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The Evolving Landscape of ACS Management

Overview

- Rapid Diagnosis & Risk Stratification
- Antiplatelet & Antithrombotic Therapy
- Revascularisation Strategies
- Secondary Prevention

Rapid Diagnosis

- ECG under 10 mins for all chest pain patients
- Recognising STEMI and stemi equivalent is important
- Occlusive MI is being suggested instead of stemi
- AI assistance in ECG interpretation

- High-sensitivity Troponins/POC troponin → Earlier rule-in/rule-out

  On admission and in 1,2 hrs
- Accelerated diagnostic pathways
- Greater use of point-of-care ultrasound – recognising regional wall motional abnormalities/clues for alternative diagnoses

Risk Stratification Tools

- GRACE Score
- TIMI Score
- HEART Score
- Used to guide early invasive strategy decisions

Evolution of Antiplatelet Therapy

Clopidogrel → Variable response

Prasugrel/Ticagrelor → Improved outcomes

- Improved mortality with Ticagrelor, less ischaemic events with both, higher non cabg bleeding

De-escalation strategies in bleeding risk

Shorter DAPT in high bleeding risk patients

Anticoagulation Updates

LMWH if no angiography/PCI under 24hrs, LMWH of choice is Fondaparinux 2.5mg sc od

- less bleeding and less mortality at 6 months

UFH remains standard in PCI

Bivalirudin use in selected bleeding risk cases

NOACs in ACS + AF patients

Balancing ischemic vs bleeding risk is key

Revascularisation Strategies

Primary PCI is preferred for STEMI

Pre loading with SAPT/DAPT and IV Heparin

Latest positive trial on pre hospital s/c Zalunfiban

Radial access → Lower bleeding & mortality

Intra coronary imaging (OCT/IVUS) to optimize stent outcomes

Fractional flow reserve (FFR/iFR) for lesion assessment in NSTEMI

Multivessel Disease Decision Making

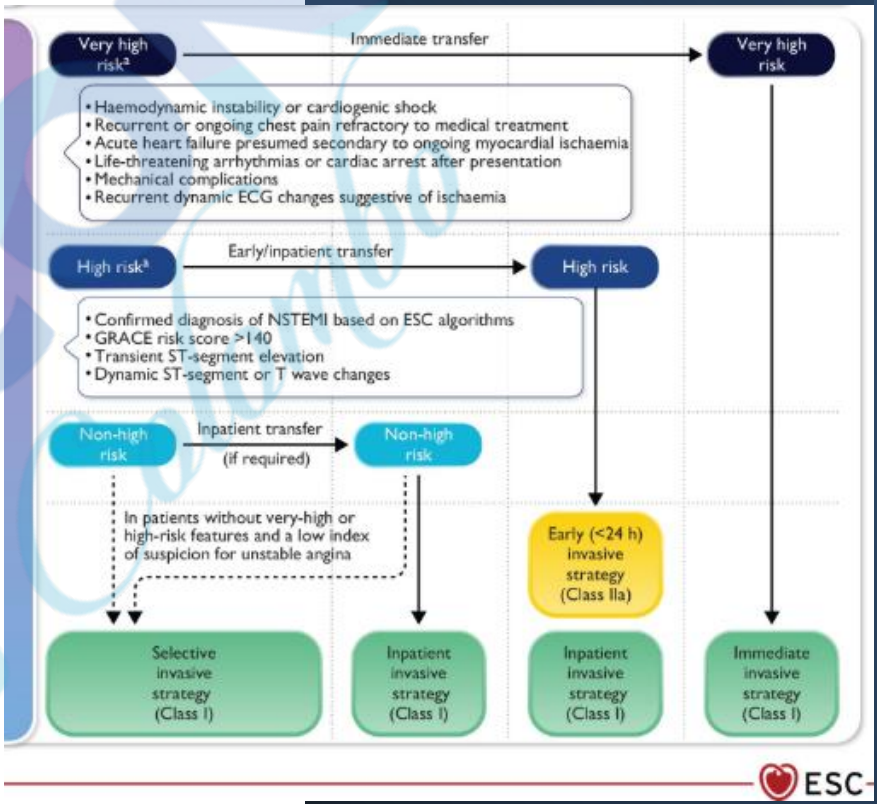
Culprit-only PCI vs Complete Revascularisation

- COMPLETE Trial: staged (index admission or within 45 days) complete PCI improves outcomes

CABG consideration in left main/multivessel + LV dysfunction

Timing of angiography in NSTEMI

- Immediate (<2h) for very high risk
- Early invasive (<24h) for high risk
- Selective invasive for low risk
- Tailoring timing improves resource use & outcomes



Device strategy

- Guidelines recommended – DES

  trend is for newer, thin strut, absorbable polymer stents ie less foot print
- Novel devices – drug coated balloons (stentless PCI) are increasingly used

  Helpful in avoiding ‘full metal jackets’

  Young patients with diffuse disease/bifurcation lesions

  Older patients with high bleeding risks

  Small vessels / in stent restenosis patients

  Emerging role in reducing stent-related complications

  Requires meticulous lesion preparation

Secondary Prevention: Foundation

- High-intensity statins for all ACS patients
- LDL-C goal <55 mg/dL or ≥50% reduction
- Add ezetimibe, bempedoic acid, inclisaran or PCSK9 inhibitors as needed

DM & Heart Failure Considerations

- SGLT2 inhibitors improve CV outcomes
- GLP-1 agonists reduce CV event risk
- ARNI/ACEI/ARB & beta blockers in LV dysfunction

Targeting residual inflammation

It is more important in reducing secondary outcomes than control of LDL

Can be measured by high sensitivity CRP

High dose statins has anti inflammatory effects

Colchicine 0.5mg OD can be added to target residual inflammation

Novel therapies being developped

Cardiac Rehabilitation

Multidisciplinary approach

Improves survival, QoL, and compliance

Underutilized in many systems → Need proactive referral

Digital Health & Telemedicine

Remote monitoring for post-ACS patients

Medication adherence apps

Virtual cardiac rehab options

AI-driven risk prediction tools emerging

Diet and exercise

- Focus on good fats
- Less carbs
- Fibre, fruits, fish and vegetables
- Keep moving

Future Directions

PERSONALIZED ANTITHROMBOTIC, ANTI INFLAMMATORY, LIPID LOWRING MEDICATIONS

REGENERATIVE CARDIOLOGY FOR MYOCARDIAL REPAIR

EXPANDED ROLE OF INTRAVASCULAR IMAGING

INTEGRATION OF AI INTO CLINICAL WORKFLOWS

WEARABLE DEVICES GIVING REAL TIME CARDIAC MONITORING AND BIOCHEMICAL PARAMETERS

Key Takeaways

Diagnosis is faster & more accurate

Therapy is more personalized

Revascularisation is increasingly imaging/physiology-guided

Secondary prevention is essential for better long-term outcomes

- Thank you!