- The name of this group of diseases was changed from "venereal diseases" to "sexually transmitted diseases" or "STDs"
- Now many persons call them "sexually transmitted infections or "STIs."

Sexually Transmitted Infections

- A STI is an infection that is transmitted through sexually activity

Importance of STIs

- Most neglected area of healthcare in developing countries (vaginitis, cervicitis and PID)
- Major cause of infertility in both females and males

Source: Lande 1993; WHO 1996.

Importance of STDs

- Account for up to 40% of gynecologic hospital admissions
- Cofactor in HIV and HBV transmission
- STDs are almost as common as malaria: 333 million new cases each year

STDs are a Significant Problem

The consequences of untreated STDs

- ***Ectopic pregnancy*** (7-10 times increased risk in women with history of PID)
- Increased risk of ***cervical cancer***
- ***Chronic abdominal pain*** (18% of females with a history of PID)

Source: Lande 1993.

STIs are a Significant Problem

- **Infertility:**
  - 20–40% of *males* with untreated chlamydia and gonorrhea
  - 55–85% of *females* with untreated PID

  (8–20% of females with untreated gonorrhea develop PID)
- Increased risk of HBV and HIV/AIDS transmission

Source: Lande 1993.

STIs are a Significant Problem

Infants can:

- Be infected at birth with blinding eye infections and pneumonia (chlamydia, genital herpes and gonorrhea)
- Suffer central nervous system damage or die (syphilis or genital herpes) as a result of STDs

STIs – classification

- BACTERIAL
- VIRAL
- PROTOZOAL
- FUNGAL
- ECTOPARASITES

BACTERIA

- **Neisseria gonorrhoeae** gonorrhea
- **Chlamydia trachomatis** chlamydia
- **Treponema pallidum** Syphilis
- **Hemophilus ducreyi** Chancroid
- **Calymmatobacterium granulomatis** Donovanosis (granuloma inguinale)
- **Gardnerella vaginalis** Gardnerella-associated ("nonspecific") vaginosis
- **OTHERRS** :eg. *Mycoplasma hominis ,Ureaplasma urealyticum?*

VIRUSES

- Herpes simplex virus
- Human papilloma virus
- Hepatitis B virus
- HIV (AIDS)
- Cytomegalovirus
- Molluscum contagiosum virus

PROTOZOAL

- *Trichomonas vaginalis* Trichomonal vaginitis
- *Entamoeba histolytica* *Amebiasis*

in homosexual men

- *Giardia lamblia* Giardiasis

in homosexual men

FUNGI

?Candida albicans Vulvovaginitis, balanitis

ECTOPARASITES

- *Phthirius pubis* Pubic lice infestation
- *Sarcoptes scabiei* Scabies

Bacterial STDs

Chlamydia

- **Bacteria – *Chlamydia trachomatis***
- Unusual very small bacteria because it lives inside cells that it infects

CHLAMYDIA

- Most common STD
- Females outnumber males 6 to 1
- Cervix is site of infection
- Most women are asymptomatic until the pain and fever from PID occur

CHLAMYDIA

- If symptomatic – discharge, painful urination, lower abdominal pain, bleeding, fever and nausea
- Complications include; cervicitis, infertility, chronic pain, salpingitis, ectopic pregnancies, stillbirths, reactive arthritis.

Chlamydia – consequences

- 20–40% of women infected with chlamydia will develop PID *(Pelvic Inflammatory Disease)*
  - 9% *ectopic pregnancy*
  - 20% will become *infertile*
  - 18% chronic *pelvic pain*

Chlamydia

- Urethritis
- Epididymitis
- Proctitis
- Cervicitis
- Endometritis
- Salpingitis
- Perihepatitis

- Otitis media in infants
- Inclusion conjunctivitis
- Sterility

Chlamydia

- **Diagnostic Methods :**

1. Direct fluorescent antibody
2. Enzyme immunoassay
3. Nucleic acid hybridization (DNA probe)
4. Cell culture
5. DNA amplification

