

Assessment and Triage of Unstable Angina and Acute MI

Delays in the assessment of unstable angina and acute myocardial infarction (AMI) are a growing cause of concern. These materials, developed by the Task Force on Early Diagnosis of Unstable Angina and Acute MI, were developed for three reasons:

1. To improve the quality of care for patients with cardiac symptoms
2. To promote a consistent approach among various specialties, and
3. To reduce malpractice lawsuits for failure-to-diagnose.

We estimate that use of this protocol will prevent about half of all AMI lawsuits against primary care doctors.

This packet, developed for use by primary care physicians and their staffs, includes the following materials:

- Diagnostic Protocol: Assessment and Triage of Unstable Angina/Acute MI
- Notes
- Screening Questionnaire for Contraindications to Thrombolytic Therapy
- Patient Handout: Could It Be a Heart Attack?—to be copied for your patients
- Avoiding Failure-to-Diagnose Lawsuits for AMI: Eight Reasons for Delays

This protocol is intended to be a guideline and should not be considered a standard of care. We encourage you to adapt the protocol and accompanying materials according to your clinical judgment and organizational policies. When you do adapt the protocol, document your reasoning in the chart. These materials are not proprietary, and may be reproduced and used by any individual or organization, provided proper credit is given.

The Task Force consisted of the following physicians: N.H. Bo Tucker, MD, chairman (internal medicine), Daniel Doty, MD (cardiology), Kay Gilmour, MD (cardiology), Ken Grauer, MD (family medicine), Robert Hatch, MD (family medicine), John Meade, MD (emergency medicine), and Sheldon Warman, MD (internal medicine). The following people also participated in the Task Force discussions: Edward Bartlett, PhD (risk management), Margaret Douglass, RN, MPH (risk management), Inge Holman, MD (internal medicine), Gary Machnowski (risk management), and Michael Rehmar, MD (internal medicine). The Task Force did a literature review, surveyed pertinent practice guidelines, developed draft protocols, oversaw a two-stage pilot test, and made final revisions. The Florida Society of Internal Medicine and Florida Academy of Family Physicians also played a key role in supporting the initial development and pilot testing of the protocol.

This project is supported by educational grants from Frontier Healthcare, Bedford Hills, NY, and FPIC, Jacksonville, FL. If you have further questions, please contact Edward E. Bartlett, PhD, Coordinator, Early Diagnosis Steering Committee, P.O. Box 1404, Rockville, MD 20849. Telephone 301-670-1964, Internet eba@intr.net.



Assessment and Triage of Unstable Angina/Acute MI in the Primary Care Setting

Telephone Receptionist or Front Office Personnel (Notes #A, B): **Any AMI signs/symptoms present?**

- New onset pain, pressure, or discomfort in chest, neck, or left arm
- Significant shortness of breath
- Fainting, severe dizziness, or sudden severe weakness
- Fear of death or impending doom
- Palpitations, with weakness or breathlessness, that are continuous and last > 5-10 minutes
- Cold and clammy skin, pallor
- Any symptoms the patient thinks may be a heart attack
- Unstable vital signs: pulse, BP, or respirations

Yes

Notify doctor or designee (office nurse, P.A., N.P.) **stat.**

Rapid assessment of acute cardiopulmonary emergency:

- brief targeted interview (Note #B), including AMI risk factors (Note #C)
If patient is in office:
- vital signs/exam and EKG (Note #D)

Suspicion of acute MI or unstable angina?

No

Evaluate other causes of symptoms

Yes

Patient is on phone:

1. Write down pt's. location and phone number in case of loss of consciousness.
2. Call 911 from second line. Do not hang up on pt.
3. Advise pt. to unlock front door.
4. If pt. is alone, call neighbor if possible. Maintain phone contact until medical help arrives.

Patient is in office:

1. Call 911 or ambulance.
2. ASA 160-325 mg.
3. If SBP > 100 and no Viagra-type drugs within 24 hours, give NTG. Repeat q 5 min PRN.
4. If available: O₂ and IV access, until EMS arrives.
5. Complete Thrombolytic Contraindications Sheet.
6. Select hospital for thrombolysis or primary PTCA (Note #E).

Acute or recent symptoms, possibly cardiac in origin, stable patient:

1. ASA, NTG
2. Patient education
3. Arrange prompt evaluation

Stable angina

Non-cardiac causes

Notes

A. The telephone receptionist and front office personnel play a critical role in the rapid assessment of AMI. Review these signs and symptoms with your staff, and post them in the front office area.

