

# **Sexually Transmitted Diseases**

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Our lecture talks about :

- **Risk factors and causes of STDs**
- 1-Non-Gonococcal urethritis.**
- 2 Gonococcal urethritis (Gonorrhoea).**
- 3 Syphilis.**
- 4 Chancroid.**
- 5 Skin manifestation of AIDS.**

# Risk factors for STDs:

1. Sexually active age (25-35 Yr.)
2. Sexual promiscuity (الاختلاط الجنسي).
3. History of sexually transmitted disease.
4. Sexual abuse.
5. Alcohol and drug abuse.
6. Multiple partners (Extramarital sexual contacts).

# Causes of STDs:

1. Bacteria: ( Neisseria gonorrhoea, treponema pallidum, Haemophilus ducreyi and others).
2. Viruses: (HIV, HPV, HSV, Molluscum contagiosum virus and others).
3. Protozoa: (Trichomonas vaginalis, Giardia lamblia, Entamoeba histolytica).
4. Fungi: Candida albicans.
5. Ectoparasites: (Sarcoptes scabiei, Phthirus pubis).

# 1-Non-gonococcal urethritis

- The most common sexually transmitted disease
- ✓ **Caused by : Chlamydia trachomatis (Mostly), ureaplasma urealyticum, Trichomonas vaginalis and rarely by others.**
- Incubation period 1-2 weeks.
- ✓ **Clinical presentations:**
  - **mild watery , mucoid or mucopurulent urethral discharge and dysuria.**
- ❑ **Diagnosis: Clinical presentations, Urethral discharge smear, urine analysis , PCR.**
- ❑ **Treatment: Doxycycline 100mg twice daily for 1-2 weeks.**
- ✓ **Partner should be treated in all STDs and should be examined for other possible STDs.**

# 2-Gonococcal urethritis (Gonorrhoea)

- ✓ Cause : *Neisseria gonorrhoea* (Gram-negative diplococci).
- Second most common STD.
- Incubation period: 3-5 days.
- ✓ Clinical presentations: It can present as urethritis, cervicitis, proctitis, pharyngitis and conjunctivitis in newborns because *Neisseria gonorrhoea* affects the gonorrhoea.
- ✓ Men usually present with heavy purulent (pus) discharge and dysuria . In women as cervicitis , the discharge is less.
- In women 50% of cases are asymptomatic .
- ☐ Diagnosis: clinical, urethral discharge smear and culture for antibiotic sensitivity.
- ☐ Treatment: Single dose of ceftriaxone 250mg IM and Doxycycline ( to treat any associated non-gonococcal urethritis) 100mg orally twice daily for 2 weeks, alternative therapeutic agents also present for some cases.
- ❖ Complications: epididymitis, orchitis, proctitis in men , Salpingitis and PID in females, infertility and gonococemia( Arthritis dermatitis syndrome).

# Gonococcal urethritis (Gonorrhoea)



MALE



FEMALE



✓ Heavy discharge in men ,  
while its mild in women.

✓ Gonococcal conjunctivitis , neonate gets infection from his mother during birth , prevented by giving Erythromycin eye drops soon after birth.  
✓ ( Ophthalmia Neonatorum ).

# Gonococcal urethritis (Gonorrhoea)



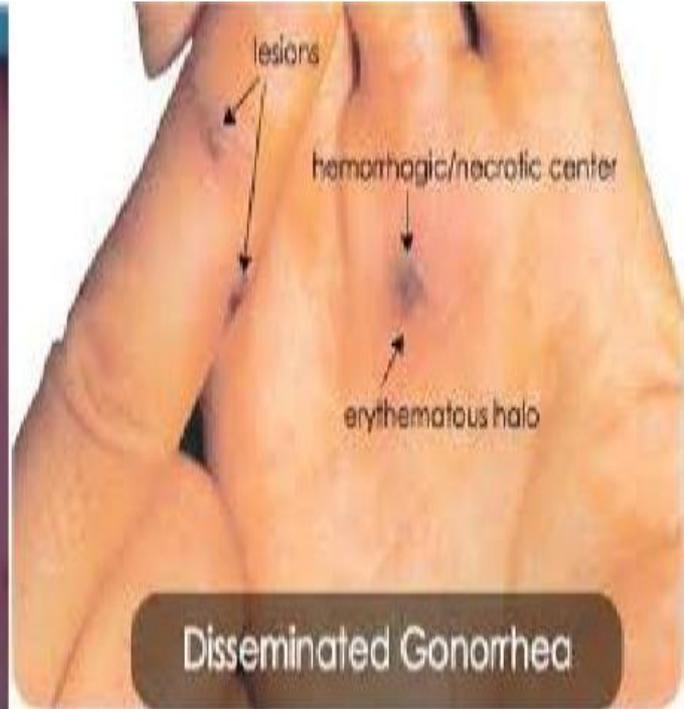
- ✓ Urethral discharge smear will show **gram -ve diplococci** and **pus cells (neutrophils)**.

