



# MIAMI TOWNSHIP FIRE & EMS CLERMONT COUNTY, OHIO *MEDICAL PROTOCOLS*

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## ACUTE CORONARY SYNDROMES (CHEST PAIN)

### Historical Findings

1. Age  $\geq$  30 years. **If age < 30 years, consult with Medical Command.**
2. Chest pain description suggests cardiac origin (heaviness, pressure, tightness, dull) and *may* be accompanied by shortness of breath, diaphoresis, nausea, vomiting or weakness.
3. Pain is not clearly pleuritic or musculoskeletal. If any doubt exists, treat as cardiac.
4. Evaluate risk factors.

### Physical Findings

1. Pulse between 60 and 130 beats per minute.

### Differential Diagnosis

- |                           |                       |
|---------------------------|-----------------------|
| 1. Non-cardiac chest pain | 5. Pulmonary Embolism |
| 2. COPD                   | 6. Pneumonia          |
| 3. Cardiogenic shock      | 7. Pleurisy           |
| 4. Arrhythmia             | 8. Pericarditis       |

### Protocol

1. Initiate contact; reassure, and explain procedures.
2. Assess and secure the patient's airway and provide oxygen per the airway, oxygen and ventilation protocol.
3. Perform patient assessment, obtain vital signs and begin cardiac monitoring.
4. Acquire a 12 Lead ECG and maintain cardiac monitoring at all times.
  - A. Notify the receiving emergency physician if an Acute Myocardial Infarction (AMI) is suspected.
  - B. Transmit the 12 Lead ECG to the receiving hospital if possible for Cath Lab activation.
  - C. Begin the Cardiac Alert checklist.



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5. Initiate IV access with a saline lock or 0.9 % normal saline KVO.
  - A. The left arm is the site of choice to facilitate Cardiac Cath Lab procedures and two IV lines are preferred.
6. Administer aspirin (ASA) 324 mg PO (chewed).
  - A. Withhold aspirin for any of the following:
    - ii. Allergy to ASA or NSAIDS.
    - iii. Recent GI bleeding.
    - iv. Acute hemorrhagic stroke.
7. Administer nitroglycerin (nitrolingual) 0.4 mg SL every 3-5 minutes for a total of 3 doses.
  - A. Withhold or discontinue **all** nitrates for any of the following:
    - ii. Systolic blood pressure  $\leq$  100 mmHg.
    - iii. Recent erectile dysfunction drug use:
      1. Viagra  $\leq$  24hrs.
      2. Cialis, levitra  $\leq$  48 hrs.
  - B. Use nitrates with caution in patients with right ventricular infarction (RVI).
8. Patients who have no relief of pain after three doses of nitroglycerin (nitrolingual) SL and NO obvious acute ECG changes do not require administration of additional nitroglycerin.
9. Administer nitroglycerin paste (nitro-bid) TD 1 inch to the left chest if:
  - A. ST elevation consistent with an acute injury pattern is present on 12 Lead ECG. This can be administered with the first SL dose.

**OR**
  - B. Patients have partial or complete relief of pain after three doses of nitroglycerin SL and if blood pressure remains  $\geq$  100 mmHg systolic.
10. If the patient experiences any change in level of consciousness remove the nitroglycerin paste (nitro-bid).
11. If systolic blood pressure drops below 100 mmHg and lung sounds are clear administer a 500 cc normal saline bolus and reevaluate. Discontinue the use of nitrates at this point and manage hypotension per the cardiogenic shock protocol.



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12. Administer morphine sulfate 2 mg IV for ischemic chest pain every 2 minutes up to a total dose of 10 mg.
  - A. Withhold or discontinue morphine sulfate if systolic blood pressure  $\leq$  100 mmHg.
13. Administer metoprolol (lopressor) 5 mg slow IV over 2 minutes repeated every 5 minutes for a total of 3 doses for patients with ST elevation consistent with an acute injury pattern (AMI) on 12 Lead ECG.
  - A. Withhold or discontinue metoprolol (lopressor) for any of the following:
    - i. Heart rate  $\leq$  60.
    - ii. High grade AV block (2<sup>o</sup> mobitz II/ 3<sup>o</sup> AV block)
    - iii. Systolic blood pressure  $\leq$ 100 mmHg.
    - iv. Patients who are experiencing respiratory distress with bronchospasms (wheezes).
    - v. Cocaine induced or related myocardial infarction.
14. Naloxone (narcan) 0.5 mg IV titrated up to 2 mg or 2 mg IN/IM may be administered for respiratory depression associated with morphine.
15. Ondansetron (zofran) 4 mg slow IV over 2 minutes or IM may be administered for nausea and or vomiting.
16. Lorazepam (ativan) 1 mg IV diluted may be administered for anxiety.
17. Nitroglycerin (nitrolingual) 0.4 mg SL can be continued up to a total of 6 doses, continued as outlined in line 7 of this protocol.
  - A. The continuation of SL nitrate after 3 doses should be reserved for patient's who are not candidates for other pharmacologic therapies outlined in this protocol (ie: morphine, metoprolol) due to the risk for hypotension.