

## Types of Myocardial Infarction

### **Type 1: Spontaneous Myocardial Infarction**

- Due to atherosclerotic plaque rupture, ulceration, fissuring, erosion or dissection with resulting intraluminal thrombus leading to decreased myocardial blood flow or distal platelet emboli with ensuing myocyte necrosis

### **Type 2: Myocardial Infarction secondary to oxygen supply-demand mismatch**

- By definition, acute atherothrombotic plaque disruption is not a feature of type 2 MI
- Imbalance between myocardial oxygen supply and/or demand, e.g. coronary artery spasm, anemia, respiratory failure, hypotension, sepsis, etc.

### **Type 3: Myocardial Infarction resulting in death with unavailable biomarkers**

- **Ex:** a patient passes in the ED before lab work can be drawn
- Patient must have symptoms suggestive of myocardial ischemia accompanied by presumed new ischemic ECG changes or ventricular fibrillation

### **Type 4a: Myocardial Infarction related to percutaneous coronary intervention (PCI)**

- Post PCI MI is defined as **≤ 48 hours** after the index procedure **AND** troponin > 5 times the 99<sup>th</sup> percentile URL
  - If preprocedural troponins are normal
    - Troponin > 5 times 99<sup>th</sup> percentile URL
  - If preprocedural troponin values are elevated but **stable** (≤ 20% variation) or **falling**
    - Troponin > 5 times 99<sup>th</sup> percentile URL **AND** a change in baseline troponin > 20%

### **Type 4b: Myocardial Infarction secondary to stent/scaffold THROMBOSIS**

### **Type 4c: Myocardial Infarction secondary to stent/scaffold RESTENOSIS**

### **Type 5: Myocardial Infarction related to coronary artery bypass grafting (CABG)**

- Some elevation of cardiac biomarkers is expected after surgery
- Post CABG MI is arbitrarily defined as **≤ 48 hours** after the index procedure **AND** troponin > 10 times the 99<sup>th</sup> percentile URL
  - If preprocedural troponins are normal
    - Troponin > 10 times 99<sup>th</sup> percentile URL
  - If preprocedural troponin values are elevated but **stable** (≤ 20% variation) or **falling**
    - Troponin > 10 times 99<sup>th</sup> percentile URL **AND** a change in baseline troponin > 20%

\*Adapted from the Fourth Universal Definition of Myocardial Infarction, Published August 2018