

Sexually Transmitted Diseases (STD)

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(Lecture for Dental Students)

BACTERIAL STD

- **Neisseria gonorrhoeaea**
- Chlamydia trachomatis
- **Treponema pallidum**
- Gardnerella vaginalis
- Haemophilus Ducrey
- Calymatobacterium granulomatis
- Shigella
- Streptococcus B
- Mycoplasma hominis
- Ureaplasma urealyticum

VIRAL STD

- HERPES SIMPLEX
- HEPATITIS A,B,C
- CYTOMEGALOVIRUS
- HUMAN PAPILLOMA
- MOLLUSCUM CONTAGIOSUM
- HIV

FUNGAL STD

- CANDIDA ALBICANS

PROTOZOON

- *Trichomonas vaginalis*
- *Entamoeba histolytica*
- *Giardia lamblia*

ECTOPARASITA

- Pediculus pubis
Sarcoptes scabiei

STD

- **Transmission**

- Sexually!
- Toilet, ~~towel~~, etc.
- Breastfeed
- Blood
- Transplacental, vertical transmission

- **Incubation period:**

- Days: gonorrhoea
- Weeks: syphilis, trichomonas, NGU
- Months: HBV, HPV, HSV

- **Symptoms**

- No
- Few / aspecific
- Acute – urgent
- Late-severe-life-threatening

STD:CLINICAL SYMPTOMS

- Localised
- Generalised

- Confined to skin or mucus membrane
- On other organs without skin symptoms (late consequences)

STD

- **Clinical symptoms:**
- localized to the **genital region** / early syphilis /I-II/, gonorrhoea, NGU/
- **skin** manifestations on other body regions /sy II, AIDS/
- manifestations on **other organs** /AIDS, hepatitis, late syphilis /

STD:CLINICAL SYMPTOMS

- **Localised skin** symptoms
- Localised mucous membrane symptoms (genital, oral, anal)

- Ulcer (sy I)

STD:CLINICAL SYMPTOMS

- Localised skin symptoms
- Localised **mucous membrane** symptoms (genital, oral, anal)

- Papules, plaques

sy II

STD:CLINICAL SYMPTOMS

- Localised skin symptoms
- Localised mucous membrane symptoms (genital, oral, anal)

- Vesicle- herpes infection

STD:CLINICAL SYMPTOMS

- Localised skin symptoms
- Localised mucous membrane symptoms (genital, oral, anal)

- Verrucous lesions
- (HPV-condyloma acuminatum.)

STD:CLINICAL SYMPTOMS

- **Localised** skin symptoms
- Localised mucous membrane symptoms (genital, oral, anal)
- Discharge
- (go)

STD:CLINICAL SYMPTOMS

- **Generalised skin** symptoms:

Maculopapular rash with lymphadenomegaly

Sy II

STD -skin manifestations

- **Genital region:**
 -
 - 1. Ulcus
 - 2. Vesicle
 - 3. Discharge
 - 3. Vegetating papules /condyloma /
- Sy II.- HIV /early symptoms /:
generalised exanthemes /
widespread symptoms- mostly on the trunk /

STD -skin manifestations

- **Genital region:**
 -
 - 1. Ulcus (syll u.molle)
 - 2. Vesicle (herpes)
 - 3. Discharge (go,NGU)
 - 3. Vegetating papules /syll /
 - 4.verrucous lesions (HPV)
- Sy II.- HIV /early symptoms /:
generalised exanthemes /
widespread symptoms- mostly on the trunk /

General rules

- Co-infections!
- Severe complications
 - PID
 - Epididimo-orchitis
 - Extrauterin gravidity
 - Abortus
 - Chronic pelvic pain
 - Neurologic, cardiovascular
 - immunodeficiency
- Special anatomy:
 - intertriginous aeras
 - thin, sensitive skin
 - barrier function decreased
 - moistness
 - ↑ pH
 - ↑ percutan absorption
 - ↑ irritability

Discharge / fluor

- Infectious:
 - Gonorrhoea
 - NGU
 - Chlamydia tr. D-K
 - NGNCU
 - Ureaplasma U.
 - Mycoplasma genitalium
 - M. hominis
 - Trichomonas v.
 - Candida
 - HSV
 - Anaerob bacteria
- Non-infectious
 - Congenital abnormalities
 - Tumor
 - Mechanical irritation
 - Chemicals
 - Spicy food
 - Alcohol
 - Chili
 - Etc.
- ? Syndromic management ?

