



## Infective Endocarditis

- It is also known as IE - inflammation of the endocardium which is the inner layer of the heart
- The heart consists of three layers
  - Outer layer- pericardium
  - Middle layer is myocardium
  - Inner layer is endocardium
- If the inflammation of that inner layer of the heart, endocardium occurs then we call it as endocarditis this may be due to infectious cause and microorganisms are responsible for the endocarditis or it may be due to noninfectious cause
- Infective endocarditis is nothing but inflammation of endocardium that is the inner layer of the heart due to microorganisms that is infectious cause

### ENTRY OF MICROORGANISMS INTO OUR BODY

- Trauma
- Injury
- Surgical procedures
- Any predisposing heart diseases- congenital valvular disorders- valves damaged- site for thrombus formation- thrombi acts a foci for microorganism colonization
- Endocarditis- inflammation- damaged cells(cell debris) + microorganisms form mass-like structures called vegetations
- These vegetations are characteristic feature of infective endocarditis

### ETIOLOGICAL AGENTS

- **Typical infective endocarditis organisms**
  - Staphylococcus aureus
  - Staphylococcus epidermidis (CoNS- Coagulase negative staphylococci)
  - Streptococcus viridans
  - Streptococcus sanguis
  - Enterococcus
  - HACEK group organisms
    - Hemophilus influenzae,
    - Aggregatibacter actinomycetemcomitans,
    - Cardiobacterium hominis,
    - Eikenella corrodens,

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- *Kingella kingae*
  
- **Atypical infective endocarditis organisms**
  - *Escherichia coli*
  - *Klebsiella*
  - *Pseudomonas*
  - *Coxiella*
  - *Brucella*
  - *Bartonella*
  - *Candida*

**TYPES OF INFECTIVE ENDOCARDITIS**

- **Native valve infective endocarditis**
  - *Staphylococcus aureus*
  
- **Prosthetic valve infective endocarditis**
  - Early -
    - Within one year of surgery
    - *Staph epidermidis*
  - Late -
    - After one year of surgery
    - *Streptococcus viridans, sanguis*

**CLINICAL MANIFESTATIONS**

- Recurrent low-grade fever
- Night sweats
- Difficulty in breathing
- Fatigue
- Myalgia
- Arthralgia
  
- Vascular phenomena
  - Janeway lesion- flat hemorrhagic lesions on palms and soles
  - Embolic episodes- arterial emboli, septic pulmonary emboli
  - Hemorrhagic episodes- intracranial hemorrhage, conjunctival haemorrhage

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- Immunological phenomena
  - Roth's spots- retinal hemorrhagic spots
  - Osler's node- erythematous nodules on palms and soles especially on fingertips and toes
  - Glomerular nephritis

**DIAGNOSIS**

**MODIFIED DUKE'S CRITERIA**

**Major criteria**

1. Positive blood culture
  - a. Typical infective endocarditis organisms
    - i. 2 separate blood cultures drawn from 2 different sites
    - ii. 2 blood cultures drawn more than 12 hours apart
    - iii. More than 3 blood cultures-1<sup>st</sup> and last blood culture drawn at least one hour apart
  - b. *Coxiella burnetii*
    - i. Single blood culture is sufficient
    - ii. Phase 1 IgG antibody positive- titer > 1:800
2. Evidence of endocardial involvement
  - a. Oscillatory cardiac mass on valves
  - b. Abscess on the valves
  - c. New partial dehiscence on the valves
  - d. New valvular regurgitation

**Minor criteria**

1. Fever > 38°C
2. Predisposing heart condition
3. Vascular phenomena
  - a. Janeway lesion
  - b. Embolic episodes
  - c. Hemorrhagic episodes
4. Immunological phenomena
  - a. Roth spots
  - b. Osler nodes
  - c. Glomerular nephritis

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- 5. Microbiological evidence
  - a. Positive blood culture- not meeting the major criteria
  - b. Serological evidence of active infection due to infective endocarditis organisms

**Diagnosis based on criteria**

- 2 major criteria or
- 1 major criteria + 2 minor criteria or
- 5 minor criteria