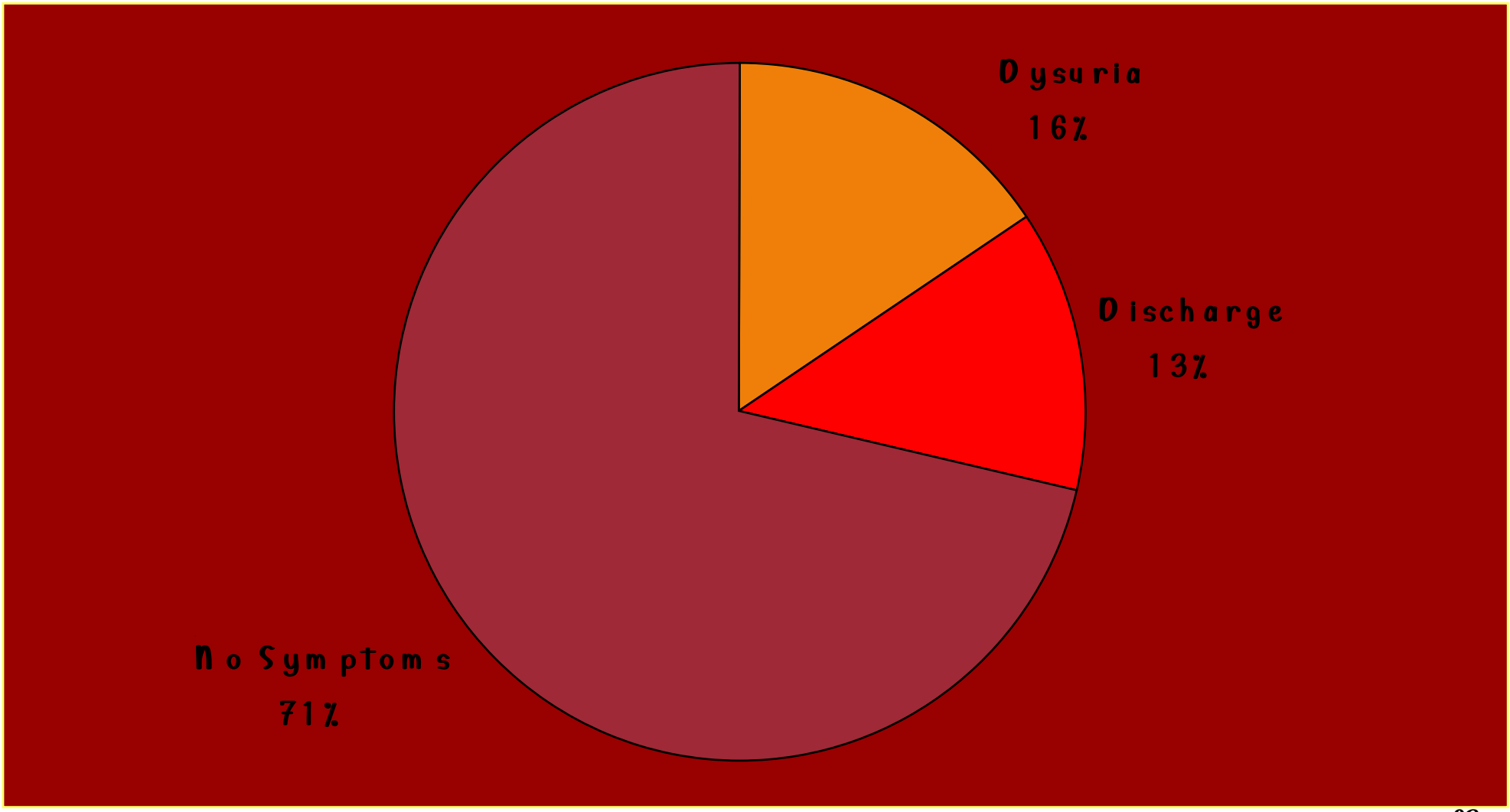
Recommended Treatment

- Doxycycline 100 mg orally 2 times a day for 7 days or
- Azithromycin (Zithromax) 1 g orally