Who gets STIs?

Risk groups

- 1. promiscuous people (4 partners/year \leq)
- 2. MSM
- 3. iv. drug user
- 4. prostitutes
- 5. certain professions
- 6. lack of condom use
- Etc. (chat, love box, swinger parties)

Partner notification/ contact-tracing

- contacting the sexual **partners** of an individual with an STI and informing them that they have been exposed to infection
- breaking the chain of transmission of infection

Patient referral—the index patient is encouraged to contact **partners** and advise them to seek appropriate medical care.

1. **Provider referral**—the health-care workers involved in the index patient's care can notify the sexual **partners** without naming the patient concerned

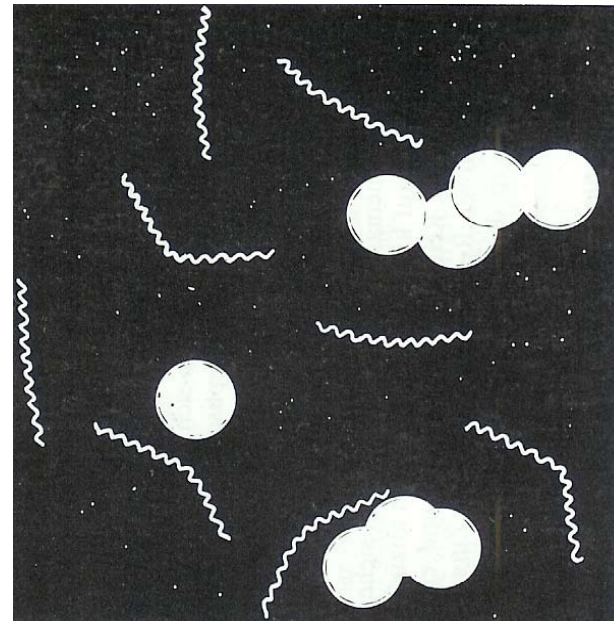
2. **Conditional referral**—the health-care worker obtains names of their sexual **partners** but allows patients a period of time to notify **partners** themselves. If the **partners** are not notified within this time period the health-care professional notifies their sexual **partners** without naming the patient concerned.

Sexually transmitted diseases

- Syphilis
- Gonorrhoea
- Non-gonorrhoeic urethritis

Syphilis- Lues- M. Schaudinn

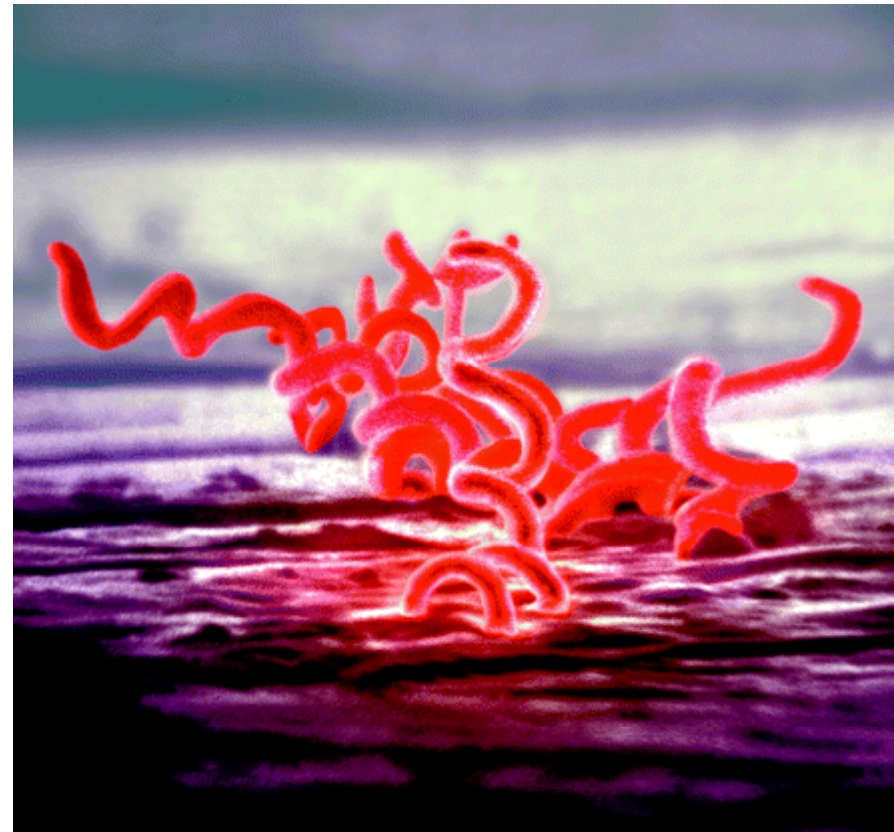
- Treponema pallidum 5-15 um, rotation-movement, dark-field microscopy, DD: pathogenic and non-pathogenic
- penicillin sensitive
- chronic disease
- **SY: the great imitator**