**TREATMENT**

**Empirical treatment**

**Native valve infective endocarditis**

1. Penicillin- penicillin/ampicillin/amoxicillin  
Or glycopeptide - vancomycin and
2. Aminoglycoside - gentamicin for 4-6 weeks

**Prosthetic valve infective endocarditis**

1. Penicillin- penicillin/ampicillin/amoxicillin  
Or glycopeptide - vancomycin and
2. Aminoglycoside - gentamicin and
3. Rifampicin for 6 weeks

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# Rheumatic Fever

- It is a non-suppurative complication following group A streptococcal pharyngitis

## AUTOIMMUNE THEORY (MOLECULAR MIMICRY)

1:32

- Few human antigens are similar to streptococcal antigens
- Antibodies formed against streptococcal antigens act not only on streptococcal antigens but also on the similar human antigens

Streptococcal antigens	Similar Human antigens	Clinical manifestation
Capsular hyaluronic acid antigen	Synovial fluid antigen	Arthritis
Carbohydrate antigen	Cardiac valves antigen	Valve diseases
M-protein antigen	Myocardium antigen	Myocarditis
Peptidoglycan antigen	Skin antigen	Subcutaneous nodules, erythema marginatum

## CLINICAL MANIFESTATIONS

4:58

1. Arthritis- migratory polyarthritis
  - Red swollen painful joints- appear and disappear only to reappear in other joints
2. Carditis- pancarditis
  - All the layers of heart are damaged
  - Valvular damage- valvular regurgitation
  - Heart block- prolonged PR interval
3. Subcutaneous nodules
  - Painless mobile nodules
4. Erythema marginatum
  - Macular rash with erythematous (reddish) margins
5. Chorea
  - Sydenham's chorea
  - Abnormal involuntary movements of head, neck, and limbs

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**DIAGNOSIS**

9:34

Modified Jones criteria

HIGH RISK	LOW RISK
<b>MAJOR CRITERIA</b>	
Arthritis <ul style="list-style-type: none"> <li>• Polyarthrititis</li> <li>• Monoarthrititis</li> <li>• Polyarthralgia</li> </ul>	Arthritis <ul style="list-style-type: none"> <li>• Polyarthrititis</li> </ul>
Carditis	Carditis
Chorea	Chorea
Erythema marginatum	Erythema marginatum
Subcutaneous nodules	Subcutaneous nodules
<b>MINOR CRITERIA</b>	
Fever $\geq 38^{\circ}\text{C}$	Fever $\geq 38.5^{\circ}\text{C}$
Monoarthralgia	Polyarthralgia
Prolonged PR interval	Prolonged PR interval
CRP $\geq 3\text{mg/dl}$	CRP $\geq 3\text{mg/dl}$
ESR $\geq 30\text{mm/hr}$	ESR $\geq 60\text{mm/hr}$

Diagnosis based on criteria

- 2 major criteria or
- 1 major criteria and 2 minor criteria or
- 3 minor criteria (only if the patient has previous history of acute rheumatic fever)

**TREATMENT**

16:48

Same as treatment for group A streptococcal pharyngitis

primary prophylaxis for acute rheumatic fever

Antibiotics

Drug	Route	Dosage
Penicillin V/amoxicillin	Orally	Daily
Penicillin G	Intramuscular injection	Only one dose
Macrolides (in case of allergy to penicillin)	Orally	Daily

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Duration-

- For 10 days except penicillin G only 1 dose- only once

Secondary prophylaxis

Drug	Route	Dosage
Penicillin V/sulfadiazine	Orally	Daily
Penicillin G	Intramuscular injection	Every 4 weeks High risk- every 3 weeks
Macrolides (incase of allergy to penicillin)	Orally	Daily

