



NSTEMI & Unstable Angina

NSTE-ACS · Risk stratify → time the cath → treat for life

RISK DRIVES TIMING
not the troponin alone

DIAGNOSE *ischemia without persistent ST elevation*

THE DEFINITION

Rise and/or fall of troponin with at least one value above the 99th percentile, **plus** evidence of ischemia (symptoms, ECG change, imaging). **Unstable angina** = same picture with **normal troponin**.

ECG — SUPPORTIVE, NOT REQUIRED

ST depression, transient elevation, or **deep symmetric T inversion**. A normal ECG never excludes NSTE-ACS. **Repeat at 15–30 min** if pain persists, and check posterior leads.

TYPE 1 vs TYPE 2 — ASK FIRST

Type 1 = plaque rupture → this pathway. **Type 2** = supply/demand mismatch (sepsis, anemia, tachyarrhythmia, hypoxia) → **treat the trigger**, not the cath lab.

RISK-STRATIFY, THEN TIME THE ANGIOGRAM *this is the central decision*

Strategy	Who	Why
Immediate < 2 hours	Refractory angina, hemodynamic or electrical instability, mechanical complication , acute HF from ischemia	These patients behave like a STEMI. Do not wait for troponin trends or risk scores.
Early < 24 hours	GRACE score > 140 , or other high-risk features including dynamic ST change and rising troponin	Early invasive reduces recurrent ischemia and MACE in the genuinely high-risk group.
During admission	Intermediate risk, or low risk after further stratification	Invasive with intent to revascularize is recommended in intermediate/high risk to reduce MACE. Low risk may take a selective approach.

USE THE RIGHT SCORE FOR THE RIGHT DECISION

GRACE guides invasive timing (> 140 = early). **TIMI** estimates 14-day risk. **HEART** is an **ED disposition** tool for undifferentiated chest pain — it does **not** decide cath timing in an admitted NSTEMI. Applying one score's cutoff to another's decision is a common and dangerous error.

ANTITHROMBOTICS *load, anticoagulate, then 12 months of DAPT*

Agent	Dose	Notes
Aspirin	162–325 mg chewed	Then 81 mg daily indefinitely.
Ticagrelor	180 mg load, 90 mg BID	Preferred over clopidogrel in NSTE-ACS undergoing PCI. Dyspnea via adenosine (ENT1 inhibition).
Prasugrel	60 mg load, 10 mg daily	Also preferred over clopidogrel. Contraindicated with prior stroke/TIA ; avoid ≥ 75 y or < 60 kg. Usually given after anatomy is known.
Anticoagulation	Enoxaparin 1 mg/kg SC BID or UFH 60 U/kg bolus	Continue until PCI or for the hospital stay. Reduce enoxaparin to daily if CrCl < 30.

UPSTREAM P2Y12 — ONLY IF THE CATH IS DELAYED

If angiography is planned **> 24 hours away**, upstream clopidogrel or ticagrelor may be considered to reduce MACE. If the patient is going early, many centers wait for the anatomy, since a surgical lesion means CABG and a loaded P2Y12 forces a delay.

MEDICAL THERAPY *started in hospital, continued for life*

Drug	When	Why / when to hold
Beta-blocker	Oral within 24 h , low dose	Reduces ischemia, reinfarction, arrhythmia. Hold in cardiogenic shock, decompensated HF , bradycardia, or high-grade block.
High-intensity statin	Before discharge, everyone	Atorvastatin 80 mg. Plaque stabilization; do not wait for a lipid panel.
ACE inhibitor / ARB	First 24 h if BP allows	Indicated if LVEF ≤ 40% , hypertension , diabetes , or CKD; reasonable otherwise.
MRA	After ACEi/BB established	Add if LVEF ≤ 40% with HF or diabetes . Hold if K ⁺ > 5.0 or significant renal impairment.
Nitrates	Ongoing ischemic pain	Symptom relief only, no mortality benefit. Avoid with recent PDE5 inhibitor or suspected RV infarct.

TYPE 2 MI *a different disease*

Troponin rises because of **supply–demand mismatch**, not plaque rupture: sepsis, tachyarrhythmia, anemia, hypoxemia, hypotension, hypertensive crisis. **Treatment is the underlying cause**. DAPT and urgent angiography are usually **not** indicated and add bleeding risk. Say which type you mean in the note.

BEFORE DISCHARGE *secondary prevention*

DAPT **12 months** by default · high-intensity statin to **LDL < 70** (add ezetimibe ± PCSK9i) · beta-blocker · ACEi/ARB · **cardiac rehab referral for every patient** · smoking cessation · BP and diabetes control, consider an **SGLT2 inhibitor**.

BALANCE ISCHEMIA AGAINST BLEEDING *the other half of the decision*

WHAT GRACE USES

Age, heart rate, systolic BP, **creatinine**, Killip class, cardiac arrest at presentation, **ST deviation**, and elevated markers. It estimates in-hospital and 6-month mortality — which is why it, not a chest-pain triage score, drives invasive timing.

HIGH BLEEDING RISK

Older age, low body weight, **CKD**, anemia, prior bleeding or stroke, and need for oral anticoagulation. Consider **radial access**, weight- and renally-adjusted anticoagulation, a PPI with DAPT, and shorter or de-escalated DAPT.

IF THEY NEED ANTICOAGULATION TOO

With atrial fibrillation or a mechanical valve, avoid indefinite triple therapy. Usual approach is a short period of triple therapy, then **DOAC plus a single P2Y12 inhibitor** (typically clopidogrel), dropping aspirin early.

PEARLS & PITFALLS

- **Do not use a HEART score to time the cath.** It is an ED disposition tool; GRACE > 140 is the early-invasive threshold.
- A normal ECG does not exclude NSTE-ACS. Repeat it, and get posterior leads if the story fits.
- Persistent ST elevation is a STEMI, not an NSTEMI — stop stratifying and activate the lab.
- **Always ask type 1 or type 2** before committing to DAPT and angiography.
- Loading prasugrel before you know the anatomy can delay urgent CABG.
- Rising troponin in a septic patient is usually demand ischemia. Treat the sepsis.

