

Endocarditis inflammation of the endocardium (inner lining of the heart) from a pathogen and/or damaged endocardial tissue.

Infective Endocarditis – infection of chambers or valves.

Acute arises from a new infection - often with staphylococci, onset and resulting destruction is rapid - days to weeks

Subacute, streptococci or E.coli, infection of an already defective heart valve

Classified By Source and where

- can result from bacteria like enterococci or pneumococci
- fungus infections like Candida or Aspergillus
- vegetations form (scarlet fever, ??????) and can become thromboemboli
- infection may erode through the endocardium into the underlying structures
 - causing tears
 - other deformities of valve leaflets
 - dehiscence of prosthetic valves
 - deformity of the chordae tendineae
 - mural abscesses

Risk For

- frequent introduction of pathogens and/or a compromised immune system
- history of valvular heart disease with valve replacement or repair
- IV drug abuse
- Indwelling IV catheters (especially when the IV tip lies within the heart)
- immunosuppression from disease
- immunosuppression from malnutrition
- medication that suppresses immune function (cancer treatments – like chemo)
- history of previous endocarditis

S&S

Signs and symptoms develop from

- toxic effect of the infection
- destruction of the heart valves
- embolization of fragments of vegetative growths

The classic, primary symptoms of endocarditis are fever and a new heart murmur.

Signs and symptoms include:

- **Flu-like symptoms** - Fever, chills, myalgia, anorexia, wt loss
- **Heart Murmur**
- **Peripheral Manifestations**
 - petechiae - **small, pinpoint hemorrhages in the skin**
 - splinter hemorrhages of **nails - black lines or red streaks**
 - Roth Spots (**white spots seen on retina** that are round or oval)
 - Janeway Lesions (**painless, hemorrhagic lesions – palms, soles, nose, ear**)
 - Osler's Nodes (**tender, red lesions with white centers – on fingers and toes**)

ASSESS

Above S&S

Below S&S (complications)

Infarctions to Organs from Emboli & Ischemia (lack of perfusion – O2)

- kidneys – hematuria, oliguria, failure, anemia (failure to produce erythropoietin)
- brain – change in LOC, change in vision, TIAs, CVAs
- spleen/bowel – abd tenderness, N/V, cramping
- heart – CP, MI
- joints – arthritis, arthralgias (JOINT AND MUSCLE PAIN)

S&S of Heart Failure

Lab & Diagnostics

inflammatory process

- WBC count & ESR are elevated
- definitive finding is a positive blood culture C&S
- echocardiogram can identify diseased valves, vegetations, and hypertrophy with HF
- if kidney damage
 - anemia with a low hemoglobin (cuz kidneys produce erythropoietin which stims RBC production)

PLA. – best plan is prevention

- AHA guidelines for high-risk patient populations to receive prophylactic antibiotics before invasive procedures such: as invasive dental, GI and GU procedures

INTERVENTIONS

- Long-term IV antibiotics - may need central line or PICC). 6 WEEKS USUALLY
- Labs to monitor therapeutic antibiotic levels and effectiveness PEAK AND TROUGH
- Discharge referrals and teaching esp if going home with IV therapy
- Monitor for worsening of condition or embolization
- Teaching regarding anticoagulant therapy

Surgical Interventions

Surgical debridement, surgical repair , or replacement of defective valves

most frequent procedures

Valvuloplasty: balloon-tipped catheter inserted through peripheral vessel into heart and inflated to increase valve diameter & then removed.

Annuloplasty: A sternotomy incision is made to remove stenotic tissue at valve, or ring is placed at valve leaflets to prevent regurgitation. YOU WILL HEAR EXTRA HEART SOUND W/ THIS

Chordoplasty: A surgical repair is made to the shape chordate tendinease to prevent regurgitation.

Valve Replacement: damaged valve is replaced with a mechanical (prosthetic) or biological valve (bovine, porcine, cadaver).

EVALUATION

Endocarditis can be prevented so ultimate evaluation of tx would be that the patient does not develop the disease.

If the patient does contract endocarditis, curing the infection with **no residual damages** would be the **goal** to evaluate