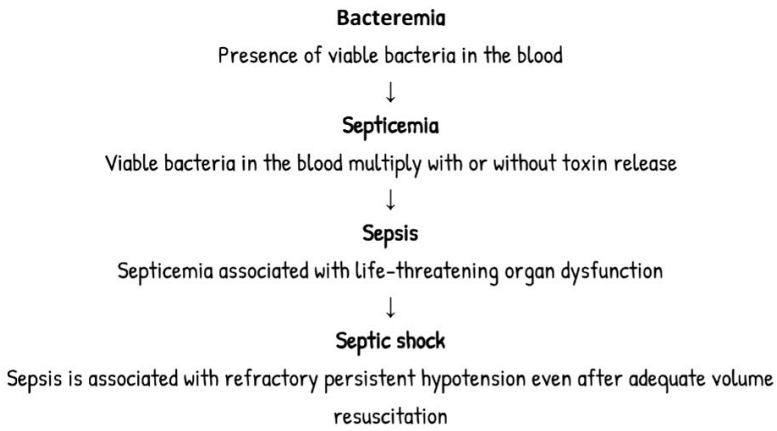
Duration

- Acute rheumatic fever + Carditis + residual cardiac disease (valvular damage)
  - 10 years or until the age of 40 years whichever is longer
  - Sometimes lifelong prophylaxis
- Acute rheumatic fever + Carditis- 10 years or until the age of 21 years whichever is longer
- Acute rheumatic fever - 5 years or until the age of 21 years whichever is longer

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# Blood Stream Infection



## ETIOLOGICAL AGENTS

3:35

1. Intravascular source  
Organisms causing infective endocarditis
  - a. Staphylococcus aureus
  - b. Staphylococcus epidermidis (CoNS- Coagulase negative staphylococci)
  - c. Streptococcus viridans
  - d. Streptococcus sanguis
  - e. Enterococcus
  - f. HACEK group organisms
    - i. Hemophilus influenzae,
    - ii. Aggregatibacter actinomycetemcomitans,
    - iii. Cardiobacterium hominis,
    - iv. Eikenella corrodens,
    - v. Kingella kingae
  
2. Extravascular source  
Organisms from organ systems other than cardiovascular system
  - a. Staphylococcus
  - b. Pneumococcus
  - c. Listeria
  - d. E. coli
  - e. Klebsiella

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- f. Proteus
- g. Pseudomonas
- h. Rickettsia
- i. Salmonella
- j. Brucella
- k. Leptospira

**CLINICAL MANIFESTATIONS**

7:18

- Hyperthermia
- Hypothermia
- Hyperventilation
- Hypotension
- Organ dysfunction

**DIAGNOSIS**

8:20

1. Bacteremia/septicemia – Blood culture and identification
2. Sepsis-

- a. SOFA scoring-range 0-4

**Sequential/sepsis related Organ Failure assessment**

- CNS- Glasgow coma scale
- CVS- mean arterial pressure
- RS- partial pressure of oxygen (PaO<sub>2</sub>), fraction of inspired oxygen(FiO<sub>2</sub>)
- HBS-Serum bilirubin
- Renal- serum creatinine and urine output
- Coagulation system- platelet count

SOFA score ≥ 2-sepsis

- b. qSOFA- quick SOFA

- CNS- altered mental status (GCS <15)
- CVS- mean arterial pressure ≤ 100mm Hg
- RS ≥ 22/min

All three parameters are present- sepsis is present

3. Septic shock

- Persistent hypotension requiring vasopressors to maintain a mean arterial pressure ≥ 65mm Hg

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- Serum lactate > 18mm/dl despite adequate volume resuscitation  
Any one is present- septic shock present

**TREATMENT**

17:30

**Carbapenem (meropenem) + glycopeptide (vancomycin)**

If organism is

- Gram -ve => only carbapenem
- Gram +ve => only glycopeptides
- Result inconclusive- prescribe both and do
- Culture and antibiotic susceptibility testing

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# Bacterial Food Poisoning

## BACTERIAL GASTROENTERITIS

Inflammation of mucous membrane – stomach and intestine

### Food poisoning

Refers to an illness acquired via food/drink contaminated with microorganisms/with their toxins

## ETIOLOGICAL AGENTS

2:53

Gram +ve	Gram -ve
Staphylococcus aureus	E. coli
Bacillus cereus	Shigella
Clostridium perfringens	Salmonella typhimurium
Clostridium botulinum	Vibrio cholerae/parahaemolyticus
Listeria	Campylobacter

## CLASSIFICATION OF FOOD POISONING

5:03

Incubation period	toxin	Bacteria	Toxin	Source
1-6 hours	Preformed; Heat stable	Staphylococcus aureus	Enterotoxin	milk and milk products
		Bacillus cereus	emetic toxin	fried rice
8-16 hours	Postformed; heat labile	Bacillus cereus	Diarrheal toxin	Canned vegetables and canned meat
		Clostridium perfringens	alpha toxin (enterotoxin)	Canned vegetables and canned meat

