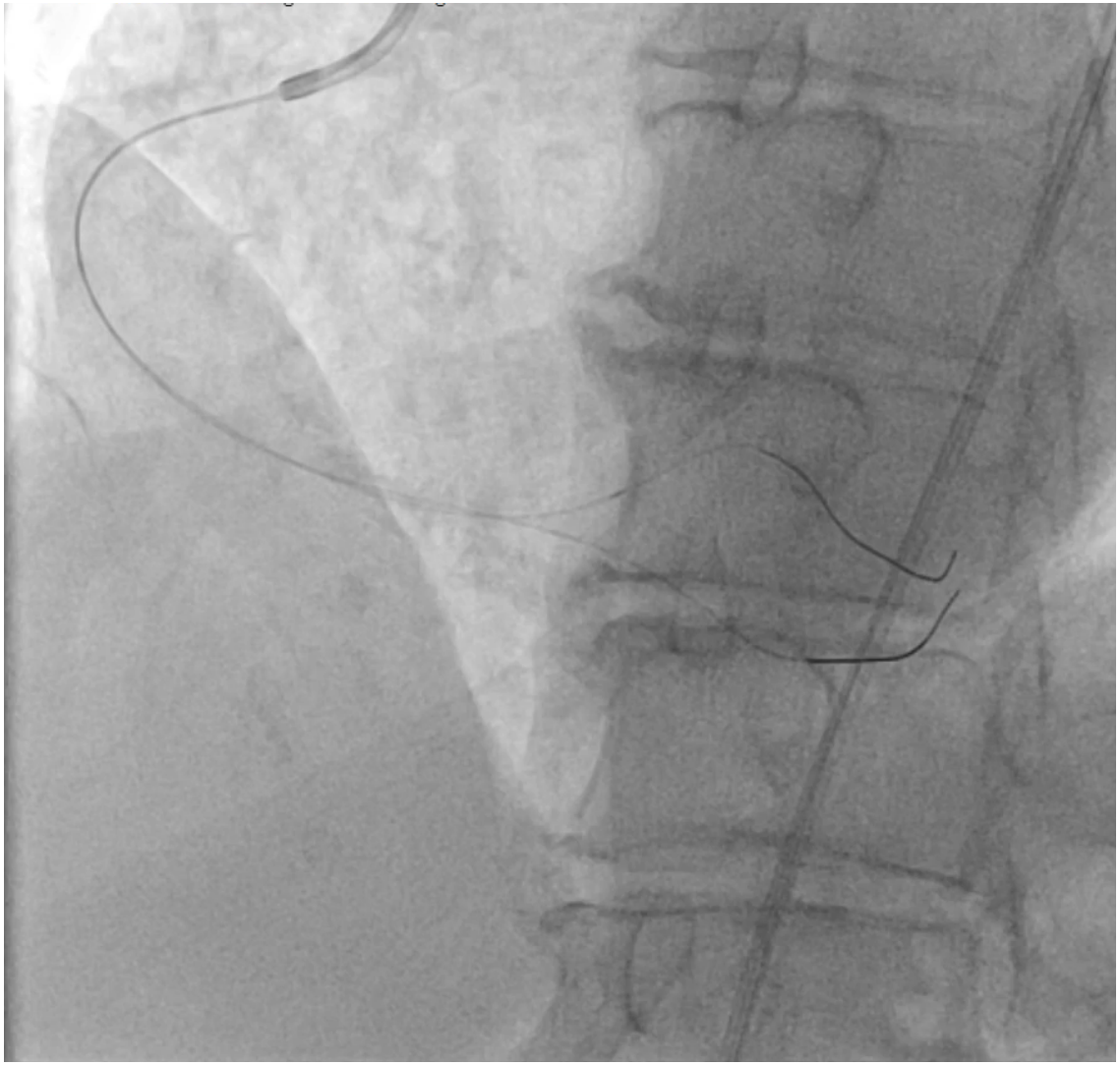
Repeat coronary Angiography after 5 days



After second coronary Angiography:

