Acute Coronary Syndrome

1. **Patient presentation suggests Ischemia or acute MI**
   - Appropriate EMS care and hospital notification
     - Provide cardiac monitor
     - Assess/support ABCs
     - Prep for CPR and rapid defibrillation if needed
     - If no contrary indications, administer aspirin, nitroglycerin and morphine (if needed)
     - Administer appropriate oxygen therapy
     - Perform 12-Lead ECG; if ST elevation observed, notify receiving hospital, relay 12-Lead findings or transmit if possible, provide medical report on patient
     - Hospital should activate STEMI team
     - Use fibrinolytic checklist if fibrinolytic therapy is considered

2. **ED Assessment (within 10 min of patient arrival)**
   - Assess vital signs and oxygenation status
   - Establish vascular access
   - Perform/rapid focused history/physical exam
   - Perform/review fibrinolytic exclusion checklist
   - Perform appropriate lab tests including: cardiac markers and coagulation studies
   - Order portable chest x-rays (within 30 min of patient arrival)

3. **12-Lead ECG Interpretation**
   - ST Elevation or assumed new LBBB, strong suspicion for injury
     - ST-Elevation MI (STEMI)
   - ST Depression or T-Wave Inversion, strong suspicion for Ischemia
     - High-risk unstable angina/non-ST elevation MI (UA/NSTEMI)
   - High-risk patient or elevated Troponin level
     - Consider invasive therapies if:
       - Refractory ischemic chest pain
       - Persistent/recurrent ST deviation
       - Unstable blood pressure
       - Ventricular tachycardia
       - Signs/symptoms of heart failure

4. **Immediate ED Treatment**
   - Administer O2 at 4L/min, titrate to SPO2 >94%
   - Administer Aspirin 16--325 mg (if not administered by EMS)
   - Administer sublingual or spray Nitroglycerin
     - Assess for contraindications for all drug administrations
   - Start adjunctive therapies as needed
   - Do not delay reperfusion

5. **Onset of symptoms <12 hrs?**
   - Yes
     - Initiate appropriate reperfusion therapy
       - Balloon inflation PCI: within 90 min
       - Fibrinolytic therapy: within 30 min
   - No

6. **ST Elevation or assumed new LBBB, strong suspicion for injury**
   - ST-Elevation MI (STEMI)
     - Start adjunctive therapies as needed
     - Do not delay reperfusion

7. **ST Depression or T-Wave Inversion, strong suspicion for Ischemia**
   - High-risk unstable angina/non-ST elevation MI (UA/NSTEMI)
   - High-risk patient or elevated Troponin level
   - Consider invasive therapies if:
     - Refractory ischemic chest pain
     - Persistent/recurrent ST deviation
     - Unstable blood pressure
     - Ventricular tachycardia
     - Signs/symptoms of heart failure

8. **Normal or nondiagnostic ST or T wave changes**
   - Low/Intermediate-risk ACS
     - Consider admission to ER or appropriate unit
     - Monitor arterial cardiac markers (including troponin)
     - Continue with ECG monitoring for ST-segment changes
     - Consider non-invasive diagnostic test

9. **Patient develops 1 or more of the following?**
   - ECG changes consistent with ischemia?
   - Elevated Troponin levels?
   - Clinical assessment revealing high-risk findings?
     - Yes
     - Abnormal findings on diagnostic non-invasive imaging or physiologic testing?
       - Yes
         - If patient has no evidence of Ischemia or infarction by testing, discharge patient with instructions to follow up or return/call 911 should symptoms reoccur
       - No
         - Admit to appropriate monitor unit
         - Reassess risk status
         - Continue heparin, ASA, and appropriate therapies as needed
         - ACE inhibitor/ARB
         - HMG CoA reductase inhibitor (statin therapy)
         - Not at high risk: cardiology to risk stratify
     - No
         - Initiate adjunctive treatments as needed
           - Nitroglycerin
           - Heparin (UFH or LMWH)
           - Consider:
             - PO -Blockers
             - Clopidogrel
             - Glycoprotein IIb/IIIa inhibitor

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