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<b>&gt;16 hours</b>	<b>Preformed; Heat stable toxin</b>	<b>Clostridium botulinum</b>	C2 botulinum toxin	Canned vegetables and canned meat
	<b>Postformed; heat labile</b>	E. coli	ETEC- Enterotoxigenic Escherichia coli - Stable toxin/ Labile toxin	Milk, meat, and vegetables
			EHEC- Enterohemorrhagic Escherichia coli- verocytotoxin	Milk, meat, and vegetables
		shigella	Shiga toxin (enterotoxin)	Eggs and vegetables
		Listeria	listeriolysin	Refrigerated food
		Vibrio cholerae	Cholera toxin	Sea food(shellfish)
		Salmonella typhimurium	No toxin	Milk, meat, and vegetables
	Campylobacter jejuni	No toxin	Milk and poultry	

**CLINICAL MANIFESTATIONS**

16:52

- Fever
- Gastritis
- Abdominal pain
- Nausea
- Vomiting
- Diarrhoea/dysentery

**DIAGNOSIS**

17:30

- Culture and identification
  - Food culture
  - Stool culture

Pinch to zoom



- PCR
  - Detect gene coding for toxin present
- ELISA/Latex agglutination test
  - Detect the toxin

**TREATMENT**

19:05

- Mild
  - Self-limiting
  - Rehydration
  - Symptomatic treatment
  - Antipyretics
  - Antispasmodics
  - Probiotics
- Severe
  - Antitoxin
  - Antibiotics do not have much role

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## Miscellaneous - Fungal Food Poisoning

### FUNGAL FOOD POISONING

- Also known as mycotoxicosis.
- It includes both
  - Mycotoxicosis
    - A condition that is acquired by eating food that is contaminated with fungal toxins- mycotoxins
  - Mycetism/ mycetesmus/mushroom poisoning
    - Acquired by eating poisonous edible fleshy fungi- poisonous mushrooms

### MYCOTOXICOSIS

FUNGI	MYCOTOXIN	SOURCE	CLINICAL MANIFESTATIONS
<b>Aspergillus niger</b>	Ochratoxin	Cereals and bread	Nephropathies
<b>Aspergillus flavus</b>	Aflatoxin	Nuts and maize	Hepatotoxic- causes hepatitis Hepatocellular carcinoma Rye's syndrome
	Cyclopiazonic acid	Nuts and maize	Kodua poisoning
<b>Fusarium verticillioides</b>	Fumonisin	Maize	ELEM- Equine leukoencephalomalacia PPE- porcine pulmonary edema OC- Oesophageal carcinoma
<b>Fusarium graminearum</b>	Trichothecenes	Maize and sorghum	ATA-Alimentary toxic aleukia Yellow rain
	Zearalenones	Maize and sorghum	Genital disorders in pig
<b>Claviceps purpurea</b>	Ergot alkaloids	Rye flour	St. Antony's fire

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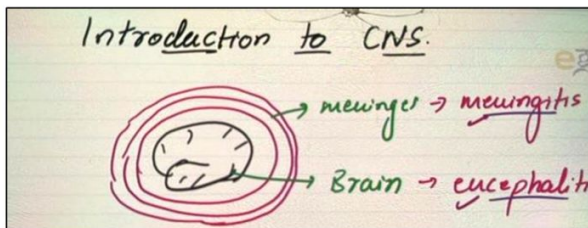


# Introduction to CNS

Includes brain and spinal cord

Meninges-

- Dura mater
- Pia mater
- Arachnoid membrane



Inflammation of meninges- meningitis

Inflammation of brain- cephalitis

## ETIOLOGICAL AGENTS

03:27

Acute meningitis

Duration < 4 weeks

Mainly caused by bacteria- pyogenic meningitis

Neonate	Childhood/adults/elderly
B- group B streptococcus- most common	Pneumococcus- - most common
E-E. coli	Meningococcus
L- listeria	Hemophilus influenzae-b