Schaudinn and Hoffmann

Syphilis: *Treponema pallidum*

- **Characteristics:**
Coiled, motile spirochaete bacterium Humans are its only natural host
- Genome sequenced, very small, circular
- Obligate parasite (limited metabolic capabilities)
- Not cultivable in vitro



SYPHILIS

- 1. EARLY
- 2. LATE

- latent form /early, late /-without clinical symptoms

SY I.

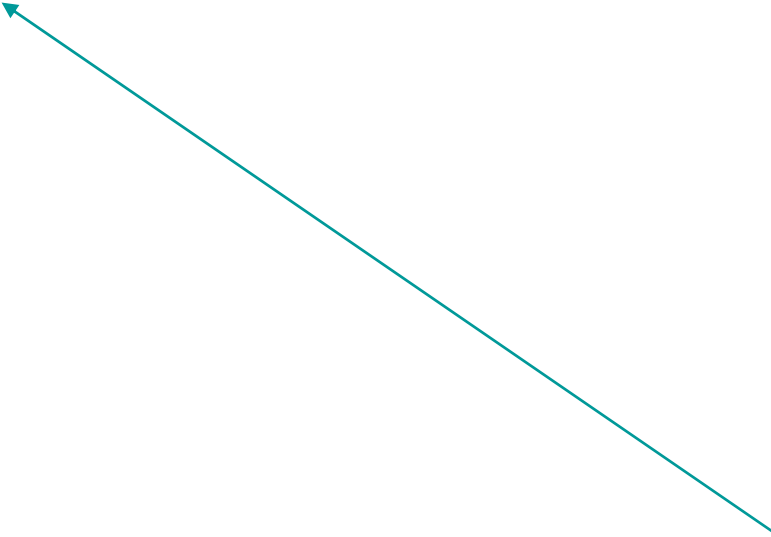
Primary Sy

- **primary** chancre or affection : painless ulcer accompanied by bilateral painless lymphnode
- firm (ulcus durum), livid-red
- Incubation period: two-three weeks (after the intercourse)
- lymphangitis sy, chorda sy,
- dg: dark field microscopy, serology

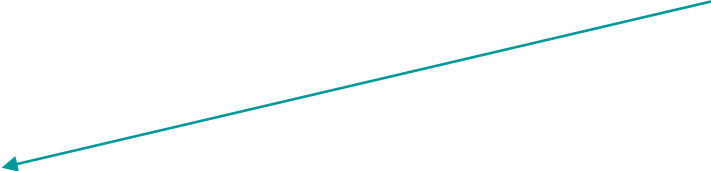
SY I.

SY I. –Lip localization

Primary syphilis



Chancere



Primary syphilis

Chancce

Chancre

Chancre

Chancre

Primary syphilis

oedema

Primary syphilis- differential diagnosis

GENITAL ULCERS

HERPES GENITALIS

BEHCET S SYNDR.

