



**Government of West Bengal**

**State NCD Cell**

**Health & Family Welfare Department**

**National Health Mission**

**GN-29, 3<sup>rd</sup> Floor, Swasthya Sathi Building, Swasthya Bhawan Premises, Sector - V  
Salt-Lake, Bidhannagar, Kolkata – 700091**

Memo no. HFW-27024/48/2023-NCD SEC-Dept. of H&FW / 545/2024 Dt. 8/11/24

To:

**The Director, IPGMER & SSKMH  
All the Principals, Govt. MCHs  
All the MSVPs, Govt. MCHs  
All the Chief Medical Officer of Health  
All the Superintendents & BMOHs**

**SUB: STANDARD MANAGEMENT PROTOCOL OF A STEMI/ AMI CASE under Tele-cardio project in W.B.**

Myocardial infarctions are generally clinically classified into ST elevation MI (STEMI) and non-ST elevation MI (NSTEMI), based on changes in ECG. Only 20–30% of patients presenting with acute chest pain are ultimately confirmed to have STEMI upon detailed evaluation.

In India, STEMI is estimated to account for more than 2.5 million cases annually (approximately 40% of all myocardial infarctions) and the mortality of all STEMI & NSTEMI cases are 15%. In West Bengal during 2022-23, a number of 24K cases of suspected AMI were reported, of which 20~30% may be classical STEMI and 40~60% may be Non-STEMI/ unstable angina.

Apropos Dept. of Health & FW, have roll-out a Tele-cardio/ STEMI project in a Hub-Spoke model across the state. Adopting a simple standard treatment protocol for management of STEMI/Acute MI is the first step to ensure treatment compliance and to prevent premature mortality and complication.

Thus, a STANDARD MANAGEMENT PROTOCOL OF STEMI /AMI is hereby prepared by eminent cardiologists of our various medical colleges and hereby annexed for dissemination and compliance please.

All concerned are hereby informed for necessary compliance

*[Handwritten Signature]*  
08.01.24

**Director of Health Services  
Dept. of Health & FW  
Govt. of West Bengal**

*[Handwritten Signature]*  
08/11/24

**Director of Medical Education  
Dept. of Health & FW  
Govt. of West Bengal**

## STANDARD MANAGEMENT PROTOCOL OF STEMI /AMI

If a patient presented with chest pain in emergency department

Do 12 lead ECG

Trop T (If chest pain duration at least 3-6hr otherwise it will be false negative with conventional trop T)

Chest x ray PA View (to rule out pneumonia/pneumothorax/widened mediastinum in aortic dissection)

If initial investigation nondiagnostic then repeat ECG and trop T can be repeated in 1-3 hours if ongoing chest pain or with patient having risk factors

- DM
- HYPERTENSION
- DYSLIPEDEMIA
- Family h/o of ACS
- Patient having addiction (smoking /alcohol/tobacco)

### ECG diagnosis of Acute Myocardial Ischaemia

#### ST Elevation

- New ST elevation at the J point in two contiguous leads with the following cut point
- $\geq 0.1$  mV in all leads (except V2-V3)
- In leads V2-V3 the following cut points apply
- $\geq 0.2$  mV in men  $\geq 40$ yr
- $\geq 0.25$  mV in men  $< 40$  yr
- $\geq 0.15$  mV in women

#### ST Depression and T wave changes

- New horizontal and downsloping ST depression  $\geq 0.05$  mV in two contiguous leads
- T wave inversion  $\geq 0.1$  mV in two contiguous leads with prominent R wave or R/s  $> 1$

### Management of STEMI

$< 12$  hr duration from onset of chest pain:

**Loading dose** :if age  $< 75$  years

- ASPIRIN 300 mg
- CLOPIDOGREL 300 mg
- ATORVASTATIN 80 mg

If age  $> 75$  years

- ASPIRIN 300 mg
- CLOPIDOGREL 75 mg
- ATORVASTATIN 80 mg

**Thrombolysis if no contraindication :**

**Absolute Contraindication:-**

- Any previous intracranial haemorrhage
- Ischemic stroke within 3 months except acute ischemic stroke within 4.5 hours
- Known structural cerebral vascular lesion (e.g arterio-venous malformation)
- Known malignant intracranial neoplasm (primary or metastatic)
- Suspected aortic dissection
- Active bleeding or bleeding diathesis (excluding menses)
- Significant closed head or facial trauma within 3 months
- Intracranial or intraspinal surgery within 2 months
- Severe uncontrolled hypertension (unresponsive to emergency therapy)
- For streptokinase, previous treatment within the previous 6 months