Chronic meningitis

Duration > 4 weeks

Bacteria	Fungi	virus	Parasites
Mycobacterium tuberculosis	Cryptococcus	Herpes	Naegleria
	Candida	HIV	
	Aspergillus	Mumps	

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Encephalitis

Virus	Parasites
Japanese encephalitis virus	Naegleria
Herpes	Acanthamoeba
Rabies	Balamuthia
Nipah	Sappinia

PATHOGENESIS

- Direct entry
  - Nose
  - Local infection( Sinusitis, otitis media)
  - Trauma
  - Iatrogenic (surgery)
- Hematogenous spread
  - Blood stream- cross blood brain barrier- reaches CNS

CLINICAL MANIFESTATIONS

15:47

General signs and symptoms

- Fever
- Increased intracranial pressure- headache
- Projectile vomiting
- Altered sensorium

Meningitis

Signs of meningeal irritation

- Neck stiffness- difficulty in flexion of the neck
- Kernig's sign- patient on lying position- flex hips and knee- difficulty in extension of knee
- Brudzinski's sign- flex neck- involuntary flexion of hip and knee

Encephalitis

- Seizures
- Behavioural changes
- Focal neurological deficits

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**DIAGNOSIS**

22:38

CSF analysis- Sample taken by lumbar puncture

Parameter s	Normal	Bacterial	Mycobacterial	Viral/fungal/ parasitic infection
Appearance	Clear	Turbid/cloudy	xanthochromic	Clear
Opening pressure	100-180 mm H <sub>2</sub> O	↑↑↑	↑↑	↑
Cells	0-5 cells/cu.m (lymphocytes)	↑↑↑ (PMNs)	↑↑ (Lymphocytes)	↑↑ (Lymphocytes)
Glucose	40mg/dl	↓↓↓	↓↓	↓/normal
Protein	15-45 mg/dl	↑	↑↑↑	↑/normal

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## Miscellaneous - Slow Viral Diseases

Slow viral diseases

SSPE- Subacute sclerosing pan encephalitis

PML- Progressive multifocal leukoencephalopathy

Prion diseases

CJD- Creutzfeldt-Jakob disease

### SSPE- SUBACUTE SCLEROSING PAN ENCEPHALITIS

2:20

- Late complication of measles virus
- 7-10 years after measles virus infection
- 1-4/1 lakh children are affected

Clinical manifestations

- Oligodendrocytes are affected
- Demyelination- progressive mental deterioration
- Seizures,
- Myoclonus

Diagnosis

- CSF-
  - IgG antibody- ELISA
  - Gene- PCR
  - Oligoclonal bands- increased gamma globulins
- MRI
  - Pan encephalitis (gray and white matter)
- Brain biopsy
  - Inflammatory and
  - Demyelination findings (gray and white matter)
- EEG
  - Periodic/stereotyped high voltage discharges

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**PML- PROGRESSIVE MULTIFOCAL LEUKOENCEPHALOPATHY** 10:50

- Due to reactivation of JC virus in oligodendrocytes in immunocompromised individuals

Clinical manifestations

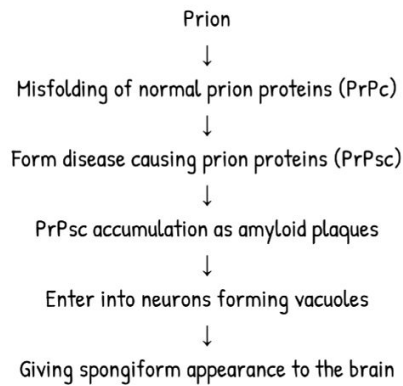
- Demyelinating disease
- progressive mental deterioration
- Seizures,
- Visual symptoms

Diagnosis

- CSF-
  - IgG antibody- ELISA
  - Gene- PCR
- MRI- multifocal areas (only white matter)
- Brain biopsy
  - Inflammatory and
  - Demyelination findings (only white matter)
- EEG
  - High voltage discharges

**CJD- CREUTZFELDT-JAKOB DISEASE** 17:40

It is caused by prions- infectious proteins



Pinch to zoom



Types

- Classical- spontaneous misfolding
- Familial- hereditary (PRNP genes)
- Iatrogenic- surgical procedures
- Variant- contaminated beef