## Selective Culture Medium



- The selective medium is Thayer – Martin medium containing **Vancomycin, colistin, and Nystatin**, effectively inhibits most contaminants including non pathogenic Neisseria

# Gonococcal urethritis (Gonorrhoea)



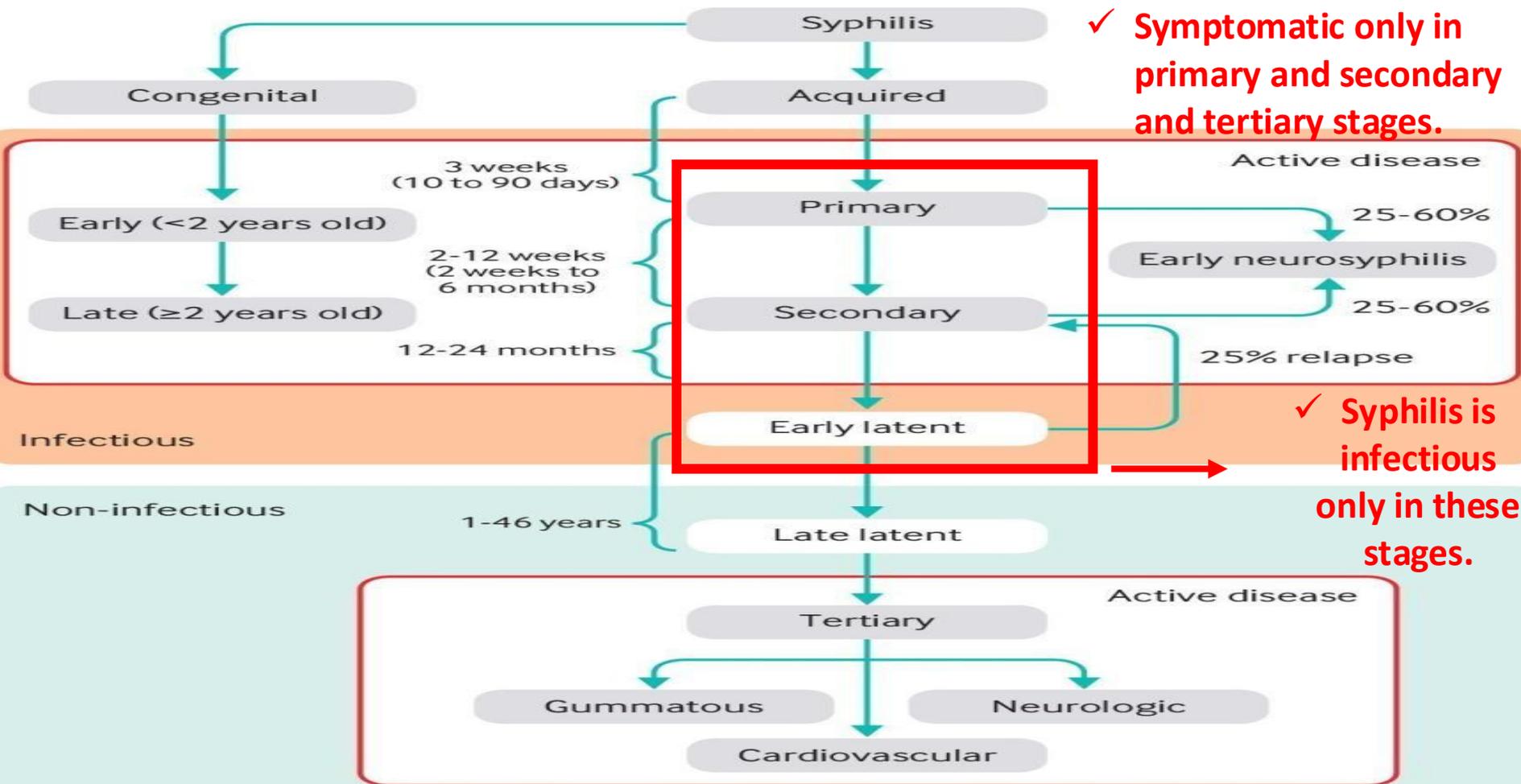
✓ **Gonococemia manifested as Arthritis and Dermatitis ( Necrotic and vasculitic lesions).**