**Relative contraindication:-**

- History of chronic, severe, poorly controlled hypertension.
- History of ischemic stroke >3 months.
- Dementia
- Known intracranial pathology not covered in absolute contraindication
- Traumatic or prolonged (>10 min) cardiopulmonary resuscitation.
- Major surgery (<3 weeks)
- Recent (within 2 to 4 weeks ) internal bleeding.
- Non-compressible vascular punctures
- Pregnancy
- Active peptic ulcer
- Oral anticoagulant therapy
- Significant hypertension at initial evaluation (SBP >180 or DBP >110 mm Hg)

**(Thrombolysis can be done after lowering the BP give inj Lebetolol 20 mg iv stat over 5min .Repeat dose may be needed or inj GTN infusion 5mg in 500 ml NS @ 30micro drops/min {5mcg/min} recheck BP after 30min )**

**Thrombolytic agent:**

1. Inj STREPTOKINASE (STK)1.5 MU in 100 ml NS over 45 min
2. Inj Tenecteplase (TNK) iv bolus stat (0.53mg/kg)
  - i. 60-70 kg :35mg
  - ii. >70kg :40mg
  - iii. 50-60 kg :30 mg

**Special situation:**

- If age more than 75 years give half dose of TNK or inj STK same dose
- If patient received inj STK in last 6month then give inj TNK for thrombolysis

**Anticoagulation :**

- If the patient is thrombolysed with STK then start inj enoxaparin / inj UFH 6hour after thrombolysis
- If thrombolysis with TNK then give inj enoxaparin 30mg iv stat before TNK and 1mg/kg after 15min of TNK
  - Dose : inj Enoxaparin 1mg /kg sc/c BD
  - Typically 60mg s/c BD for healthy patient and 40 mg s/c BD for lean & thin patient
  - Inj UFH 60 U/kg bolus and 12 U/Kg/hr
  - Typically inj UFH 5000 U iv TDS is given

**If duration 12-24 hr from onset of chest pain :**

Loading dose and anticoagulation as earlier thrombolysis is only given if young patient age <65 years with:

- Ongoing chest pain
- Hemodynamic instability
- Large myocardium at risk

**If duration more than 24hr from onset of chest pain :**

Loading dose and anticoagulation as earlier No thrombolysis is given

**Antiplatelet and Statin :**

Loading dose followed by maintenance dose

Tab Aspirin+clopidogrel (75/75 ) 1tab ODPC

Tab atorvastatin (80mg)1tab ODHS

**Supportive therapy :**

**AWMI**

1. Betablocker : metoprolol /carvedilol ( except when there are signs of heart failure and/or hypotension)
2. ACEI : Ramipril (starting dose 1.25 mg to maximum 10mg)
3. If HEART Failure or low EF(extensive AWMI/QRBB AWMI ECG wise)
  - a. Inj Lasix 20mg iv BD
  - b. Tab Spiranolactone 25 mg 1tab OD
4. If BP is less then <90 mmHg or patient is in cardiogenic shock then start inj NORADRENALIN (0.05mcg/kg/min)

Typically starting dose 1amp(4mg) in 500ml @ 20 microdrops/min

### **IWMI**

1. ACEI : Ramipril (starting 1.25mg to 10mg)
2. Betablocker can be given if there is no AV block and generally given during discharge
3. If AV block then inj atropine 1amp iv sos And adenosine antagonist tab Doxophylline 400 mg 1tab BD till block persist
4. If suspected RVMI then IVF with NS 500ml every 8hr is given (if patient is in shock brisk administration of 1li or more fluid may be given but needs hemodynamic monitoring )
5. In case of RVMI nitrates and diuretics should be avoided

### **For ongoing pain :**

- Inj Morphine 3mg iv stat slowly along with inj ondansetron 8mg iv stat
- For ongoing pain tab Nicorandil 5mg 1tab BD can be given or nicorandil infusion 2mg/hr (1amp 48mg in 500ml @ 20 microdrops/min)