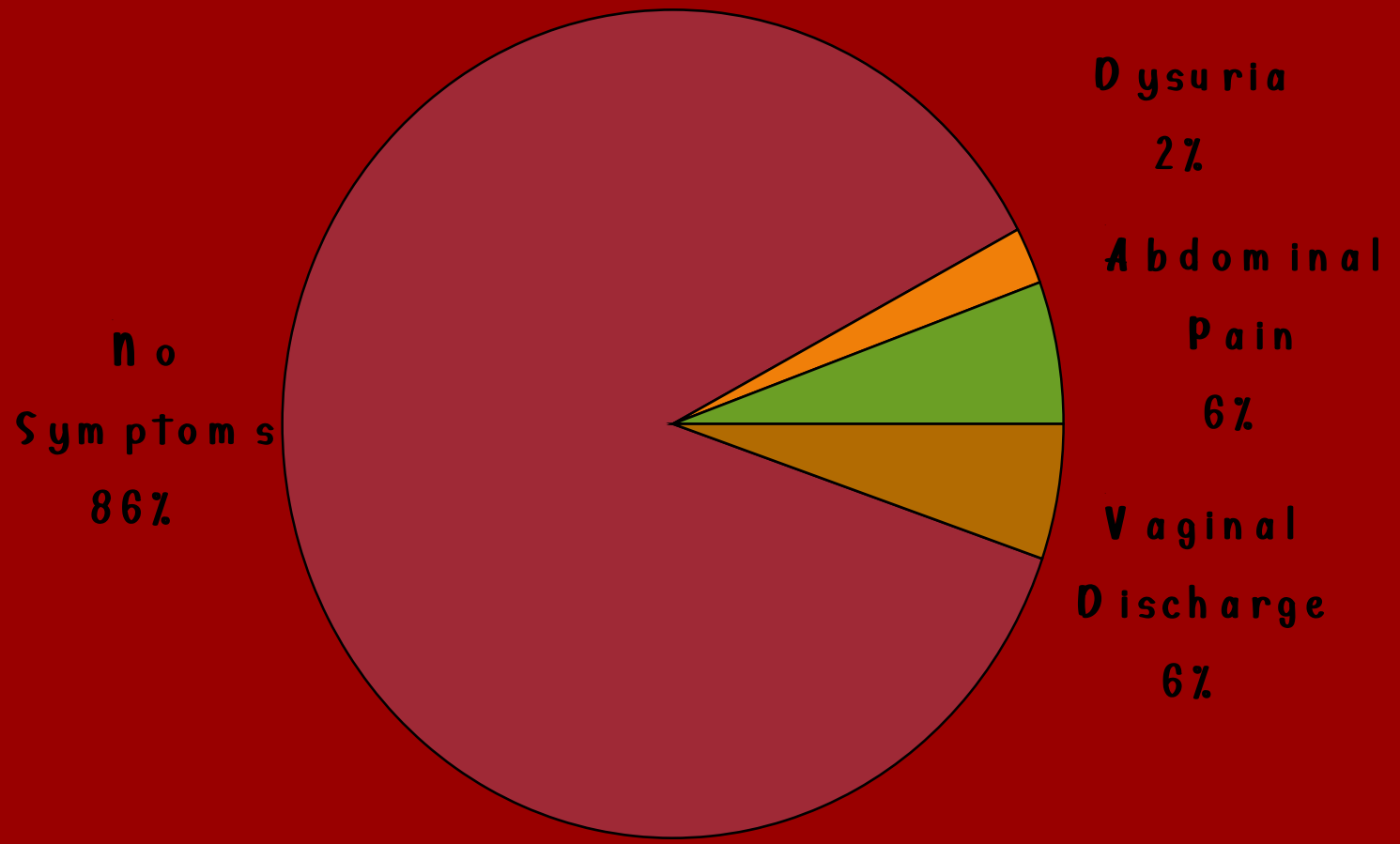
Chlamydia

- Azithromycin and doxycycline are equally effective
- abstain from sexual intercourse for 7 days
- sex partners must be evaluated and treated

Symptoms Among Males Diagnosed With Chlamydia



Symptoms Among Females Diagnosed With Chlamydia



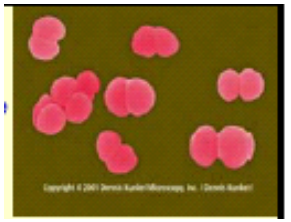
Gonorrhea

- **Females:**

gonococcal cervicitis → slight yellow-green discharge or vulvar irritation

- **Male:**

gonococcal urethritis → odorous cloudy discharge; urinary ~~burning~~; swollen, tender lymph glands in groin



Agent: *Neisseria gonorrhoeae*
Gram negative coccus

GONORRHEA

- Mucus membranes affected include: cervix, anus, throat, eyes
- Bacteria neisseria gonorrhea organism attacks cervix as first site of infection

GONORRHEA

- Symptoms are thick discharge, burning urination, and severe menstrual or abdominal cramps
- 10 to 40 percent women develop PID
  - Untreated gonorrhea can result in arthritis, dermatitis, and tenosynivitis

Gonorrhea

- Urethritis
- Epididymitis
- Proctitis
- Cervicitis
- Endometritis
- Salpingitits
- Perihepatitis
- Pharyngitis

- Conjunctivitis (new born & other)
- Amniotic infection syndrome
- Disseminated gonococcal infection

Gonorrhea

Consequences:

- **FEMALE** : PID with sterility; ectopic pregnancy, severe pelvic pain; infant conjunctivitis.
- **MALE**: prostate abscesses with fever, difficult urination; gonococcal epididymitis with ? sterility