BALANITIS

ERUTHEMA MULTIFORME

SCABIES

CARCINOMA

TRAUMA

SYPHILIS

ULCUS MOLLE

LYMPHOGRANULOMA VENEREUM

GRANULOMA INGUINALE

Sy II

Secondary

- generalized lymphadenopathy, condylomata lata, corona sy, roseola,
- papules, follicular sy, plaques muqueuses, leucoderma syphiliticum
- alopecia sy diffusa o. parvomaculata), sy maligna (necrotic ulcera -HIV)

Typical circinaer scaling of roseolae

red papules with scales
on the palms and soles

perianal erythematous,
exsudative papules-
condylomata lata

Secondary syphilis

PALMAR PAPULES-BIET SIGN

PLANTAR PAPULES

Secondary syphilis

Maculopapular rash

Condyloma latum

Secondary syphilis

Plaque mucosae

**Palmar-plantar
papules**

Secondary syphilis

Condyloma latum

Secondary syphilis differential diagnosis

- drug eruption
- viral exanthema
- pityriasis rosea
- psoriasis, lichen, seborrheic dermatitis
- dysidrosis
- Alopecia areata, diffusa

- condyloma acuminatum-HPV infection

Secondary syphilis diagnosis

- Serological tests

Serological tests

- RPR, VDRL
 - TPHA
 - ELISA
 - Western blot
-
- FTA- ABS
FTA -ABS IGM

Connatal syphilis

- Early:
- PEMPHIGUS SYPHILITICUS
- CORYZA SYPHILITICA
- PARROT SCARS
- OSTEOCHONDRITIS ET PERIOSTITIS
SYPHILITICA ATROPHY,
HEPATOMEGALY
- PNEUMONIA

CONNATAL SYPHILIS

- Late:
- SADDLE NOSE
- GOTIC PALATE
- BOWED / SABER SHIN
- HUTCHINSON TEETH
- PARENCHYMATOUS KERATITIS
- HEARING DIFFICULTY, HEARING LOSS

SYPHILIS TREATMENT

- Procain penicillin im. 1 mill. U/d
- Neurosyphilis: crystalline, high dose iv penicillin

European Guideline on the management of Syphilis 2007

- **procain penicillin (Retradillin®)im.**

- 600.000 E im./day - weekends!
- Sy. I. : 10-14 days
- Sy. II. vagy sy. latens: 17-21 days

or

- **benzathin penicillin (Retarpen ®, Extencilline ®)**

- 2.4 ME = 2x1.2 ME
- Sy. I.: 1x(Σ 2.4 ME)
- Sy. II., Sy. latens recens: 2 x, 1/week (Σ 4.8 ME)
- Sy. latens tarda: 3 x, 1/week (Σ 7.2 ME)

SY treatment

neurosyphilis

- **aqueous crystallpenicillin G** 18-24 M IU/day **i.v.** (4.5-6 M in 4 hours) for 10-14 days
- repeat if necessary
- iv. doxycyclin or iv ceftriaxon
- serological follow-up and liquor controll

Sy preventive treatment

- For contact persons who are seronegative
- For gravid females who had had sy before, and who had been treated correctly before

Sy diagnostic

- **clinical symptoms!!**
- dark-field microscopy from sy I and II
- serological tests
- liquor if neurosyphilis can not be excluded
- histology from gummas
- internal, ophthalmological and neurological studies sy III.