B. It is important to realize that some AMIs occur without any symptoms at all, or with atypical symptoms such as: severe sweating, sudden nausea or vomiting, or other unexplained pain between the nose and the navel lasting more than 10 minutes.

Careful history-taking is critical in the assessment of patients with possible AMI. Identify specific circumstances for each episode of chest discomfort. Because a significant number of patients with AMI do not experience chest pain, it is important to use a variety of descriptive words: pressure, heaviness, discomfort, fullness, gas, etc

C. Assessment of AMI risk factors is important for all patients. Key risk factors include:

- History of coronary artery disease
- Smoking history, elevated cholesterol, high blood pressure, diabetes mellitus, family history of premature heart disease, or recent cocaine use
- Other blood vessel disease including stroke or transient ischemic attacks, carotid artery disease or bruit, or peripheral vascular disease

Remember that AMI may occur even in young adults, especially in the presence of the above risk factors .

D. Abnormal EKG findings include:

- New ST elevation, especially > 1mm in 2 inferior leads or > 2mm in 2 or more anterior leads
- Presumably new left bundle branch block
- ST segment depression in contiguous inferior or anterior leads without ST elevation
- New-onset, sustained arrhythmia

If the clinical presentation is suspicious, do not delay transport to hospital because an EKG is not readily available or the interpretation is negative.

E. If patient's presentation is suspicious for unstable angina or AMI, do not allow a negative finding to stop the patient from being referred to an appropriate medical facility. It is important to identify the capabilities of local hospitals in advance.

A facility that can perform invasive reperfusion (PTCA, rotoablation, bypass surgery, etc.) will also be able to perform thrombolysis (TPA, streptokinase, etc.) and is appropriate for all patients with suspected unstable angina or AMI.

A facility that can perform thrombolysis solely is appropriate only if the need for an invasive procedure is deemed unlikely, the patient has suspected AMI with ST elevation, and there are no contraindications to thrombolysis. To determine contraindication to thrombolysis, see Screening Questionnaire for Contraindications to Thrombolytic Therapy.

If time permits, complete Screening Questionnaire and send copy with patient

SCREENING QUESTIONNAIRE for CONTRAINDICATIONS TO THROMBOLYTIC THERAPY

Is the patient (or has the patient had) ...

- | | |
|--|--|
| <input type="checkbox"/> Yes <input type="checkbox"/> No | 1. Unconscious, semi-conscious or severely confused? |
| <input type="checkbox"/> Yes <input type="checkbox"/> No | 2. Actively bleeding or has the patient had bleeding from the stomach, bowels or kidneys within the past month? |
| <input type="checkbox"/> Yes <input type="checkbox"/> No | 3. Known to have esophageal varices or active ulcer, or symptoms such as frequent abdominal pain relieved with antacids or food? |
| <input type="checkbox"/> Yes <input type="checkbox"/> No | 4. Major surgery or significant trauma to the head, neck, thigh, chest, abdomen or large joints within the past two months? |
| <input type="checkbox"/> Yes <input type="checkbox"/> No | 5. A history of bleeding into the brain or spinal cord, or known aneurysm or blood vessel malformation in the brain or spinal cord at any time in the past? |
| <input type="checkbox"/> Yes <input type="checkbox"/> No | 6. Surgery on the brain or spinal cord within the past two months? |
| <input type="checkbox"/> Yes <input type="checkbox"/> No | 7. Blood pressure >200/120 now or does the patient have a history of hypertension with blood pressures commonly >180/110? |
| <input type="checkbox"/> Yes <input type="checkbox"/> No | 8. A history of bleeding disorder or free bleeding? |
| <input type="checkbox"/> Yes <input type="checkbox"/> No | 9. Pregnant or possibly pregnant (missed menstrual period in a sexually active, pre-menopausal woman)? |
| <input type="checkbox"/> Yes <input type="checkbox"/> No | 10. Cardiopulmonary resuscitation with chest compression for greater than 10 minutes within the past two weeks? |
| <input type="checkbox"/> Yes <input type="checkbox"/> No | 11. Known dissection or aneurysm of the aorta? |
| <input type="checkbox"/> Yes <input type="checkbox"/> No | 12. Needle or open biopsy of an internal organ or puncture or catheterization of an artery or a vein within the chest or neck within the past two weeks? |
| <input type="checkbox"/> Yes <input type="checkbox"/> No | 13. Taking coumadin or warfarin ? |
| <input type="checkbox"/> Yes <input type="checkbox"/> No | 14. An allergic reaction to the thrombolytic (clot dissolving) drugs in the past, or taken thrombolytic drugs within the past six months? |
| <input type="checkbox"/> Yes <input type="checkbox"/> No | 15. Severe liver or kidney disease? |
| <input type="checkbox"/> Yes <input type="checkbox"/> No | 16. Anemia (Hgb <10 mg) or low platelets (<100K)? |
| <input type="checkbox"/> Yes <input type="checkbox"/> No | 17. Tuberculosis or other cavitary lung disease? |