Clinical manifestations

- Progressive mental deterioration
- Dementia
- Myoclonus

Diagnosis

- CSF
  - PrPsc proteins- ELISA
  - PRNP gene- PCR- in familial type
- MRI
  - Cortical ribboning
- Brain biopsy
  - Spongiform encephalopathy changes
- EEG
  - Sharp triphasic high voltage discharges

Pinch to zoom



# Introduction to Respiratory System

## DIPHTHERIA

2:20

- Tonsils
- Pharynx
- Larynx
- Caused by corynebacterium diphtheriae

Pneumonia- poly microbial

- Typical pneumonia- alveoli involved
- Atypical pneumonia- interstitial spaces involved

## TUBERCULOSIS

3:50

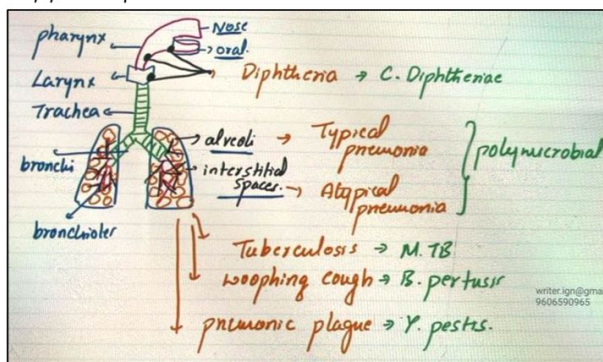
- Involves lung parenchyma
- Caused by mycobacterium tuberculosis

Whooping cough

- Caused by Bordetella pertussis

Pneumonic plague

- Caused by yersinia pestis



## PNEUMONIA

- Inflammation of lung involving alveoli or interstitial space
- Types
  - Typical(lobar) involves alveoli
  - Atypical involves the interstitial spaces

Pinch to zoom



- Community acquired pneumonia- Acquired in the community
- Hospital acquired pneumonia acquired at least after 48 hours of admission

**CLINICAL MANIFESTATIONS**

9:05

- Fever
- Cough
- Chest pain
- Dyspnea

	Typical	Atypical
Onset	Sudden	Gradual
Symptoms	High fever	Moderate fever
	Productive cough	Dry cough
	-	Headache and myalgia
Signs	Crackles +	-
	Bronchial sounds +	-
Diagnosis	WBC- ↑ leukocytosis	WBC- normal range
	Consolidation	Bilateral infiltration- ground glass opacities

**ETIOLOGICAL AGENTS**

13:23

Typical - bacteria

Community acquired pneumonia	Hospital acquired pneumonia
Pneumococcus Hemophilus influenzae-b	Staphylococcus E. coli Klebsiella Proteus Pseudomonas Acinetobacter

Atypical

Community acquired pneumonia

Bacteria	Virus	Fungi	Parasites
Chlamydia	Corona	Dimorphic	Paragonimus westerwani
Mycoplasma	Influenza	Opportunistic	
Legionella	Adenovirus		

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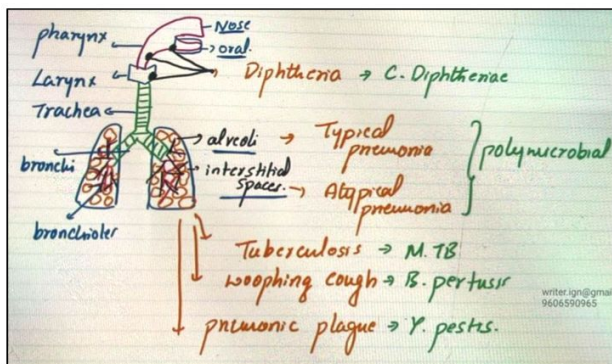
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# Introduction to Urogenital System

## INTRODUCTION TO URINARY TRACT INFECTION



### CLINICAL MANIFESTATIONS

5:32

- Fever
- Chills
- Urgency
- Increased frequency
- Burning on micturition
- Dysuria
- Suprapubic tenderness
- Upper UTI- severe back pain/ abdominal pain
- Urethritis- urethral discharge

