Infective Endocarditis (IE) Duke-ISCVID 2023 criteria

Definite IE

- Two major clinical criteria, or
- One major and three minor clinical criteria, or
- Five minor clinical criteria

Possible IE

- One major and one minor clinical criteria, or
- Three minor clinical criteria

Major clinical criteria

Microbiology

- Positive blood cultures with typical microorganisms – isolated from 2 or more separate blood cultures, or
    - Staphylococcus aureus, lugdunensis, faecalis
    - All streptococcus except for pneumococcus pyogenes, granulicatella, ana abiotrophia
    - Streptococcus gallolyticus [formerly S. bovis]
    - HACEK [Haemophilus, Aggregatibacter, Cardiobacterium, Eikenella, Kingella] group
    - Community-acquired enterococci in the absence of a primary focus
    - Microorganisms in the setting of intracardiac prosthetic material
        - Coagulase-negative Staphylococcus
        - Chronic bacterium
        - Serratia
        - Pseudomonas
        - Non tuberculosis mycobacterial
        - Candida
- Positive blood cultures with nontypical microorganisms – isolated from 3 or more separate blood cultures, or
- Positive PCR or other nucleic acid base techniques for Coxiella, Bartonella, or Tropherynema, or
- Single positive blood culture for Coxiella burnetii or IgG >1:800

Imaging

- Echocardiography and/or cardiac CT, or
    - Vegetation
    - Valvular/leaflet perforation
    - Valvular/leaflet aneurysm
    - Abscess
    - Pseudoaneurysm
    - Intracardiac fistula
- New valvular regurgitation (increase or change in preexisting murmur is not sufficient), or
- New partial dehiscence of prosthetic valve as compared to previous imaging

PET/CT imaging criteria

- Increased metabolic activity involving a native prosthetic valve, ascending aortic graft with concomitant evidence of bowel involvement, or intracardiac device leads

Surgical criteria

- Evidence documented by direct inspection without previous diagnosis

Minor clinical criteria:

Predisposition

- Previous history of IE

- Intravenous drug use
- Prosthetic valve
- More than mild regurgitation or stenosis of any etiology
- Endovascular CIED
- Hypertrophic obstructive cardiomyopathy

Fever – Temperature >38.0°C (100.4°F)

Vascular phenomena

- Arterial emboli
- Septic pulmonary infarcts
- Cerebral or splenic abscess
- Mycotic aneurysm
- Intracranial hemorrhage
- Conjunctival hemorrhages
- Janeway lesions
- Purulent purpura

Immunologic phenomena

- Immune complex mediated glomerulonephritis
- Osler nodes
- Roth spots
- Positive rheumatoid factor

Microbiologic evidence failing short of a major criterion

- Positive blood cultures for a microorganism consistent with IE but not meeting the requirements for major criterion
- Positive culture or PCR for an organism consistent with IE from a sterile body site other than cardiac

Imaging criteria

- PET-CT increased metabolic activity within 3 months of implantation of prosthetic valve, ascending aortic graft, intracardiac device leads, or other prosthetic material

Indications for surgery:

- Valve dysfunction resulting in symptoms or signs of heart failure
- Heart block or aortic abscess
- Persistent bacteremia or fever lasting >5-7 d

Consideration for surgery:

- Infective endocarditis caused by fungi or resistant organisms (eg, VRE, MDR gram-negative bacilli)
- Recurrent emboli and persistent or enlarging vegetations despite appropriate antibiotic therapy
- Severe valvular regurgitation and mobile vegetations >10 mm
- Relapsing prosthetic valve infective endocarditis

TEE indications

The AHA recommends TEE for diagnosing IE in the following situations:

- Negative or inadequate TTE and there is still suspicion of IE
- If the TTE is positive and there are concerns for intracardiac complications
- Repeat TEE if the initial TEE is nondiagnostic and there is still high clinical suspicion of IA
    - Performed TEE in 3-5 days or sooner if clinical findings change
- Intraoperative TEE if patient is undergoing for surgery