ACUTE LIMB ISCHEMIA

Definition
A sudden decrease in perfusion with potential threat to limb viability occurring within 14 days of onset.

Epidemiology
1. Occurs by one of three mechanisms (thrombus 60%, embolus 30%, trauma 10%).
2. Ischemia caused by embolus (80% of which are secondary to atrial fibrillation) has complete onset (minutes to seconds) without prior symptoms. If secondary to thrombus, symptom onset can occur over hours to days with collateral formation.
3. Most commonly occurs in common femoral artery (28%).

Physical Exam
Pain: starts distal to occlusion, and gradually increases in severity as ischemia worsens. May decrease in severity secondary to progressive ischemic sensory loss.
Parasthesias: any sensory complaints/loss compared to contralateral limb suggestive of immediate threatened limb.
Pallor: may appear marble white or mottled (light blue/purple); in both situations limb still salvageable. If stagnant blood or non-blanching, less likely viable limb.
Polar: cold is an unreliable indicator, as can also be present in chronic limb ischemia.
Pulse: non-palpable with occlusion (if asymptomatic, consider chronic limb ischemia). Confirm with Doppler and/or ankle-brachial index (ABI).
Paralysis: any motor complaints/loss compared to contralateral limb suggestive of immediate threatened limb.

Diagnostic Modalities
May obtain duplex Ultrasound/CT angiogram/MRA to assess affected limb, but should not delay operative intervention if high suspicion for vascular compromise.
Ankle-brachial index (ABI): Place blood pressure cuff above the ankle on limb of concern. Determine systolic pressure with a Doppler probe at dorsalis pedis. Place blood pressure cuff on arm at the level of the heart. Determined systolic pressure with a Doppler probe at brachial artery. ABI is calculated for each leg. ABI value equals systolic blood pressure at ankle divided by the brachial arterial systolic pressure (near zero in acute limb ischemia, <.50 in severe arterial disease, 0.5 to 0.79 in moderate arterial disease). The affected limb may also be compared to contralateral, unaffected limb.

Management
1. Immediate vascular surgery involvement.
2. Anticoagulation with heparin if without contraindication.
3. OR for revascularization vs. thrombolysis with/without fasciotomy if concern for compartment syndrome after reperfusion (reperfusion injury).

References
Blecha MJ. Critical limb ischemia. Surg Clin North Am. 2013;93:789-812.
Callum K, Bradbury A. Acute limb ischaemia. BMJ. 2000;320:764-767.