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சுகாதாரஅமைச்சு
Ministry of Health

All Deputy Director Generals
All Provincial Directors of Health Services
All Regional Directors of Health Services
All Directors of Teaching/Provincial General/District General Hospitals
All Medical Superintendents – Base Hospitals
All Heads of the Institutions

Guidance on the provision of essential Ischemic Heart Disease care during the economic crisis of Sri Lanka: A consensus statement from the Sri Lanka College of Cardiology, Ceylon College of Physicians, Sri Lanka College of Internal Medicine and Sri Lanka College of Emergency Physicians.

Preamble

In the background of existing financial constraints, the Sri Lanka College of Cardiology (SLCC) would like to recommend following alternative cardiac management protocols as a temporary measure to overcome the shortage of essentials drugs and devices and also to ensure the fair distribution and utility of limited available resources, while ensuring the maintenance of at least the minimal standards of patient care.

This statement is designed to provide a guide to Sri Lankan Healthcare Providers on many cardiac conditions from their first contact onwards (the point-of-care) to make appropriate and best available management decisions under these circumstances.

The Guidance document is prepared by a Task Force appointed by the SLCC. The task force considered the latest published Clinical Practice Guidelines by International Cardiology Organizations and attempted to reclassify the recommendations based on the cost and availability while giving due consideration to scientific evidence. **The opinion of the Ceylon College of Physicians, Sri Lanka College of Internal Medicine and Sri Lanka college of emergency Physicians is sought to achieve a consensus.**

However, this Guidance Document does not override the individual responsibility of practicing clinicians to make appropriate and accurate decisions (clinical judgment) considering an individual patient's overall health condition and it is advisable to communicate adequately with the patient or the patient's caregiver about the circumstance and choice of management where appropriate and/or necessary (shared decision making).

The Colleges request the clinicians to use clinical evaluation and locally available low-cost diagnostic tools and treatment strategies whenever feasible.

The Colleges acknowledge the fact that sometimes a ceiling of care will be inevitable to select the groups of patients who are most likely to benefit from a drug, device, or treatment strategy, and to what degree (magnitude of the benefit).

1. Acute STEMI Care

Clinical scenarios 1: Patient presents with acute onset chest pain and has persistent ST-segment Elevation at first medical contact where an ECG is done (STEMI diagnosis)

Current international scientific recommendations

- Acute Reperfusion Therapy stands as the cornerstone of acute STEMI care according to current guidelines and should be instituted in all eligible patients' especially early presentations within 12 hours of the onset of symptoms.
- The most efficacious reperfusion therapy available is Primary PCI (p PCI) provided that it can be performed within 120 min (2hrs) of STEMI diagnosis (timely primary PCI), but it may not be the most feasible in the Sri Lankan context, given the relative paucity of PCI-capable centres.
- In settings where primary PCI cannot be offered in a timely manner (if primary PCI cannot be performed within 120 minutes/2hrs from STEMI diagnosis), Thrombolytic Therapy (TT) is recommended for early presentations (within 12 hours of symptom onset) in the absence of contraindications for TT.
- Following TT, the patients are offered pharmaco-invasive therapy (either Rescue PCI in case of failed thrombolysis or Routine Early PCI within 2-48 h in case of successful thrombolysis)
- Patients with contraindications for TT are offered primary PCI
- In patients with late presentation (time from symptom onset >12 h), a primary PCI strategy is indicated in the presence of ongoing symptoms suggestive of ischemia, hemodynamic instability, or life-threatening arrhythmias
- For late presentations, 12-48 hours after symptom onset and now asymptomatic, primary PCI strategy should be considered.

Alternative recommendations by the SLCC

Clinical scenarios 1.1: Patient STEMI diagnosis eligible to receive Acute Reperfusion Therapy

- Under the current circumstances **primary PCI is favoured over the TT** and all cardiology centres with Cardiac Catheterization Laboratory (Cath Lab) facilities are requested to run 24 h X 7 primary PCI service to accommodate a higher number of eligible patients. Point of Care Physicians is requested to liaise more frequently with cath-lab centres and local

consultant cardiologists. The relevant cardiologists are requested to make the necessary arrangements utilizing the available resources with internal arrangements. Ethylene Oxide (EO) sterilization of reusable Cath lab consumables is highly encouraged under current circumstances.

- Tenecteplase is the better thrombolytic agent for any STEMI in an ideal setting. However, due to the high cost of a Tenecteplase (TNK) vial, it **may be reasonable to triage patients and administer streptokinase for low-risk patients** and restrict the use of Tenecteplase for patients who would benefit more from it. Furthermore, TNK therapy requires subsequent administration of LMWH for a longer period, from 48 hours even up to 8 days thereby increasing the total cost per patient.

