

	Department Name Address	ALS	Paramedic
		Revision #	
		Implementation Date	
Protocol	2.1.9 Chest Pain and AMI	Last Reviewed/Update Date	
Author / Owner		Medical Director	

Objectives: Appropriate treatment of the patient includes: obtaining appropriate history, performing a physical exam including a 12 lead EKG, timely and safe transport, early notification to the emergency department of the patient's complaint and condition, and the patient's 12 Lead EKG findings (especially important in the case of an ST elevation myocardial infarction). A follow up report to the emergency department 10 minutes prior to arriving is also necessary.

1. Baseline care standards.
2. Place patient in a position of comfort.
3. Administer oxygen by non-rebreather mask at 15L per minute.
4. Establish a 12 Lead EKG and transmit to the receiving ER or notify medical control of ST segment elevation.
 - Early notification of medical control is important in mobilizing cath lab personnel for definitive treatment of the acute ST elevation MI patient.
5. Continue cardiac monitoring. Treat dysrhythmias by protocol.
6. Administer:
 - *Aspirin 325 mg PO, if no contraindications.*
7. Begin transport as soon as practical in a safe and efficient manor.
 - Minimize stress to the patient.
 - Patients with chest pain and stable vital signs should not be transported with lights and sirens, unless long delays in transport will be avoided by doing so.
8. For drug dosages or treatment outside protocol, obtain verbal orders after consultation with the medical control physician.
9. Administer the following medications for pain control:
 - *Nitroglycerine 0.4mg SL. May repeat every 3 – 5 minutes until pain is fully relieved or a total of three doses have been given. Monitor blood*

pressure prior to each dose and discontinue if systolic is <90mmHg. Be especially cautious of hypotension in inferior Acute Myocardial Infarction

- *Nitroglycerine by IV drip at 5 mcg / minute.* Increase by 5 mcg / minute every five minutes until pain is relieved, blood pressure drops below 100 mmHg or dosing reaches 50 mcg / minute. If no relief from nitroglycerine, administer:
- *Morphine Sulfate 2 mg. IV. May repeat every 5 minutes as necessary.* Monitor blood pressure and level of consciousness closely. Hold if blood pressure <90 mmHg systolic.

10. Administer the following for reduction of myocardial demand:

- *Metoprolol 5 mg/IV every 5 minutes for a total of three doses.* Hold if blood pressure is <90 mm/hg or if heart rate is <60 bpm. Be especially cautious of hypotension in inferior Acute Myocardial Infarction.

11. If patient has nausea, administer:

- *Promethazine 12.5 - 25mg IV.*

12. If MI is confirmed by 12 lead ECG, no contraindications, and online medical control concurs, administer:

- *Heparin 70 u/kg IV bolus (max 10,000 u), followed by infusion 15 u/kg/hr (max 1500 u/hr).*

13. Consider initiation of thrombolytic therapy:

- Transmittal of 12 lead EKG to receiving facility and consultation with Medical Direction. ST elevation and MI is diagnosed.
- Complete thrombolytic check sheet prior to administering thrombolytics or arrival at receiving facility. The following must be answered true or yes:
 - Chest pain has lasted more than 15 minutes, but less than 12 hours and not relieved with nitroglycerine.
 - ECG is consistent with AMI.
 - Patient has cardiac risk factors or history.
 - The patient is conscious, alert, and oriented x 4.
- The following check list must all be answered false or no:
 - Systolic BP is greater than 180 mmHg.
 - Diastolic BP is greater than 110 mmHg.
 - Right arm BP vs. Left arm BP is greater than 15 mmHg difference.
 - History of structural central nervous system disease.
 - Head or facial trauma within the last 3 months.
 - Major trauma, surgery, or GI bleed within the last 6 weeks.
 - Patient is on blood thinner medication or history of bleeding or clotting problems.

- Pregnancy.
- Patient has had CPR administered for greater than 10 minutes.
- Has history of advanced cancer, severe liver or renal disease.
- Prior allergic reaction to some thrombolytics.
- Establish 2 IV's. One for thrombolytic and one for lidocaine and heparin. Administer:
 - *Lidocaine 2 – 4 mg/kg IV infusion.*
- Administer one of the following thrombolytics:
 - *Alteplase (TPA) IV. If patient's weight is greater than 67kg (147 lbs) administer:*
 - *15 mg IV bolus, then*
 - *50 mg over next 30 minutes, then*
 - *35 mg over next 60 minutes. Total of 100mg IV.*
 - *If patient's weight is less than 67kg (147 lbs) administer:*
 - *15 mg IV bolus, then*
 - *0.75 mg/kg over next 30 minutes, then*
 - *0.5 mg/kg over next 60 minutes.*
 - *Streptokinase 1.5 million units IV over 60 minutes. Avoid retreatment as antibodies may develop. Caution in people with Strep infection. Monitor for hypotension (common) and treat with fluids.*
 - *Tenecteplase (TNKase) IV based on weight of patient:*
 - *Less than 60kg (132 lbs) - 30mg IV bolus over 5 seconds.*
 - *60 – 69kg (132 – 152lbs) - 35mg IV bolus over 5 seconds.*
 - *70 – 79kg (154 – 174lbs) - 40 mg IV bolus over 5 seconds.*
 - *80 – 89kg (176 – 196lbs) - 45 mg IV bolus over 5 seconds.*
 - *Greater than 90kg (198lbs) - 50 mg IV bolus over 5 seconds.*
- Expect reperfusion dysrhythmias.
- Avoid unnecessary arterial or venous punctures. Compress all puncture sites x 30 minutes.
- NO IM injections.

14. Transport to appropriate facility.

Medical Director's Signature

Date

Disclaimer:

The protocols have been developed by the North Dakota Department of Health are meant to be used as general guidance for developing protocols for individual emergency medical services agencies. These sample protocols are not meant to be medical or legal advice; nor do they establish standards of care. Each emergency medical services agency must tailor protocols based on their specific needs or capabilities. Local medical directors must be consulted with and approve any protocol(s) prior to becoming operational in an emergency medical services agency. directors must be consulted with and approve any protocol(s) prior to becoming operational in an emergency medical services agency. The North Dakota Department of Health make no representation on the accuracy of information contained herein and accepts no liability for any loss or damage arising from any content error or omission.