Sexually transmitted diseases

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Our lecture talks about :

→ **Risk factors and causes of STDs 1-Non-Gonococcal urethritis.**

2-Gonococcal urethritis (Gonorrhea). 3- Syphilis.

4 Chancroid.

5 Skin manifestation of AIDS.

Risk factors for STDs:

1. Sexually active age (25-35 Yr.)
2. Sexual promiscuity
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 gonorrhea,treponema pallidum,Heamophilus 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 trochomatis (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 (Gonorrhea)

✓Cause : Neisseria gonorrhea (Gram-ve 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 gonorrhea affects the ***columnar epithelium***.

✓Men usually present with heavy purulent (pussy) 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) 100g orally twice daily for 2 weeks, alternative therapeutic agents also present for some cases.

❖Complications: epididymitis, orchitis,proststitis in men ,Salpingitis and PID in females, infertility and gonococcemia(Arthritis dermatitis syndrome).

Gonococcal urethritis (Gonorrhea)

- ✓ **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 (Gonorrhea)

✓ **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 (Gonorrhea)

✓Gonococcemia 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.

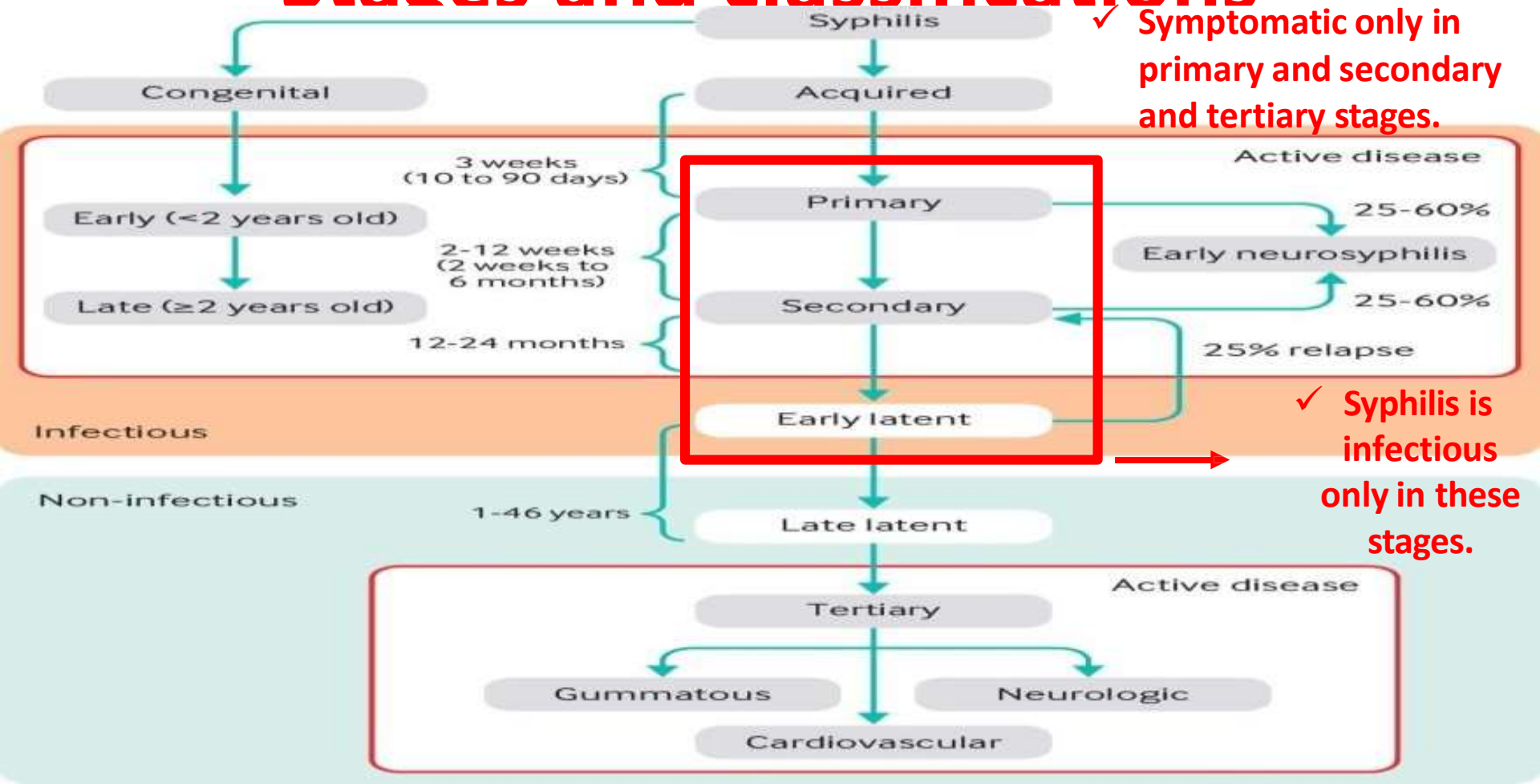
✓We should have a high index of suspicion for syphilis in any sexually active patient with genital lesions or rashes.

✓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



✓ Symptomatic only in primary and secondary and tertiary stages.

✓ Syphilis is infectious only in these stages.