### **Miscellaneous :**

- Tab pantoprazole 40 mg 1tab ODAC
- Tab Alprax 0.5mg 1tab ODHS
- Syr Lactulose 15ml at HS

### **DIABETIC PATIENT :**

Tab Dapaglifozine(10mg) /empaglifozine (10/25 mg ) can be started along with / without Inj insulin

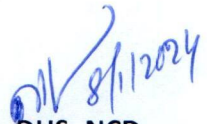
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/545/2024/Dt. 8/1/24  
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Copy forwarded for information & necessary action please: -

1. The Mission Director & Secretary, Govt. of West Bengal
2. The Director, IPGMER & SSKMH
3. All the Principals, Govt. MCHs
4. Addl. Mission Director, (NHM)
5. Director, Public Health
6. Jt. DHS, NCD-II
7. All the MSVPs, Govt. MCHs
8. ADHS, NCD-II
9. Chief Medical Officer of Health, all districts & health districts
10. Dy. CMOH-IV and DNO, all districts & health districts for compliance
11. Superintendents and BMOHs, all facilities
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Dy. DHS, NCD  
Govt. of West Bengal

**Duty roster of Tele-cardio Hub Specialists**

Days of Week	Name of Hub	Name of Specialist	Contact No.	Time Shift	Date
Monday	IPGMER	Dr Amrithesh Biswas	7319274458	8 AM - 2PM	15/01/2023
		Dr Indranil Ghosh	9007600881	2PM - 8PM	15/01/2023
		Dr Ferouz Bandey	7006933361/7449564595	8PM - 8AM	15/01/2023
		Dr Sabyasachi Roy	9432370021	8 AM - 2PM	22/01/2023
		Dr Nur Nabab	8961606174/9674222526	2PM - 8PM	22/01/2023
		Dr Nilesh Giri	8293245900	8PM - 8AM	22/01/2023
		Dr Suman Ghosh	7602130963/9563721164	8 AM - 2PM	29/01/2023
		Dr Himadri Roy	9674093060	2PM - 8PM	29/01/2023
		Dr Sunanda Ghosh	9903277134/9674802249	8PM - 8AM	29/01/2023
		Dr Manikanta Majhi	9474786435/8918618932	8 AM - 2PM	05/02/2023
		Dr Subhabrata Patra	8777070661	2PM - 8PM	05/02/2023
		Dr Gaurav Lakhani	9687465051	8PM - 8AM	05/02/2023
		Dr Mrinal Kanti Manna	7384123700	8 AM - 2PM	12/02/2023
		Dr Bablu Nandi	9474188961	2PM - 8PM	12/02/2023
		Dr Dharmendra Kumar	8583930103	8PM - 8AM	12/02/2023
		Dr Ritwik Ghosal	7586051589	8 AM - 2PM	19/02/2023
		Dr Pranabananda Pal	9046313040	2PM - 8PM	19/02/2023
		Dr Abhisekh Naskar	8981644154	8PM - 8AM	19/02/2023
Dr Asmita Das	9560197085	8 AM - 2PM	26/02/2023		
Dr Amitesh Ranjan	7903144148	2PM - 8PM	26/02/2023		
Dr Anubhab Prakash	7488897344	8PM - 8AM	26/02/2023		
Tuesday	R.G Kar MCH	Dr Sagarjyoti Roy	9674591684	8AM - 4PM	
		Dr Mita Bar (SR)	9051610481	4PM - 12AM	
		Dr Nikita Kumari	7838651208	12AM - 8AM	
		Dr Purnendu Dash	8116891080	12AM - 8AM	
		Dr Niladri Ghosh	8512925707	8AM - 4PM	
		Dr Abhijit Das	8240112569	4PM - 12AM	
		Dr Krishanko Das	9435257166	12AM - 8AM	