# 3-Syphilis



- Caused by bacteria *Treponema pallidum* a spirochete (Discovered as a cause in 1905)
- Transmitted through direct sexual contact, other body fluids are also infectious when patients are in bacteremic stage.
- Infectivity is up to 30% per sexual contact and 60% per relationship.
- Incidence rates of syphilis have increased around the world especially in homosexual men and HIV patients.
- ✓ **We should have a high index of suspicion for syphilis in any sexually active patient with genital lesions or rashes.**
- ✓ **Primary syphilis classically presents as a single, painless, indurated genital ulcer (chancre), but this presentation is only 31% sensitive; lesions can be painful, multiple, and extra-genital.**
- ✓ **Diagnosis is usually based on serology, using a combination of treponemal and non-treponemal tests. Syphilis remains sensitive to benzathine penicillin G**
- Staging of syphilis is important because it is the basis of management (treatment, expected treatment response, follow-up periods, and partner follow-up).
- Patients with syphilis should be screened for HIV, gonorrhea, and chlamydia.

# Stages and classifications



# Primary syphilis

- Symptoms appear 10-90 days (mean 21 days) after exposure.
- Main symptom is a <2 cm **chancre**:
  - ✓ Progresses from a macule to papule to ulcer over 7 days
  - ✓ Painless, solitary, indurated, clean base (98% specific, 31% sensitive).
  - ✓ Site :On glans, corona, labia, fourchette, or perineum
  - ✓ A third are extragenital in men who have sex with men and in women.
- **Localized painless adenopathy.**
- **Chancre resolve within 3-10 weeks and 60% of patients do not recall this lesion because its asymptomatic sometimes.**

# Primary syphilis



✓ Painless, Indurated ulcer ( Chancre).



✓ Extra-genital Chancre with clean base on the area of contact ( lips).

✗ Peri anal chancre in homosexual male



# Secondary syphilis

- Symptoms appear 2 weeks to 6 months (mean 2-12 weeks) after exposure. Can be concurrent with, or up to 8 weeks after the chancre.

## ☐ Manifestations:

1. Rash :In about 90% of cases —Diffuse, symmetric, on trunk (often subtle or atypical)- asymptomatic usually.
2. Condylomata lata (fleshy moist papules) in about 20% of cases ( in moist areas = groin and flexural areas).
3. Patchy alopecia (4-11%).
4. Mucous patches-oral mucosa in about 30% of cases.
5. Generalized painless lymphadenopathy in about 75% of cases.
6. Fever, night sweats and headaches.
7. Neurologic symptoms in about 25% of cases—Cranial nerve palsies (II,VIII), eye redness or pain, meningitis, changes to mental status or memory.

# Secondary syphilis



- ✓ **Symmetrical , asymptomatic , Scaly papulosquamous rash on the trunk , extremities , palms and soles , any asymptomatic rash on these regions should urge us to do serological test for syphilis.**

# Secondary syphilis



- ✓ Moist papules on the genital area , very infectious.
- ✓ (Condylomata lata ).

# Secondary syphilis



✓ Mucous patches with erosions on the oral mucosa and the tongue.

# Secondary syphilis



- ✓ Multiple patchy alopecia.
- ✓ (Moth eaten alopecia).

# Latent syphilis

- ✓ **No symptoms with positive serology.**
- **In early latent stage (<12 months by USA and UK and Canada guidelines or <24 months by WHO guidelines after exposure) 25% of subjects relapse to secondary syphilis and they are infectious (90% of these in first year, 94% within 2 years).**
- **In late latent stage (>12 months by USA, UK and Canada guidelines or >24 months by WHO guidelines after exposure), no relapse and not infectious.**
- ✓ **About 25% Of cases in late latent syphilis develop tertiary syphilis.**

# Tertiary syphilis

- 1-46 years after exposure

## □ Manifestations:

1. Neurologic-about 6% —paresis, tabes dorsalis.
2. Cardiovascular about 10%—aortitis.
3. Gummatous about 20% —necrotic granulomatous lesions in the bones and skin.