If the answer to **ALL** of the above is **NO**, notify the physician that the patient is **probably a candidate for thrombolysis**.

If the answer to **ANY** of the above is **YES**, notify the physician that the patient is **probably not a candidate for thrombolysis** and record details of "yes" response below:

Recorded by _____
Signature Time Date

Could It Be a Heart Attack?

If you are having any chest pain or discomfort, you may be worried, “Could it be a heart attack?” First of all, chances are it is not a heart attack. Second, rest assured that if it is a heart attack, we can stop further damage to the heart by using new medicines called “thrombolytics.”

What can cause chest discomfort?

Chest discomfort can be hard for the doctor to diagnose because it may be caused by different problems that have nothing to do with your heart:

- Upset stomach (“gastritis”)
- Problems in your lungs
- Pain in your rib cage or muscles
- Stress-related problems

Or, chest discomfort may be caused by a heart problem.

What is angina?

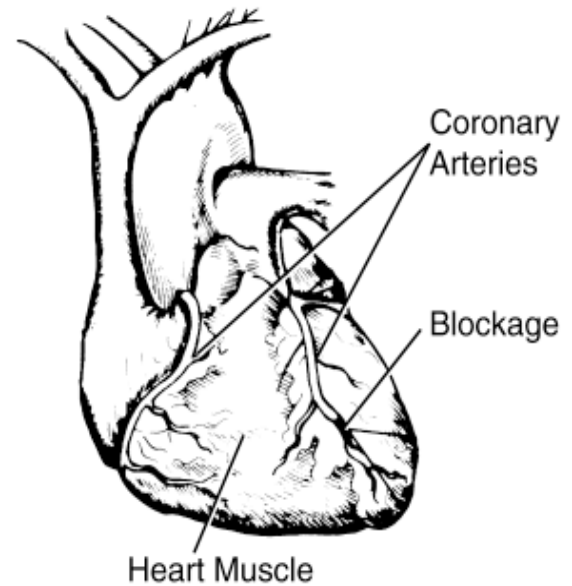
If you have ever run too far or exercised a muscle too long, your muscle begins to hurt. If the heart muscle doesn’t get enough oxygen, it also begins to hurt, which doctors call “angina.” Angina is pain caused by a temporary shortage of oxygen to the heart.

Newly-occurring angina, or a change in the previous pattern of angina, may signal a condition known as “unstable angina.” “Unstable angina” means you are at risk for having a heart attack at any minute, and demands prompt medical attention.

What is a heart attack?

The coronary arteries bring food and oxygen to the heart muscle—see drawing. If one of the bigger arteries gets blocked, a small area of the heart muscle can become damaged within a

few hours and die. This is a heart attack—what doctors call a “myocardial infarction” or “MI” for short.



A heart attack needs immediate medical attention in a hospital with the most modern facilities, including the ability to provide thrombolytic treatment—what some people call “clot-busters.” Clot-busters actually dissolve the blockage in the heart arteries. They work best when they are taken within six hours after the heart attack. Because thrombolytics are an advanced treatment, not all hospitals can provide this medicine.

What should I do if I think I might be having a heart attack?

A heart attack often feels like heavy, pressure-like, or squeezing pressure on your chest. Or a heart attack may come disguised as a “knot” in your chest, indigestion-like pain, unexplained trouble breathing, sudden weakness, or severe sweating.

The most common reaction is to deny the symptoms and pretend that

everything is normal. This reaction may be very hazardous to your health because it may delay starting your treatment!