		Dr Shibsankar Sarkar	7005579508	8AM - 4PM	
		Dr Arunava Mitra	8336875895	4PM - 12AM	
Dr Anindya Mondal	9883995430	12AM - 8AM			
Wednesday	K.M.C.H	Dr. Aritriyo Mandal	9433484643	8AM - 4PM	1 <sup>st</sup> On Call
		Dr. Kuntal Saha	8981392466	4PM - 12AM	1 <sup>st</sup> On Call
		Dr. Debabrata Sarkar	9064071041	12AM - 8AM	1 <sup>st</sup> On Call
		Dr. Arshdeep Singh Sandhu	8968128880	8AM - 4PM	2 <sup>nd</sup> On Call
		Dr. Subhadip Roy	9832767330	4PM - 12AM	2 <sup>nd</sup> On Call
		Dr. Vaibhav Meshram	8269320322	12AM - 8AM	2 <sup>nd</sup> On Call
		Dr. Aditi Rastogi	9831193318	8AM - 4PM	3 <sup>rd</sup> On Call
		Dr. Arindam Mitra	9830094360	4PM - 12AM	3 <sup>rd</sup> On Call
		Dr. Bipul Roy	9433609737	12AM - 8AM	3 <sup>rd</sup> On Call
Dr. Krishnendu Bera	9051862047	8AM - 4PM	4 <sup>th</sup> On Call		
Dr. Anjan Hembram	9432430768	4PM - 12AM	4 <sup>th</sup> On Call		
Thursday	C.N.M.C.H	DR. RAJEEV RANJAN	8582859915	8AM - 1PM	
		DR. ARNAB KR MANDAL	7063465573	1PM - 6PM	
		DR. ANIL KR SINGH	9458286084	6PM - 11PM	
		DR. KAPIL DEV MONDAL	9933393346	11PM - 8AM	(1st ,3rd, 5th Week)
		DR. ASISH SUMAN	7033611419	11PM - 8AM	(2nd and 4th Week)
		Dr Pritam Kumar Chattarjee	9933371881	-	
Friday	N.R.S.M.C.H	Dr. Prमित Kumar Maji	8900194629	8AM - 4PM	
		Dr. Biaus Samanta	9007006608	4PM - 12AM	
		Dr. Vijai Kumar Rai	8318968094	12AM - 8AM	
Saturday	B.M.C.H	Dr Md Miraj Mondal	9432963674	8 AM - 2 PM	
		Dr Sk. Minhaj Uddin Siraj	9679304429	2 PM - 10 PM	
		Dr Hrishikesh Chakroborty	9735192614	10 PM - 8 AM	
		Koushik Mondal	9143118887	8 AM - 2 PM	
		Dr Gourav Bhattacharya	7980667907	2 PM - 10 PM	
		Dr Ramdhan Kumar Kamat	7739301047	10 PM - 8 AM	
		Satyaki Dutta	9433303017	8 AM - 2 PM	
		Dr Yashpal Yadav	9936000885	2 PM - 10 PM	
		Mantu Ghosh	9903761439	10 PM - 8 AM	
		Shubhashis Mahato	9800982346	2 PM - 10 PM	
Suvojit Das	8016422159	10 PM - 8 AM			
Sunday (1st and 3rd)	B.M.C.H	Dr Soumitra Dey	9064470137	8 AM - 4 PM	
	B.M.C.H	Dr Radha Binod Pal	9732087986	4 PM - 11 PM	
	B.M.C.H	Dr Soumyadip Batyabal	9873759724	11 PM - 8 AM	
	B.M.C.H	Dr Vinay Kr Singh	8250694133	8 AM - 4 PM	
	B.M.C.H	Dr Gourav Shakti	9800982166	4 PM - 11 PM	
	B.M.C.H	Dr Swapan Kr Kar	9434314449	11 PM - 8 AM	
Sunday ( 2nd, 4th) & (5th Alternatively with B.S.M.C.H	Medinipur M.C.H	Dr. Malay Acharyya	9434312816	8 AM - 2 PM	
	Medinipur M.C.H	Dr. V S Sharma	9432511789	2 PM - 10 PM	
	Medinipur M.C.H	Dr. Abinash Agarwala	9830574095	10 PM - 8 AM	
	Medinipur M.C.H	Dr. Pallab Biswas	9748939338	8 AM - 2 PM	
	Medinipur M.C.H	Dr. Kamalesh Gorai	9903910820	2 PM - 10 PM	
	Medinipur M.C.H	Dr. Debopam Goswami	7044466943	10 PM - 8 AM	