Sy diagnostic

Serology:

Screening tests:

- RPR, VDRL- non- treponemal (cardiolipin) antigen - precipitation
- ELISA, TPHA (hemagglutination)

Verifying tests:

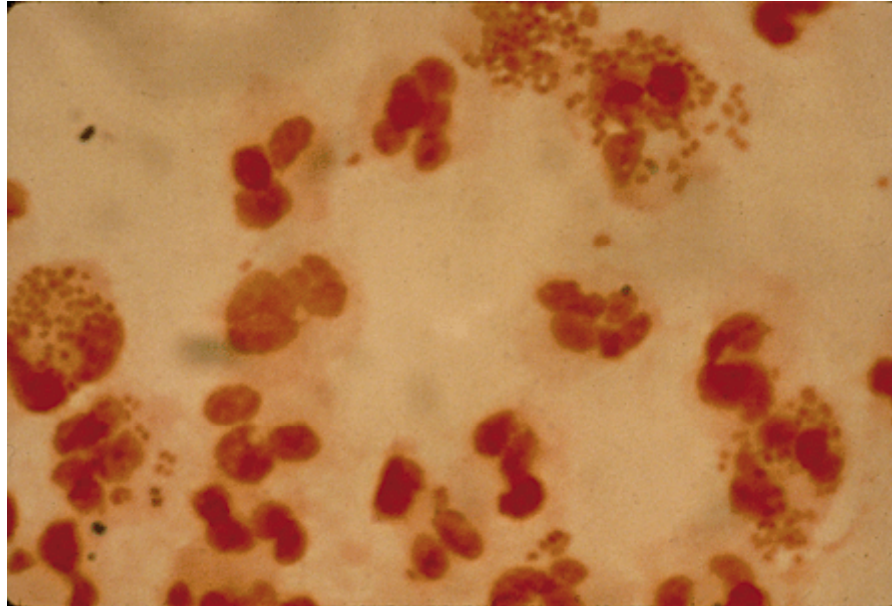
- TPHA, FTA-ABS, ELISA, Immunoblot
- PCR

Gonorrhoea

- Diagnosis:
- GRAM STAIN
- CULTURE

Symptoms

- acute process, with discomfort, dysuria, and purulent discharge usually ensuing from 2 to 10 days after exposure
- purulent discharge.
- Fifteen percent of urethritis in the male is minimally symptomatic or asymptomatic.



Diagnostic Gram-stained smear of urethral exudate of a man with gonococcal urethritis.



Males

- epididymitis, seminal vesiculitis, and prostatitis occur
- Anorectal and pharyngeal gonococcal colonizations are common

Females

- acute salpingitis may occur (20 to 40 percent) or the less-specific symptoms of dysuria
- increased discharge
- abnormal bleeding (20 to 30 percent) may be seen within a few days to a few weeks.
- Thirty to 60 percent of infected women will be minimally affected or asymptomatic, yet remain long-term carriers capable of transferring the infection.
 - Pharyngeal
 - Anal infection
- cultures of endocervix, urethra, rectum, and pharynx

Therapy

- 1x250mg ceftriaxon im
- 400mg cefixim p.o.
- 1x 2 g Spectinomycin im

Pelvic inflammatory disease (PID)

- is the most important complication of **gonococcal infection**
- result of ascending infection from the endocervix, causing endometritis and/or salpingitis and/or pelvic peritonitis.
- Clinical findings:
 - abdominal pain with minimal tenderness in mild cases to fever
 - severe abdominal pain, and exquisite tenderness with adnexal masses in florid cases.
- Prompt diagnosis and aggressive treatment
- infertility, ectopic pregnancy, and chronic pelvic pain are frequent complications
- Several organisms other than ***N. gonorrhoeae*** may cause PID

Non-gonorrhoeal infection

- **CHLAMYDIA INFECTIONS**
- ***Chlamydia trachomatis***
D, E, F, G, H, I, J, and K are associated with genital tract infections
- Conjunctivitis
- and childhood pneumonia
- and serovars L1, L2, and L3 cause lymphogranuloma venereum (LGV)



Chlamydia - female

- mucopurulent cervicitis
- purulent vaginal discharge
- lower abdominal pain
- postcoital or intermenstrual bleeding
- dysuria, and pelvic inflammatory disease (PID)
- Sequelae include extrauterine pregnancy, tubal infertility, and cervical cellular atypia.

