

QUESTION
 A 65-year-old male patient with a long history of hypertension and hyperlipidemia presents to the emergency department with acute chest pain. The patient reports a 15-minute episode of severe, crushing chest pain that radiates to his left arm and jaw. He is currently on amlodipine and atorvastatin. His vital signs are: blood pressure 180/110 mmHg, heart rate 110 bpm, respiratory rate 20, and oxygen saturation 92% on room air. ECG shows ST-segment elevation in leads V1, V2, and V3. The patient is currently receiving aspirin 81 mg and nitroglycerin 0.4 mg sublingually.

ANSWER
 The patient is experiencing an acute myocardial infarction (MI) with ST-segment elevation (STEMI). The management of STEMI involves rapid reperfusion therapy. The patient has already received aspirin and nitroglycerin. The next step is to administer a P2Y12 inhibitor (clopidogrel, prasugrel, or ticagrelor) and a direct thrombolytic agent (alteplase, tenecteplase, or streptokinase) if the patient is within the recommended time window (ideally < 120 minutes from symptom onset). If the patient is not a candidate for primary percutaneous coronary intervention (PCI), thrombolysis is the preferred reperfusion strategy.

EMERGENCY

QUESTION
 A 45-year-old female patient with a known history of asthma and chronic kidney disease (CKD) presents to the emergency department with acute respiratory distress. She reports a 2-hour episode of severe shortness of breath and wheezing. She is currently on inhaled albuterol and prednisone. Her vital signs are: blood pressure 150/90 mmHg, heart rate 120 bpm, respiratory rate 28, and oxygen saturation 88% on 4L oxygen. Physical exam shows hyperinflation, hyperresonance to percussion, and diffuse wheezing. Arterial blood gas (ABG) shows pH 7.35, pCO2 45 mmHg, pO2 80 mmHg, and HCO3- 28 mmol/L.

ANSWER
 The patient is experiencing an acute asthma exacerbation. The management of acute asthma involves rapid administration of high-dose inhaled beta2-agonists (albuterol) and systemic corticosteroids (prednisone or methylprednisolone). The patient is already on albuterol and prednisone. The next step is to administer a long-acting beta2-agonist (LABA) such as formoterol or salmeterol, and consider intravenous (IV) magnesium sulfate. If the patient does not respond to medical therapy, non-invasive ventilation (NIV) or intubation may be necessary.