### ETIOLOGICAL AGENTS

7:56

- Bacteria
  - E coli
  - Klebsiella
  - Proteus
  - Citrobacter
  - Pseudomonas
  - Acinetobacter
  - Mycobacterium tuberculosis
  - Staphylococcus aureus
  - Staphylococcus saprophyticus- common in females
  - Group b streptococci
  - Enterococcus

Pinch to zoom



- Virus
  - Adenovirus 11, 21- urinary bladder infection
  - Bk virus- hemorrhagic cystitis, nephropathy
  
- Parasites
  - Trichomonas vaginalis
  - Schistosoma haematobium
  
- Fungi
  - Candida albicans

**URETHRITIS**

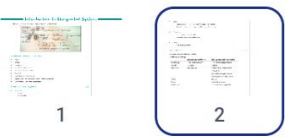
12:00

Sexually transmitted infection

Urethral discharge

	Gonococcal urethritis	Non-gonococcal urethritis
Discharge	Thick and purulent	Thin and mucopurulent
Onset	~2 days	>7days
Bacteria	Gonococcus	Chlamydia trachomatis
		TRIC D-K
		Mycoplasma genitalium Ureaplasma urealyticum
Virus	-	Hsv-2
Fungi	-	Candida albicans
Parasites	-	Trichomonas vaginalis

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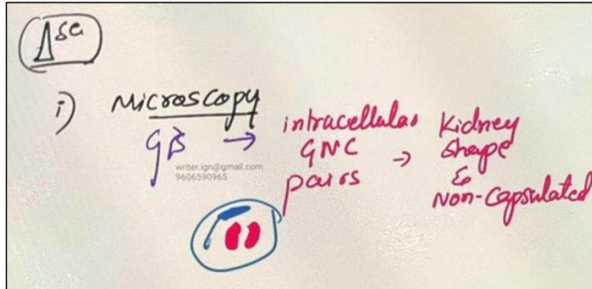


# Urethritis

## GONOCOCCI

Neisseria gonococci

- Gram -ve cocci in pairs
- Kidney shaped
- Non capsulated
- Intracellular



## VIRULENCE FACTORS

1:50

- Pili/fimbriae- Attachment to urinary tract epithelium
- IgA proteases- breakdown of secretory IgA
- Endotoxin -lipo oligosaccharides - endothelial injury - septicemia and shock

## CLINICAL MANIFESTATIONS

5:21

- Men
  - Urethritis
  - Pustular discharge from urethra- gonorrhoea
  - Perianal abscess- water can perinium
- Women
  - Vulvovaginitis
  - Cervicitis
  - Perihepatic inflammation and
  - Peritonitis
  - Fitz-Hugh-Curtis syndrome

Pinch to zoom



- Neonate
  - Ophthalmia neonatorum- pustular discharge from eye
- DGI- Disseminated gonococcal infection
  - Musculoskeletal system- polyarthritits
  - CVS- endocarditis

**DIAGNOSIS**

10:30

- Microscopy
  - Gram stain
  - Intracellular Gram -ve cocci in pairs, Kidney shaped, Non -capsulated
- Culture
  - Thayer martin medium
  - Modified New York medium
  - Transport media- Amies media, Stuart media
- Identification by biochemical methods
  - Maltose non-fermentation

**NON-GONOCOCCAL URETHRITIS**

15:25

Bacteria	Virus	Fungi	Parasites
Chlamydia trachomatis (most common)	Herpes simplex virus	Candida albicans	Trichomonas vaginalis
Mycoplasma hominis	Cytomegalovirus		

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# Genital Ulcerative Diseases

Sexually transmitted diseases

Bacteria

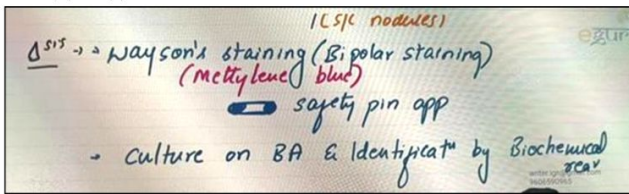
## 1. *Klebsiella granulomatis*

- Causes granuloma inguinale (Donovanosis)
- Genital ulcers
- Red, beefy ulcers-
- bleeds on touch
- Painless
- Pseudo bubos- subcutaneous nodules