# Tertiary syphilis



- ✓ Necrotic tissue.
- ✓ ( Gumma).

• Primary gaze



• Light response



• Near response



- ✓ Light near dissociation ( irregular pupils , not reactive to light but reactive to near object).
- ✓ (Neurosyphilis –Argyll Robertson pupils).

# Diagnosis of Syphilis

1. **Treponema pallidum** may be visualized from lesions using Dark field microscopy, direct fluorescent antibody testing, or polymerase chain reaction. This is helpful in early disease (first 2 weeks).
  2. Because these tests are not widely available, diagnosis predominantly relies on serology ( antibodies develop after 2 weeks).
- **Serologic tests and laboratory algorithms vary :**
3. Testing usually begins with a screening treponemal test, such as an enzyme or chemiluminescence immunoassay (EIA or CLIA) to detect treponemal antibodies.
  4. A positive screening test should be followed by a confirmatory treponemal test, typically the T pallidum particle agglutination (TPPA).

- **If both tests are positive, infection with syphilis is confirmed** 😞 😞 .
- Thereafter, **the rapid plasma reagin (RPR)** test (a quantitative non-treponemal test) should be used to measure disease activity and to track response to treatment ,although 15-41% of patients remain reactive even after successful treatment.
- Other serological tests for syphilis:
- **Non-treponemal:** -VDRL(Venereal Disease research laboratory )and RPR(Rapid Plasma Reagin Test.
- **Prozone phenomenon-False negative results because of antibody excess, so dilution is needed.**
- **Treponemal:**-FTA-ABS test( Flourescent Treponemal Antibody Absorption test and TPHA(Treponema Pallidum Haemagglutiation test)

# Treatment: -primary, secondary and early latent syphilis

## ❑ First line treatment:

- **Benzathine penicillin G  $2.4 \times 10^6$**  units, single intramuscular dose (WHO ,US , European and Canada guidelines).
- **Doxycycline** 100 mg, taken orally twice daily for **14 days** (WHO ,US , European and Canada guidelines).

## ❑ Alternate treatments:

- **Ceftriaxone** 1 g, intravenous or intramuscular once daily for 10 days (Us , Uk and Canada guidelines).
- **Procaine penicillin G  $1.2 \times 10^6$**  units, intramuscular once daily for 10 days(WHO,UK,European guidelines).
- **Azithromycin** 2 g, single oral dose(WHO ,UK , European guidelines).

# Treatment –Late latent

## ❑ First line treatment:

- Benzathine penicillin G  $2.4 \times 10^6$  units, intramuscular dose once weekly for 3 weeks (WHO, US, European and Canada guidelines).
- Doxycycline 100 mg, taken orally twice daily for **28 days** (WHO, US, European and Canada guidelines).

## ❑ Alternate treatments:

- **Ceftriaxone** 1 g, intravenous or intramuscular once daily for 10 days (US, UK, Canada guidelines).
- **Procaine penicillin G**  $1.2 \times 10^6$  units, intramuscular once daily for 14-21 days (WHO, UK and European guidelines).

❖ **Neurosyphilis treatment:** Because ProcainPenicillin G poorly penetrates CSF, Neurosyphilis should be treated with aqueous penicillin G,  $4 \times 10^6$  units intravenously every 4 hours for 10-14 days.

# Jarish-Herxheimer Reaction

- ✓ **Self-limited phenomenon after first dose of treatment of syphilis.**
- ✓ **Occurs within 4-6 hours of giving the penicillin and subsides within < 24 hours.**
- ✓ **Only appears after the first dose.**
- ✓ **Fever, chills, headache, malaise, arthralgia and myalgia and may be exacerbation of skin or mucous membrane lesions.**
- ✓ **It is more common in early and seropositive syphilis.**

# Congenital syphilis-Early and Late

- **Early congenital syphilis :**

1. Hepatomegaly most common findings and may associated with splenomegaly.
2. Jaundice ,may or may not present.
3. Rhinitis, one of the first clinical presentation.
4. Generalized non-tender lymphadenopathy-common finding.
5. Maculopapular skin rash appears 2 weeks after rhinitis.

