

Protocol 2-1

SECTION: Adult Cardiovascular Emergencies

PROTOCOL TITLE: Medical – Chest Pain – Cardiac Suspected

REVISED: 07/2017

OVERVIEW:

Non-traumatic chest discomfort is a common pre-hospital patient complaint. It always should be considered life-threatening until proven otherwise. The discomfort may be caused by acute myocardial infarction (AMI) or angina pectoris, which is a sign of inadequate oxygen supply to the heart muscle. Risk factors which increase the likelihood of heart disease include > 50 years of age, history of hypertension, diabetes mellitus, hypercholesterolemia, smoking, and strong family history of coronary artery disease.

HPI	Signs and Symptoms	Considerations
<ul style="list-style-type: none"> Age Medications PMH (MI, Angina, DM, HTN) Allergies (ASA, Morphine) Recent physical exertion Onset Quality (crushing, sharp, dull, constant, etc.) Region/ Radiation / Referred Severity (1 - 10) Time (duration / repetition) Erectile dysfunction medications such as: Viagra® (Sildenafil), Levitra® (Vardenafil), Cialis® (tadalafil) 	<ul style="list-style-type: none"> CP (pressure, aching, burning, indigestion and / or tightness) Location (sub-sternal, epigastric, arm, jaw, neck, shoulder) Radiation of pain Pale, diaphoresis Shortness of breath Nausea, vomiting, dizziness Non-specific illness 	<ul style="list-style-type: none"> Trauma vs. Medical Angina vs. MI Pericarditis Mitral valve prolapse Pulmonary embolism Asthma / COPD Pneumothorax Aortic dissection or aneurysm GI reflux, hiatal hernia Esophageal spasm Chest wall injury or pain Pleural pain Musculo-skeletal pain

	EMR	EMT	A	I	P
1. Perform general patient management.	•	•	•	•	•
2. Support life-threatening problems associated with airway, breathing, and circulation.	•	•	•	•	•
3. Treat dysrhythmias. Be prepared to initiate CPR and defibrillation, if necessary.	•	•	•	•	•
4. Administer supplemental oxygen to maintain <u>SPO₂</u> 94 - 99%	•	•	•	•	•
5. Obtain patient history. Reassure the patient.	•	•	•	•	•
6. Place patient on cardiac monitor.		•	•	•	•
a. Obtain a <u>12 lead ECG</u> , <10 minutes of pt arrival.		•	•	•	•

NON-TRAUMATIC CHEST DISCOMFORT

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NON-TRAUMATIC CHEST DISCOMFORT

	EMR	EMT	A	I	P
b. Consider ALS rendezvous, especially when the 12-lead indicates the patient is experiencing a STEMI.		•	•		
c. When a 12 lead ECG indicates “***ACUTE MI***” notify closest appropriate Emergency PCI center (cath hospital) in < 5 minutes.		•	•	•	•
7. Transport as soon as feasible.		•	•	•	•
8. Administer <u>ASPIRIN</u> 324 mg to chew .		•	•	•	•
9. Establish an IV of normal saline at KVO.			•	•	•
10. If history consistent with cocaine associated chest pain and 12 lead not indicative of STEMI, administer <u>MIDAZOLAM</u> 5 mg IV. Alternatively administer <u>DIAZEPAM</u> 2.5 - 5 mg IV. Skip to step 14				•	•
11. Administer <u>NITROGLYCERIN</u> .					
a. Assist patient with PRESCRIBED NITROGLYCERIN. If the pain persists and B/P > 100 mmHg systolic, repeat nitroglycerin 0.4 mg SL in 3 to 5 minutes (up to total of three SL doses).		•	•	•	•
b. Administer nitroglycerin 0.4 mg SL. If the pain persists and B/P > 100 mmHg systolic, repeat nitroglycerin 0.4 mg SL in 3 to 5 minutes (up to total of three SL doses).			•	•	•
12. If pain persists following administration of nitroglycerin SL, apply one (1) inch of nitroglycerin paste.			•	•	•
13. If pain persists following administration of a minimum of 3 SL nitroglycerin and nitroglycerin paste, consider <u>FENTANYL</u> titrated to pain relief at 1 mcg / kg IV/IM, not to exceed 100 mcg per single dose. May repeat every 10 minutes. Alternatively, administer <u>MORPHINE</u> 0.1 mg / kg IV at 1 mg / min., not to exceed 10 mg, titrated to effect.				•	•
14. Transport to appropriate hospital. Patients with ECGs consistent with STEMI should be transported ONLY to PCI CAPABLE HOSPITALS.		•	•	•	•
15. Transport and perform ongoing assessment as indicated.	•	•	•	•	•

Acute Cocaine Toxicity

If 12-lead ECG does not indicate AMI and chest discomfort due to cocaine is suspected per HPI, administer Midazolam 5 mg slow IVP, or alternatively Valium 2.5 – 5.0 mg slow IVP.

Cardiac Causes of Chest Discomfort

Ischemic	Non-Ischemic
<ul style="list-style-type: none"> • Angina • Myocardial infarction • Aortic stenosis • Hypertrophic cardiomyopathy • Coronary vasospasm 	<ul style="list-style-type: none"> • Pericarditis • Aortic dissection • Mitral valve prolapse

Non-Cardiac Causes of Chest Discomfort

Gastro-esophageal	Pulmonary	Musculoskeletal	Dermatologic
<ul style="list-style-type: none"> • Reflux esophagitis • Esophageal spasm • Esophageal perforation • Gastritis • Peptic ulcer disease 	<ul style="list-style-type: none"> • Pneumothorax • Pulmonary embolism • Pleuritis • Neoplasm • Bronchitis 	<ul style="list-style-type: none"> • Costochondritis • Rib fracture • Compression radiculopathy 	<ul style="list-style-type: none"> • Herpes zoster

Lead	Elevation	Reciprocal Depression
SEPTAL	V1, V2	NONE
ANTERIOR	V3, V4	NONE
ANTERO-SEPTAL	V1, V2, V3, V4	NONE
LATERAL	I, aVL, V5, V6	II, III, aVF
ANTERO-LATERAL	I, aVL, V3, V4, V5, V6	II, III, aVF
INFERIOR	II, III, aVF	I, aVL
INFERO-LATERAL	II, III, aVF, V5, V6	I, aVL, V1, V2
POSTERIOR	NONE	V1, V2, V3, V4

PEARLS:

1. Many patients with an acute coronary syndrome do not have classic textbook symptoms. As age progresses, chest discomfort declines in frequency as the presenting symptom.
2. Women are more likely to have atypical presentations. Do not overlook vague complaints such as discomfort in the epigastric area, shortness of breath, back, jaw, and heartburn.
3. Ongoing chest discomfort that has been present for an extended period of time may still represent angina. Further questioning may reveal that the pain is actually intermittent since onset rather than constant.
4. Although most acute MI develop ECG changes, up to 1/3 do not develop any changes at all.

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NON-TRAUMATIC CHEST DISCOMFORT

5. Do not attribute cardiac symptoms to other chronic underlying conditions, (i.e. hiatal hernia or esophageal spasm) without a thorough assessment. A new cardiac condition may have developed.