### DIAGNOSIS

3:35

- Wayson's staining- bipolar staining
  - Methylene blue- only the poles are stained
  - Safety pin appearance



- Culture on blood agar
- Identification by biochemical reactions

## 2 CHLAMYDIA TRACHOMATIS LGV

5:54

- L1, L2, L3 serotypes
- Causes lymphogranuloma venereum
- Genital ulcers
- Does not bleed on touch
- Painless
- Bubos

### DIAGNOSIS

7:35

- Microscopy
- Not seen by any staining methods

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- Culture by embryonated egg yolk sac or tissue culture
- Identification by direct immunofluorescence

### 3 TREPONEMA PALLIDUM

9:50

- Causes syphilis
- Ulcers
- Hard indurated chancre
- Does not bleed on touch
- Painless
- Bubos

#### Diagnosis

- Microscopy
  - Not seen by Gram staining
  - Fontana stain- silver impregnation staining
- Culture in rabbit testes
- Identification by non-treponemal
  - VDRL
  - RPR
- And treponemal tests
  - FTA-ABS
  - TPHA

### 4 HEMOPHILUS DUCREYI

13:03

- Chancroid
- Genital ulcers
- Soft chancre
- Bleeds on touch
- Painful
- Bubos

#### Diagnosis

- Culture on chocolate agar
- Identification by biochemical reactions

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Viruses

**Herpes simplex virus- HSV-2**

- Genital herpes
- Vesicles in the genital area
- Genital ulcers
- Does not bleed on touch
- Painful
- Bubos

Diagnosis

- Tzanck smear- multinucleated giant cells
- Identification is by ELISA/PCR

Pinch to zoom



# Vaginitis

- Inflammation of vagina
- Clinical manifestations
  - Fever
  - Vaginal itching
  - Vaginal discharge
  - May be associated with urinary symptoms

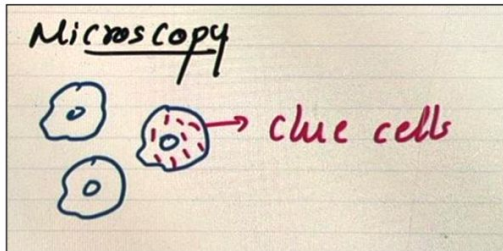
## Types

- Bacterial
- Fungal
- Parasitic

## BACTERIAL VAGINOSIS /VAGINITIS

2:00

- Caused by Gardnerella vaginalis
- Clinical manifestations
  - Fever
  - No itching
  - Thin, profuse, white colored, fishy smell discharge
- Diagnosis
  - Microscopy
    - Few epithelial cells loaded with Gardnerella vaginalis- clue cells



- Whiff test -positive
  - Add KOH to vaginal discharge → accentuation of fishy odour
- Treatment
  - Metronidazole

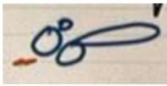
Pinch to zoom



**FUNGAL VAGINITIS**

4:55

- Caused by candida albicans
- Clinical manifestations
  - Fever
  - Severe vaginal itching that increases during night
  - Thick scanty, curdy white discharge
  - No fishy smell
- Diagnosis
  - Microscopy
    - Budding yeast cells with pseudo hyphae
    - Germ tube present
  - Microscopy
- Whiff test- negative
- Treatment
  - Fluconazole



Budding Yeast cells  
c̄ pseudo hyphae



Germ tube present

**PARASITIC VAGINITIS**

08:15

- Caused by trichomonas vaginalis
- Clinical manifestations
  - Vaginitis- strawberry vagina
  - Fever
  - Mild itching
  - Thin, profuse, yellowish green color, fishy smell
- Diagnosis
  - Microscopy

Pinch to zoom



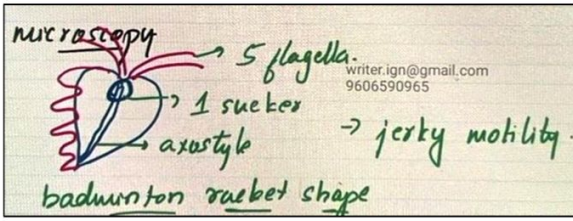
1



2



3



- Whiff test -positive
- Treatment
  - Metronidazole

Pinch to zoom