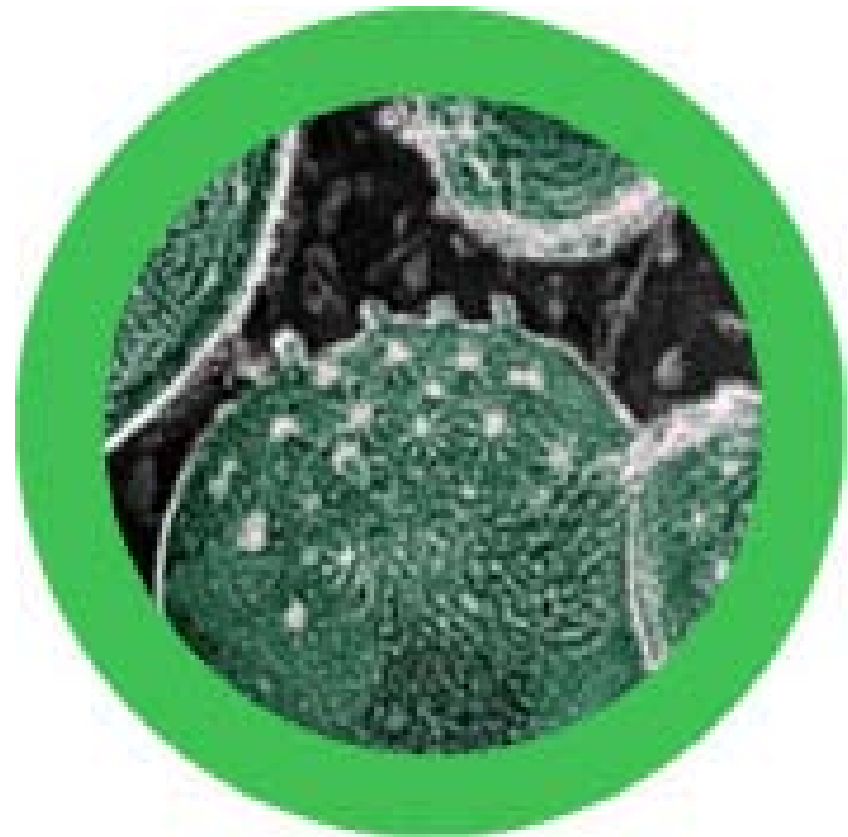
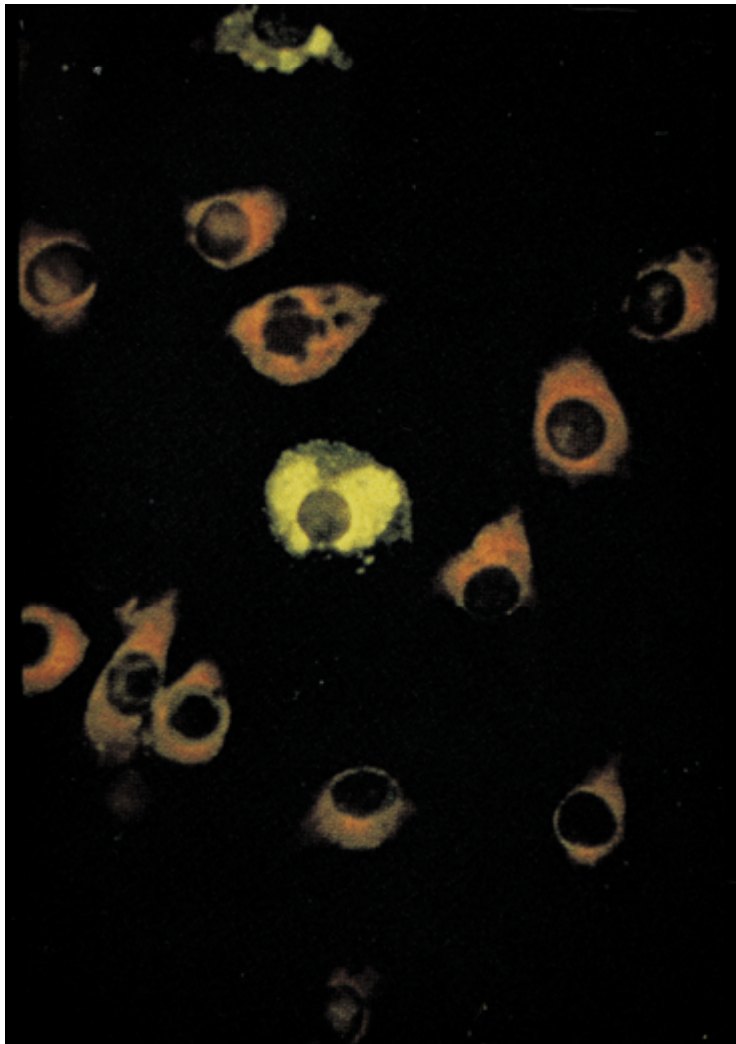
PID