- **Late congenital syphilis:**

6. Skin and mucous membrane Gumma.
7. Facial changes: frontal bossing, saddle nose, prominent maxilla.
8. Anterior bowing of shin (saber shin).
9. Hutchinson teeth-hypoplastic notched permanent teeth(upper central incisors).
10. Nerve palsies , Sensorineural hearing loss and changes in vision.
11. Eye involvement.

# Early and Late congenital syphilis



- ✓ Saddle nose and frontal bossing.
- ✓ (Late congenital syphilis).



- ✓ Hutchinson teeth.
- ✓ (Late congenital syphilis).



- ✓ Rhinitis with snuffles.
- ✓ (Early congenital syphilis).



- ✓ Saber shins.
- ✓ (Late congenital syphilis).

# Treatment of congenital syphilis

- Infants up to 4week of age Aqueous crystalline penicillin G, 50,000 units/kg per dose IV every 12 hours in the first 7 days of life. After 7 days of life, 50,000units/kg per dose every 8 hours for 10-14 days. Alternatively procaine penicillin G 50,000 units/kg/day IM for 10-14 days
- Infants older than 4weeks and older children: Aqueous penicillin G 50,000 units/kg per dose every 6 hours IV for 10-14 days

# Chancroid

- ✓ **Caused by *Haemophilus ducreyi*-Gram negative bacteria.**
- Uncommon sexually transmitted disease with genital ulcers, most prevalent in developing countries.
- Incubation period: 3-7 days.
- ✓ **Characterized by mostly painful genital ulcers ,often multiple with tender, painful lymphadenopathy mostly unilateral (bobbo ).**
- ☐ **Diagnosis:**
- ✓ **Smear with Gram stain ( appears as school of fish under microscope).**

✓ **Cult**



Gram stain suggestive of *Haemophilus ducreyi* (gram-negative, slender rod or coccobacillus in a "school of fish" pattern)

13



## Chancroid: (soft Chancre)

- Third venereal disease (Syphilis, Gonorrhoea).
- *Haemophilus ducreyi*
- Gram -ve, coccobacillus.
- Tropical. HIV common, Prostitution risk factor\*
- Erythematous papule → painful ulcer, yellow pus.
- Inguinal lymphadenopathy → buboes → pus draining ulcers.



# Chancroid



- ✓ Painful, tender papules and ulcers with pus.
- ✓ (Chancroid).



re 2 Right sided inguinal bubo and penile ulcer in a man

- ✓ Tender, unilateral Lymphadenopathy.
- ✓ (Bubo).

# Treatment of Chancroid

- **Azithromycin 1g orally single dose or**
- **Ceftriaxone 250mg IM single dose or**
- **Ciprofloxacin 500mg orally twice daily for three days or**
- **Erythromycin 500mg orally t.i.d for 7 days**
- **Partner must be treated , and the patient should be examined for other STDs.**

# **Skin manifestations of AIDS**

- 1. Kaposi`s sarcoma.**
- 2. Hairy leukoplakia.**
- 3. Eosinophilic folliculitis of AIDS.**
- 4. Proximal onychomycosis.**
- 5. Severe seborrheic dermatitis.**
- 6. Opportunistic infections.**
- 7. Severe bacterial ,viral and fungal infections.**



- ✓ Vascular tumor appearing as dull red plaques , diagnosed by skin biopsy.  
✓ ( Kaposi's sarcoma).



- ✓ Whitish verrucous at the edge of the tongue due to EBV or HPV in AIDS patients.  
✓ ( Hairy leukoplakia).



Figure 1. Malassezia folliculitis: dermal-appearing papules on the forehead.

- ✓ Very itchy inflammatory infiltrate which is seen under the microscope occurring in the face, upper chest and upper back.
- ✓ (Eosinophilic folliculitis).



Figure 1: Proximal subungual onychomycosis involving the left

- ✓ Proximal onychomycosis.



- ✓ **Erythema on the nasolabial folds and face.**
- ✓ **( Severe seborrheic dermatitis).**



- ✓ **Bacillary angiomatosis due to opportunistic infection by Bartonella bacteria .**