- **Intervention?**
- **Medical treatment?**

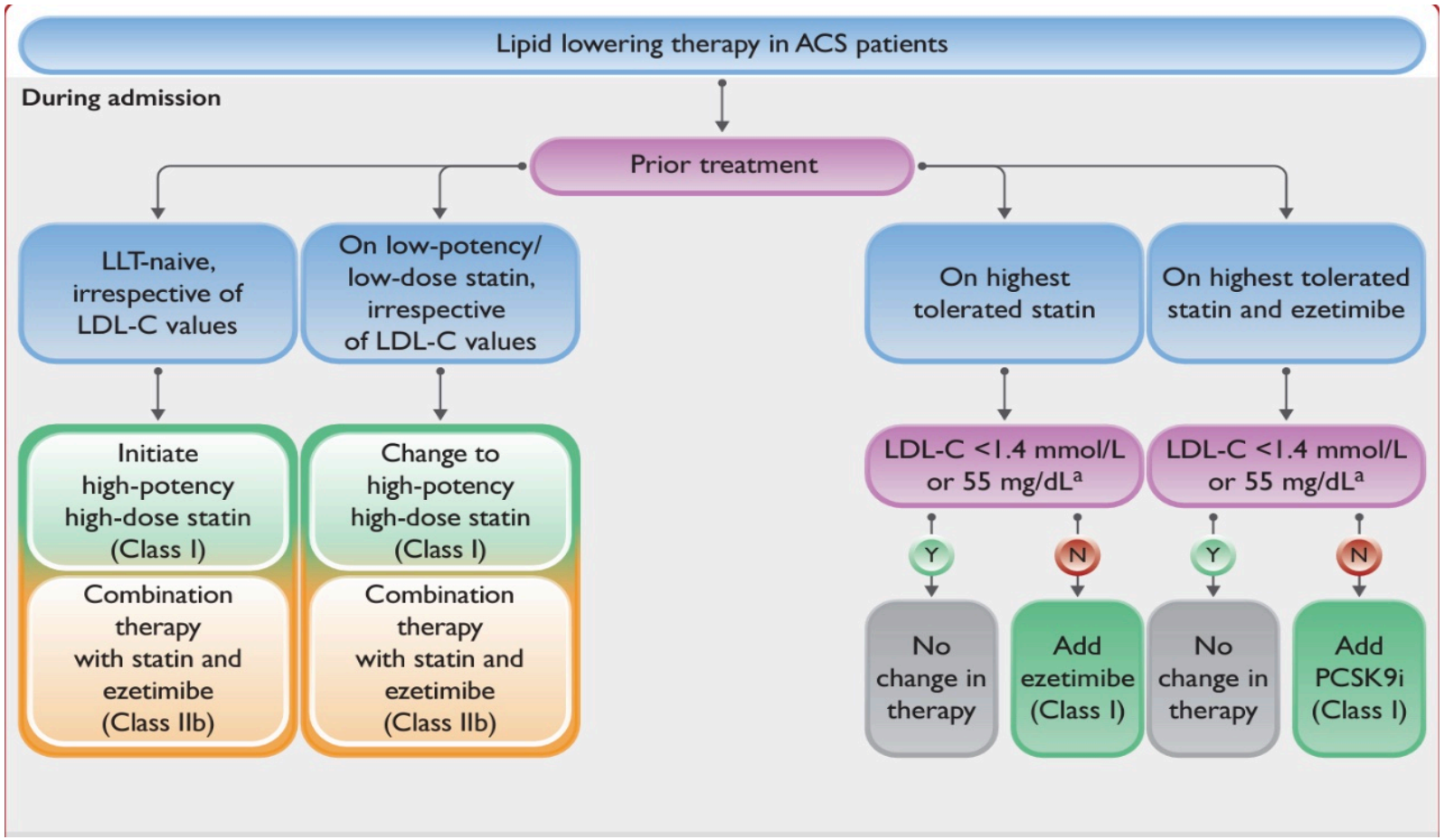


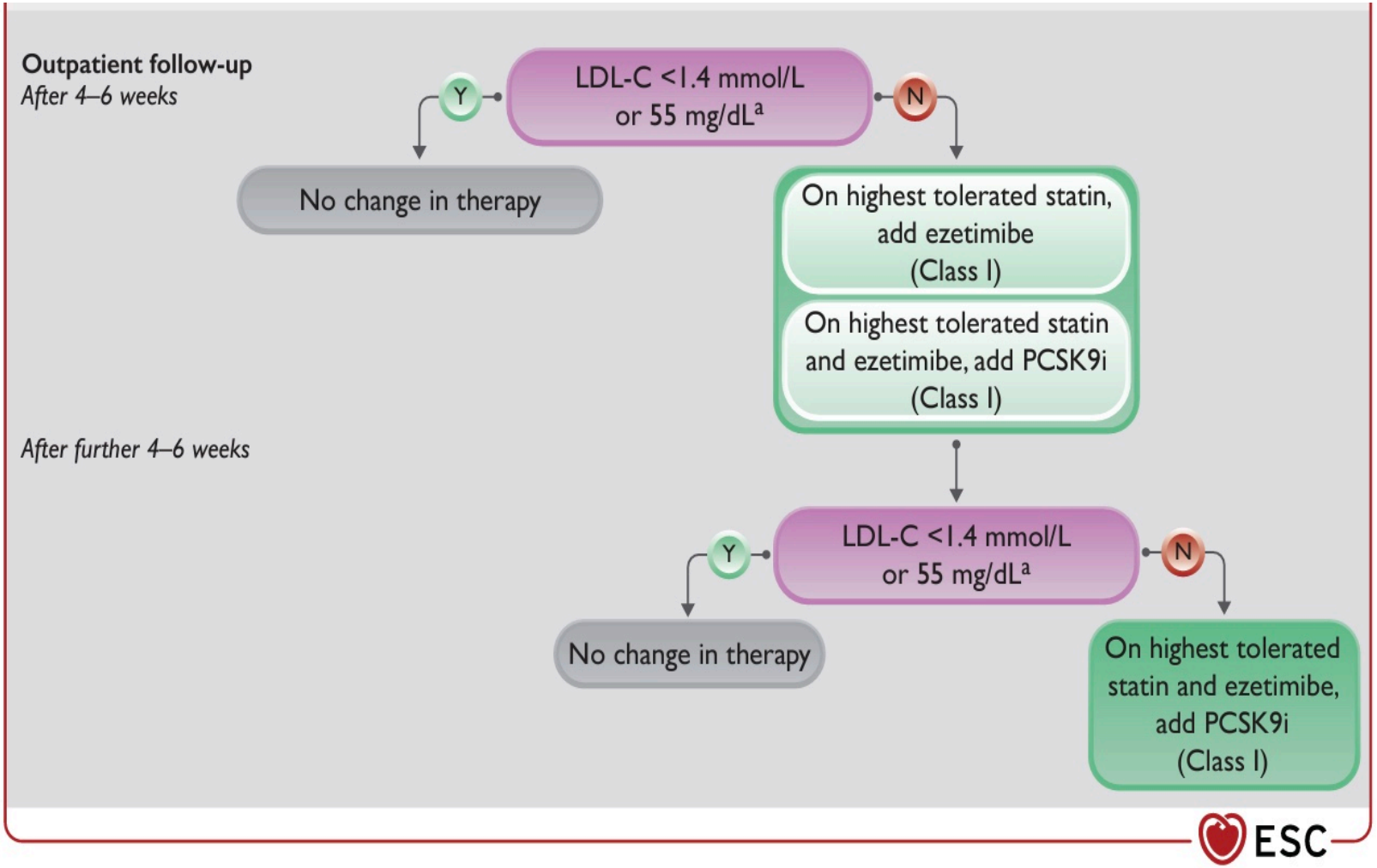


After discharge

- **LDL: 85 mg/dL**

- **What is the treatment goal for secondary prevention?**


Lipid lowering therapy in ACS patients
During admission
Prior treatment
LLT-naive, irrespective of LDL-C values
On low-potency/ low-dose statin, irrespective of LDL-C values
On highest tolerated statin
On highest tolerated statin and ezetimibe
Initiate high-potency high-dose statin (Class I)
Combination therapy with statin and ezetimibe (Class IIb)
Change to high-potency high-dose statin (Class I)
Combination therapy with statin and ezetimibe (Class IIb)
LDL-C <1.4 mmol/L or 55 mg/dL[a]
LDL-C <1.4 mmol/L or 55 mg/dL[a]
Y
N
Y
N
No change in therapy
Add ezetimibe (Class I)
No change in therapy
Add PCSK9i (Class I)


Outpatient follow-up
After 4–6 weeks
LDL-C <1.4 mmol/L or 55 mg/dL[a]
Y
N
No change in therapy
On highest tolerated statin, add ezetimibe (Class I)
On highest tolerated statin and ezetimibe, add PCSK9i (Class I)
After further 4–6 weeks
LDL-C <1.4 mmol/L or 55 mg/dL[a]
Y
N
No change in therapy
On highest tolerated statin and ezetimibe, add PCSK9i (Class I)
ESC