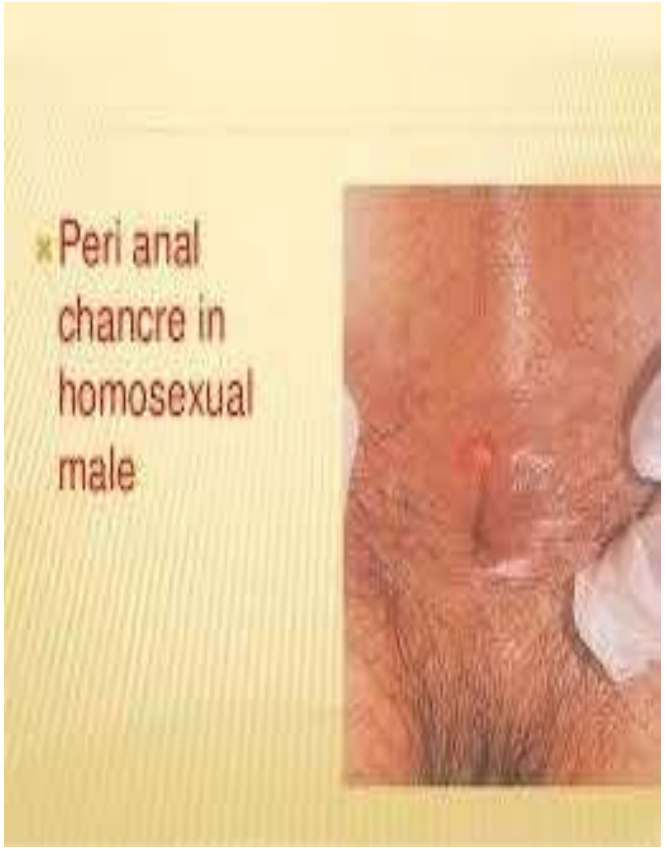
Primary syphilis

- 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.
- Chance 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).



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% 0f cases in late latent syphilis develop tertiary syphilis.**

Tertiary syphilis

- 1-46 years after exposure

❑ Manifestations:

1. Neurologic-about 6% —paresis, tabes dorsalis.

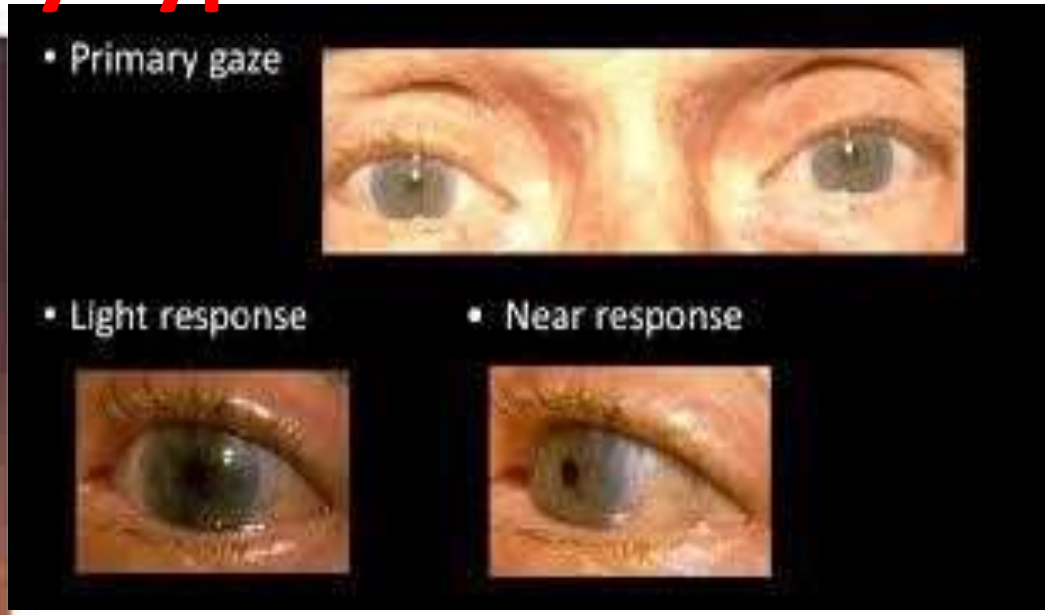
2. Cardiovascular about 10%—aortitis.

3. Gummatous about 20% —necrotic granulomatous lesions in the bones and skin.

Tertiary syphilis

✓ Necrotic tissue.

✓ (Gumma).



✓ 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 :

1. Testing usually begins with a screening treponemal test, such as an enzyme or chemiluminescence immunoassay (EIA or CLIA) to detect treponemal antibodies.
2. 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 2.4×10^6 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 1.2×10^6 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 2.4×10^6 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 1.2×10^6 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, 4×10^6 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 subside 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:**

1. Skin and mucous membrane Gumma.
2. Facial changes: frontal bossing, saddle nose, prominent maxilla.
3. Anterior bowing of shin (saber shin).
4. Hutchinson teeth-hypoplastic notched permanent teeth(upper central incisors).
5. Nerve palsies , Sensorineural hearing loss and changes in vision.
6. 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).

Chancroid

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

✓Painful, tender papules and ulcers with pus.

✓(Chancroid).

✓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. Monomorphous, dermal-appearing papules on the forehead

Figure 1: Proximal subungual onychomycosis involving the left

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

✓Proximal onychomycosis.

✓ Erythema on the nasolabial folds and face.

✓ (Severe seborrheic dermatitis).

✓ Bacillary angiomatosis due to opportunistic infection by Bartonella bacteria .