- Therefore, wider use of Streptokinase is recommended until the financial restrictions are eased.

{Note- One-year mortality rate remains in favour of accelerated TPA over streptokinase in the GUSTO1 trial (population 41,021). However, a meta-analysis of 14 studies with a total population of 142,907 showed no significant differences in mortality at 30-35 days}

Guidance for selecting the thrombolytic agent

Tenecteplase should be considered as the 1st priority in the following situations but need to consider the existing comorbidities and overall prognosis before making the decision.

Acute STEMI < 65 years of age
Acute STEMI with complications (life-threatening arrhythmias, acute heart failure)Acute Anterior STEMI
Acute STEMI with LBBB
Acute Inferior STEMI with RV infarction

The SLCC recommends clinicians at the point of care have a very low threshold to discuss with the regional cardiology centre and clear any doubt regarding equivocal ECGs, appropriate management strategy and the type of thrombolytic to be used.

Streptokinase for all other subsets of acute STEMIs. Streptokinase is the preferred option in current circumstances relatively late presentations of STEMI (more than 8hours) as the effectiveness of any thrombolytic agent wanes as time elapses

- **Clinical scenarios 1.2: Patient received thrombolytic therapy but failed to achieve adequate reperfusion criteria (Failed thrombolysis):**

Indicators of failed thrombolysis are,

- **Patient with ongoing chest pain**
- **Failure in resolution by 50% of the height of the ST segment in the lead had the tallest ST segment in the ECG done 90 minutes after initiation of the TT as compared to the pre-thrombolytic ECG.**
- **Hemodynamical instability**

Rescue PCI for failed thrombolysis is recommended.

However, the decision should be based on considering such factors as existingco-

morbidities and overall prognosis (medical futility).

Transferring to PCI centre for coronary angiogram immediately after discussing with theon-call team is recommended.

- **Clinical scenarios 1.3: Patient received thrombolytic therapy and achievedadequate reperfusion criteria (successful thrombolysis):**

Continue anticoagulants at least for 48 hours or up to 8 days especially with TNK as reinfarction rates are higher if anticoagulants are withdrawn earlier. Administration of Enoxaparin, a LMWH, is recommended following thrombolytic therapy with either SK orTNK

The ideal recommendation of transferring to a PCI centre for coronary angiogram within 24 hours is difficult to fulfil under the current socio-economic circumstances. It is reasonable to be guided by further risk stratification using a composite of, symptoms, ECHO findings and exercise ECG assessment whenever appropriate.

Clinical scenario 1.4: A patient with presenting more than 12 hours after symptom onset and STEMI is diagnosed (Late presentation of STEMI)

If there is evidence of ongoing ischemia (ongoing chest pain, dynamic ECG changes) or hemodynamic instability (pre-shock, shock, acute pulmonary oedema) or potentiallylife-threatening arrhythmias primary PCI is recommended after overall evaluation.

If the patient is stable (hemodynamically and electrically) and there is no evidence of ongoing ischemia presenting late within 12-48h not encouraged for primary PCI and

they need further risk stratification using the composite of symptoms, ECHO, timedexercise ECG assessment and subject to revascularization accordingly.

- Special emphasis not to waste lab resources

Acute STEMI is an ECG diagnosis together with clinical presentation and routine use of troponin is not recommended by SLCC under the current situation, unless for doubtful cases.

2. Acute NSTE Coronary Syndrome Care: Non-ST elevation MyocardialInfarction (NSTEMI) and Unstable Angina (UA)

Clinical scenarios 2: Patient present with acute onset chest pain without persistent ST-segment Elevation at first medical contact where an ECG is done

Current international scientific recommendations

- Step 1: Use history taking to categorize chest pain into Typical angina, Possible angina and non-anginal (or non-cardiac) chest pain
- Step 2: Use CCS classification to determine the severity
- Step 3: Determine the clinical stability and confirm Acute vs non-acute coronary syndrome: Diagnose ACS if CCS class 4 or CCS class 3 within 2 weeks or deteriorationby 2 CCS classes at least up to Class 3 within 2 weeks

- Step 4: Risk stratification using a Risk Tool i.e. HEART, GRACE, TIMI scores and determine the management pathway (early invasive or initial conservative medical therapy)

SLCC recommends the use of the HEART score for risk stratification at point-of-care

HEART score incorporates 5 parameters

1. History: (inexpensive item)

- 2: Highly suggestive of cardiac origins
- 1: Moderately suspicious
- 0: Slightly suspicious