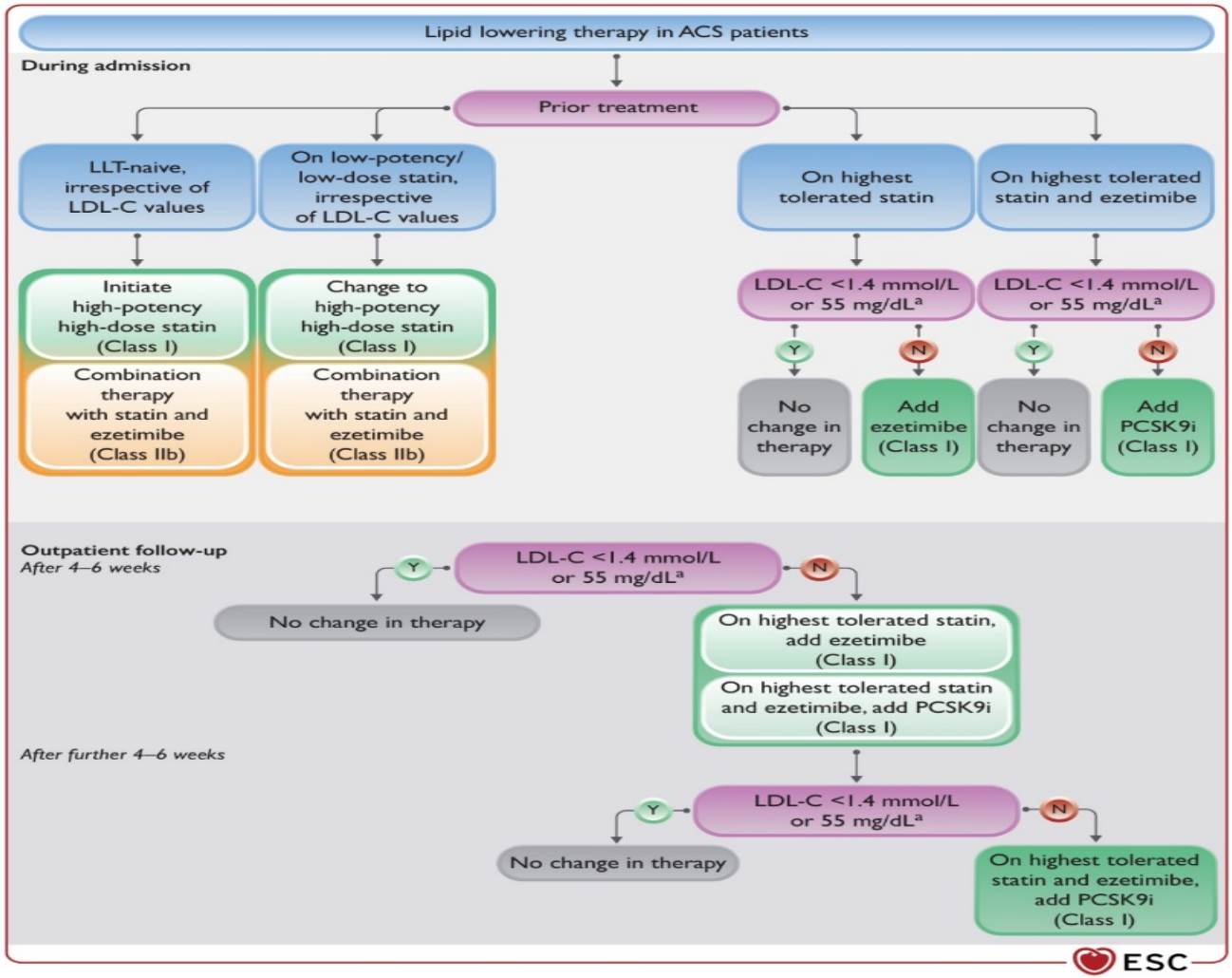


Figure 18 Lipid-lowering therapy in ACS patients. ACS, acute coronary syndrome; LDL-C, low-density lipoprotein cholesterol; LLT, lipid-lowering therapy; PCSK9i, proprotein convertase subtilisin/kexin type 9 inhibitor. [a]Consider LDL-C <1.0 mmol/L if recurrent event.

Thanks for your attention