- Lower abdominal tenderness
- Bilateral adnexal tenderness
- Cervical motion tenderness
- No evidence of a competing diagnosis (e.g., positive pregnancy test, acute appendicitis)
- Perihepatitis (Fitz-Hugh-Curtis syndrome)

Chlamydia- MEN

- urethral discharge
- Dysuria
- signs of epididymitis, and prostatitis
- The genital manifestations of chlamydial infection are very similar to those of ***gonococcal infection***, but the symptoms start later and are milder.

Detection of *Chlamydia trachomatis* by direct immunofluorescence with monoclonal antibodies.



Therapy

- Doxycyclin 100mg 2x1 7days
- Azithromycin 1g single dose

Sexual partners!!!

Control examination!

NGNC infections

GENITAL MYCOPLASMAS

- Mycoplasmas are the smallest self-replicating microorganisms
- In the genital region, three species, *Mycoplasma hominis*, *Ureaplasma urealyticum*, and *M. genitalium*, have been detected and correlated with genital disease.
- Mycoplasmas are found relatively frequently on the genital mucosa in sexually active people without giving rise to any manifest disease
- The frequency of the colonization of the genital mucosa increases with sexual experience and the number of partners.

Symptoms

MALE

- Acute urethritis
- Chronic prostatitis
- Epididimitis,
epididimoorchitis
- Oligoasthenospermia!
!!
- Pyelonephritis
- Reiter sy, SARA

FEMALE

- Vaginitis
- Salpingitis, PID
- Postpartum sepsis
- Habitual abortion,
choriamnionitis

Symptoms

MALE

- Acute urethritis
- Chronic prostatitis
- Epididimitis,
epididimoorchitis
- Oligoasthenospermia!
!!
- Pyelonephritis
- Reiter sy, SARA

FEMALE

- Vaginitis
- Salpingitis, PID
- Postpartum sepsis
- Habitual abortion,
choriamnionitis

Therapy

- Doxycyclin 100mg 2x1, 8-14 days
- Azithromycin 500mg for 5 days
- Clindamycin 2x300mg 7 days

TRICHOMONAS VAGINALIS

- Transmission
 - sexual contact.
 - perinatal infection is the most frequent nonvenereal form of transmission.
 - The causative pathogen can survive for several hours on moist objects and in body fluids. (towel)

Clinical Manifestations

- Women
 - yellow vaginal discharge
 - abnormal vaginal odor
 - Pruritus
 - reddening and swelling of the vulva
 - punctate petechiae of the cervix (“strawberry cervix”)
 - More than half of all infected women show symptoms
- Men
 - 50% asymptomatic
 - milky discharge and dysuria
 - Serious complications are unknown. (HIV transmission)

Trichomonas vaginalis infection: “strawberry” appearance
of cervix with punctate bleeding erosions.

Therapy

- Metronidazol 500mg 10 days
- Metronidazol 2g single dose

- Partner!!

Non gonorrhoeal urethritis - cervicitis

- Most common disease
- Ascending infection in men, women
- PID- pelvic inflammatory disease
- fertility!

Herpes genitalis

Herpes genitalis

Condyloma acuminatum

- HPV viral infection
- High risk subtypes
- Carcinogenic risk
 - CIN
 - VIN
 - PIN

Condyloma acuminatum

Condyloma acuminatum

Cc.penis

Lymphogranuloma venereum