If it is possible you are having unstable angina or a heart attack, CALL 911 IMMEDIATELY. If in doubt, call. If you are afraid to make this decision alone, talk to a person who knows something about heart attacks and your health history—preferably a family member, someone at work, or a neighbor.

While you are waiting for the ambulance to arrive, you may want to call your doctor's office and tell them you are going to the hospital. If the doctor is not available, however, do not delay going to hospital. Remember, you have only a few hours from the time the heart attack starts for the clot-buster medicine to work.

How do doctors diagnose a heart attack?

Doctors diagnose a heart attack by looking at several things:

- Symptoms of chest discomfort
- Risk factors
- Physical examination
- Electrocardiogram (ECG or EKG)
- Blood tests

Unfortunately, these tests are not perfect. A person may have an ECG that looks normal, but actually be having a heart attack. And the blood tests don't show anything until several hours after the heart attack. A growing number of hospitals are setting up a chest pain center in their emergency department, so they can monitor a person with a possible heart attack for several hours.

If the cause of your symptoms is unclear, your doctor may give you aspirin, a blood thinner, and

nitroglycerin, which relieves heart pain. Your doctor may recommend additional testing.

How can I cut down on my chances of a heart attack?

First, understand there are certain risk factors that you can't change:

- Male gender
- Advanced age
- Family history

The good news is you *can* reduce your chances of a heart attack. These are the things you can do:

- Stop smoking cigarettes or using smokeless tobacco
- Reduce your cholesterol by following your doctor's advice
- Lose weight, if you are overweight
- Take medicine to control high blood pressure
- Control your blood sugar, if you have diabetes
- Do daily, vigorous exercise (with your doctor's approval)
- If you are a woman past menopause, estrogen replacement may help (ask your doctor)

Conclusion

If you are feeling discomfort in your chest area, it probably is not a heart attack. But there is a small chance it is, so you need to be alert.

If you think you are having a heart attack, call 911 right away. Remember, *effective treatment is available for heart attacks, but you can't delay.*

Doctor's instructions:

Avoiding Failure-to-Diagnose Lawsuits for AMI: Eight Reasons for Delays

In the most common scenario leading to a malpractice lawsuit in the primary care setting, a male patient in his 40s, with a history of smoking or other AMI risk factors, telephones after-hours or presents at the doctor's office complaining of pain, pressure, or dyspnea. The physician makes a diagnosis of gastroenteritis or musculoskeletal pain. The patient dies of AMI a few hours or days later.

These are the most common reasons for delay in the primary care office setting:

Reason #1: Patient Denial

Patient delays calling about symptoms, minimizes the severity of the symptoms, or refuses the doctor's advice to go to emergency department.

Reason #2: Front Office

Receptionist does not recognize caller's symptoms that require immediate emergency attention and schedules appointment for a future date. Staff relays inadequate information to the physician.

Reason #3: Incomplete History

Physician does not obtain a precise history regarding time of onset, type of pain, etc., and does not identify key risk factors.

Reason #4: Prior Non-Cardiac Diagnosis with Atypical Presentation

Patient with a previously-diagnosed non-cardiac condition presents with symptoms that mimic GI, musculoskeletal, pulmonary, or psychiatric problems, e.g., "indigestion," "trouble breathing," "my arthritis is acting up again," etc.

Reason #5: EKG Errors

EKG strips may be non-diagnostic or misread, or interpretations may not be reported in a timely manner. Copy of prior EKG not requested or forwarded.

Reason #6: Physician Indecision, Over-accommodation, and Denial

The patient presents with atypical symptoms. The physician works in a well-honed routine and is reluctant to "sound the alarm." The doctor hesitates to make an ominous diagnosis, especially in a young patient.

Reason #7: Failure to Consider the "Can't-Afford-to-Miss" Diagnosis

For any patient with unexplained discomfort between the navel and the nose lasting longer than 10 minutes, the "drop-dead" diagnosis is AMI.

Reason #8: Systems Problems

Symptoms and telephone contacts are documented poorly. No one follows-up on missed consultations and referrals. ED doctor miscommunicates with primary care physician.

The Bottom Line

Acute myocardial infarction is a diagnosis you and your patient can't afford to miss. Be sure your telephone receptionist can identify the key AMI signs and symptoms. Take a detailed history of any patient presenting with chest discomfort. Be especially wary of after-hours calls. Remember that a negative EKG has limited diagnostic value. Trust your instincts.