2. ECG: (low expensive item)

- 2: Significant ST depression

- 1: Non-specific repolarization differences
- 0: Normal

3. Age: (inexpensive item)

- 2: >65 years
- 1: 45-65 years
- 0: <45 years

4. Risk factors: (inexpensive item)

- 2: 3 or more risk factors or history of atherosclerotic disease
- 1: 1-2 risk factors
- 0: No known risk factors

5. Troponin: (relatively expensive item)

- 2: >3 x normal limit
- 1: 1-3 x normal limit
- 0: Within the normal limit

Interpretation:

<u>HEART score <4:</u>
Low risk (0.9-1.7%) of Major Adverse Cardiac Events (MACE) at 6 weeks
Can be considered for direct ED discharge or early discharge

<u>HEART score 4-6:</u>
Moderate risk (12-16.6%) of MACE at 6 weeks
Recommend admission for medical optimization and further workup

<u>HEART score >6:</u>
High risk (50-65%) of MACE at 6 weeks
Recommend for early coronary angiogram

Alternative recommendations by the SLCC

- Clinicians are requested to recognize high-risk patients early and contact on-call cardiologists at the nearest cath lab centre to inquire into the feasibility of an early invasive strategy. Moderate risk patients are recommended for admission for medical optimization and further risk stratification.
- Mild risk patients can be considered for early discharge and interval risk stratification using non-invasive ischemic testing as appropriate

- Enoxaparin is the preferred parenteral anticoagulant. Duration is at least 48 hours from the last limiting symptoms or during index hospital admission up to 8 days

- Performing highly sensitive troponin at very early hours of NSTEACS is not recommended. cTn is just one of the risk stratification markers (though the strongest). Earlyuse of cTn would often need a second sample to look for delta change denoting acute myocardial injury. Therefore, the SLCC recommends limiting the cTn assay to a single sample done 6 hours after the symptom onset irrespective of the type of assay highly sensitive troponin or conventional troponin.

- Patients presenting with non-anginal chest pain and having low pre-test probability for obstructive coronary artery disease as determined considering the sex and age factors do not need blood sampling for cTn.

- Patients presenting obviously non-anginal chest pain and having a low pre-test probability for obstructive coronary artery disease should not be treated with Enoxaparin

- Exercise ECG is recommended as the non-invasive ischemic testing of choice provided the patient is clinically compensated, able to exercise and the ECG is interpretable forreversible ischemia

3. Chronic Coronary Syndrome (Stable Angina) Care

Clinical scenarios 3: Patient present with chest pain or dyspnea deemed non-acute on clinical evaluation

Current international scientific recommendations

Step 1: Verify non-acute nature (i.e. absence of acute criteria on the CCS severity scale and time since the onset of the episode)

Step 2: Determine the medical futility of escalating the care

Step 3: Do echocardiogram to assess LVEF

Step 4: Assess EVENT RISK with clinical parameters and appropriate use of invasive ornon-invasive ischemia testing

- Following patients are offered Invasive Coronary Angiogram
    - LV dysfunction (LVEF <50%) suggestive of CAD
    - Typical angina at low levels of exertion and Ex ECG showing high event risk
    - Symptoms refractory to OMT and high clinical likelihood (high Pretest probability PTP on Diamond Forrester chart together with the presence of Risk factors, ECG changes, LVEF< 50%, positive Exercise ECG)

- The other group of patients are offered non-invasive testing for ischemia to diagnose and assess event risk

Alternative recommendations by the SLCC

- Exercise ECG is recommended as the non-invasive ischemic testing of choice (to diagnose and more importantly assess event risk) provided the patient is clinically compensated, able to exercise and the ECG is interpretable for reversible ischemia

- Encourage the medical management with cheap yet best available medication over invasive evaluation in these circumstances

- Identification of patients with high event risk by using an Echocardiogram and exercise ECG is recommended.

- Should focus mainly on the class of drugs with a good level of evidence for reductions in mortality, morbidity, and recurrent hospitalizations.

- **Review the duration of dual antiplatelet (DAPT) therapy. DAPT is recommended only up to one year after ACS irrespective of whether stenting was done or not.**

- Clinicians are requested to liaise with the Cardiologist to determine the duration of DAPT in patients who have undergone coronary revalorization (PCI or CABG)

- Review the prescription regularly to do away with non-essential drugs, vitamins, anti-GORD medications, synthetic PUFAs etc

- For the Cardiologists, routine interventions for Chronic Total Occlusion CTO and non-urgent coronary lesions are discouraged in this situation.

Please bring the content of this circular instructions to all the officers under your purview.

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Cc -:

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5. D/TCS, D/MS, D/MSD
6. D/Health Care, Quality and Safety