Clinical Features Increasing Suspicion for Infectious Endocarditis (IE)

- Fever (90% of patients)
- Heart Murmur (85% of patients)
- Systemic symptoms (anorexia, weight loss, night sweats)
- New stroke/neurologic deficits
- New bundle branch block
- New AV block of any degree
- New glomerulonephritis
- Cutaneous features of emboli/immunologic phenomenon
  1. Splinter hemorrhages
  2. Janeway lesions
  3. Osler’s nodes

Consider Early Surgery in Patients with IE

Class I Indications
- Valve dysfunction resulting in symptoms or signs of heart failure.
- IE caused by fungal or highly resistant organisms (e.g., vancomycin-resistant Enterococcus, multidrug-resistant Gram-negative bacilli)
- IE complicated by heart block, annular or aortic abscess, or destructive penetrating lesions
- Evidence of persistent infection (manifested by persistent bacteremia or fever lasting >5-7 days and provided that other sites of infection and fever have been excluded) after the start of appropriate antimicrobial therapy

Class IIa indications
- Recurrent emboli and persistent or enlarging vegetations despite appropriate antibiotic therapy
- Severe valve regurgitation and mobile vegetations >10 mm

Class IIb indications
- Mobile vegetations >10 mm, particularly when involving the anterior leaflet of the mitral valve and associated with other relative indications for surgery

Risk factors for Infectious Endocarditis

- Prior IE
- Intravenous drug use (IVDU)
- Prosthetic valve
- Implantable cardiac device
- Indwelling central venous access
- Hemodialysis patients
- Poor dentition
- Bicuspid aortic valve
- Transplanted heart with valvulopathy
- Unrepaired cyanotic congenital heart disease or recently repaired with prosthetic material in the last 6 months or repaired cyanotic heart disease with prosthetic material and residual shunt

Typical Organisms in Native Valve IE

- Staph Aureus (both MSSA and MRSA)
- Enterococci
- Viridans Streptococci
- Streptococcus Gallolyticus
- HACEK Species

When to Evaluate a Patient for Infectious Endocarditis

- Any patient for whom the provider has clinical suspicion for IE
- Any patient that has ≥2 clinical features
- Any patient with a typical organism (see above)
Suspected IE

Basic Evaluation
Complete neurologic exam + Labs: CBC, CMP, blood cultures x3 ESR/CRP, C3, C4, UA w/ reflex culture, EKG

Start empiric antibiotics (only after obtaining 3 blood cultures) per IE Guideline

When evaluating a patient who needs therapeutic anti-coagulation, use short acting, reversible intravenous anti-coagulants such as heparin

Patient comatose, or plan to use therapeutic anticoagulation?

No

Yes

CT head without contrast

New abnormal neurological exam finding?

No

Consult Neurology

Yes

TTE

High suspicion for IE
- Presence of risk factors
- Bacteremia with a typical pathogen (Staph aureus, viridans strep, enterococcus, HACEK)
- Emboli
- Immune complications

Positive or non-diagnostic TTE?
Prosthetic valve? High suspicion for IE? (see box, left)

No

Yes

Consult ID + Cardiology +/- TEE

TEE results?

Positive

Non-diagnostic (or negative with high suspicion)

Proceed with diagnosis of IE

Discuss possible PET-CT with ID to develop plan of care

No further diagnostics. IE ruled out.