Gonorrhea

- **Both**: transmitted to eyes, anus, throat; may enter the bloodstream & invade joints, heart, liver, CNS
- **Treatment**: dual treatment for chlamydia & gonorrhea; resistant bacteria require special treatment

Gonorrhea

- Treatment should include coverage against chlamydia as well as gonorrhea (e.g. azithromycin or doxycycline to cover chlamydia)
- Cefixime – advantage can be given orally, but bactericidal levels less than ceftriaxone
- Ceftriaxone – extensive clinical trials (99.1% cure)

- Gram stain of endocervical smear
- Culture
- DNA probe

Recommended Treatment

- Ceftriaxone (Rocephin) 125 mg IM or

Cefixime 400 mg orally or

- Ciprofloxacin (Cipro) 500 mg orally or

Ofloxacin (Floxin) 400 mg orally

Plus: (for chlamydia)

- Doxycycline 100 mg 2 times a day for 7 days or azithromycin 1 g orally

Bacterial Infections – Nongonococal Urethritis

- **Female:** few or no symptoms; may itch, urinary burning, mild vaginal discharge of pus

- **Male:** penile discharge ,urinary burning

Bacterial Infections – Nongonococal Urethritis

- **Consequences:** inflamed cervix or PID; spread to prostate or epididymis; rare cases of arthritis
- **Treatment:** doxycycline or erythromycin

SYPHILIS

- Spreads throughout the body within hours of infection
- Caused by bacteria treponema pallidum
- Transmitted primarily through sexual intercourse, but also from infected mother to fetus

SYPHILIS

- Appearance of red or brown painless sore on mouth, fingers, reproductive organs in primary syphilis(CHANCERS)

SYPHILIS

- Appearance of rash on palms, soles, looks like eczema, psoriasis, measles or sunburn and flu like symptoms or mononucleosis in ***secondary syphilis*** (maximum infectivity)

Brown sores characteristics of secondary syphilis

SYPHILIS

- Destructive lesions, organ destruction(Gumma), meningitis, and linkage to HIV in tertiary syphilis phase

Syphilis
Diagnostic Methods

- Clinical appearance
- Dark-field microscopy
- Nontreponemal serologic test
- Rapid plasma reagin
- VDRL
- Treponemal test

Recommended Treatment

- Primary and secondary syphilis and early latent syphilis (<1 year duration):

benzathine penicillin G 2.4 million units IM in a single dose.

- Late latent syphilis or latent syphilis of unknown duration and late syphilis (gumma or cardiovascular syphilis, but not neurosyphilis): Benzathine penicillin G 7.2 million units total, as 3 doses of 2.4 million units IM, at 1-week intervals.

- Neurosyphilis:

Aqueous penicillin G, 18–24 million units a day, as 3–4 million units IV q4h for 10–14 days.

Viral STDs

- Herpes simplex
- Genital Warts (HPV)
- Hepatitis B virus
- HIV (AIDS virus)

Herpes

- Recurrent, incurable viral disease
- HSV-2 -genital herpes
- 80% are asymptomatic or do not recognize the symptoms

- Contagious viral infection that spreads from direct skin to skin contact particularly in the oral and genital areas

- HSV-1 in form of cold sores, fever blisters, primarily around the mouth affects @ 80 % of all adults
- HSV-2 genital herpes infects 1 in 6 adults

HSV 2

- Symptoms vary from one individual to another
- Active phase may include itching, burning, swelling, and flu like symptoms
- Appearance of small painful blisters on genitals rupture, crust over and heal

HSV 2

- Virus travels down nerve to ganglia near spine & remains dormant until another outbreak and virus travels up nerve to skin
- Control efforts for HSV 2 are difficult because 75% are unaware they are infected

- There is no cure for HSV2, the drug acyclovir is prescribed for minimizing the discomfort
- Sexual activity should be avoided when sores are active

HSV

- Antiviral drugs neither eradicate latent virus nor affect the risk, frequency or severity of recurrences

Recommended Treatment

- **First clinical episode:**

Acyclovir 400 mg orally 5 times a day for 7–10 days, or famciclovir 250 mg orally 3 times a day for 7–10 days, or valacyclovir 1 g orally 2 times a day for 7–10 days.

Recommended Treatment

- **Recurrent episodes**:

  acyclovir 400 mg orally 3 times a day for 5 days, or 800 mg orally 2 times a day for 5 days or famciclovir 125 mg orally 2 times a day for 5 days

HUMAN PAPILLOMA VIRUS

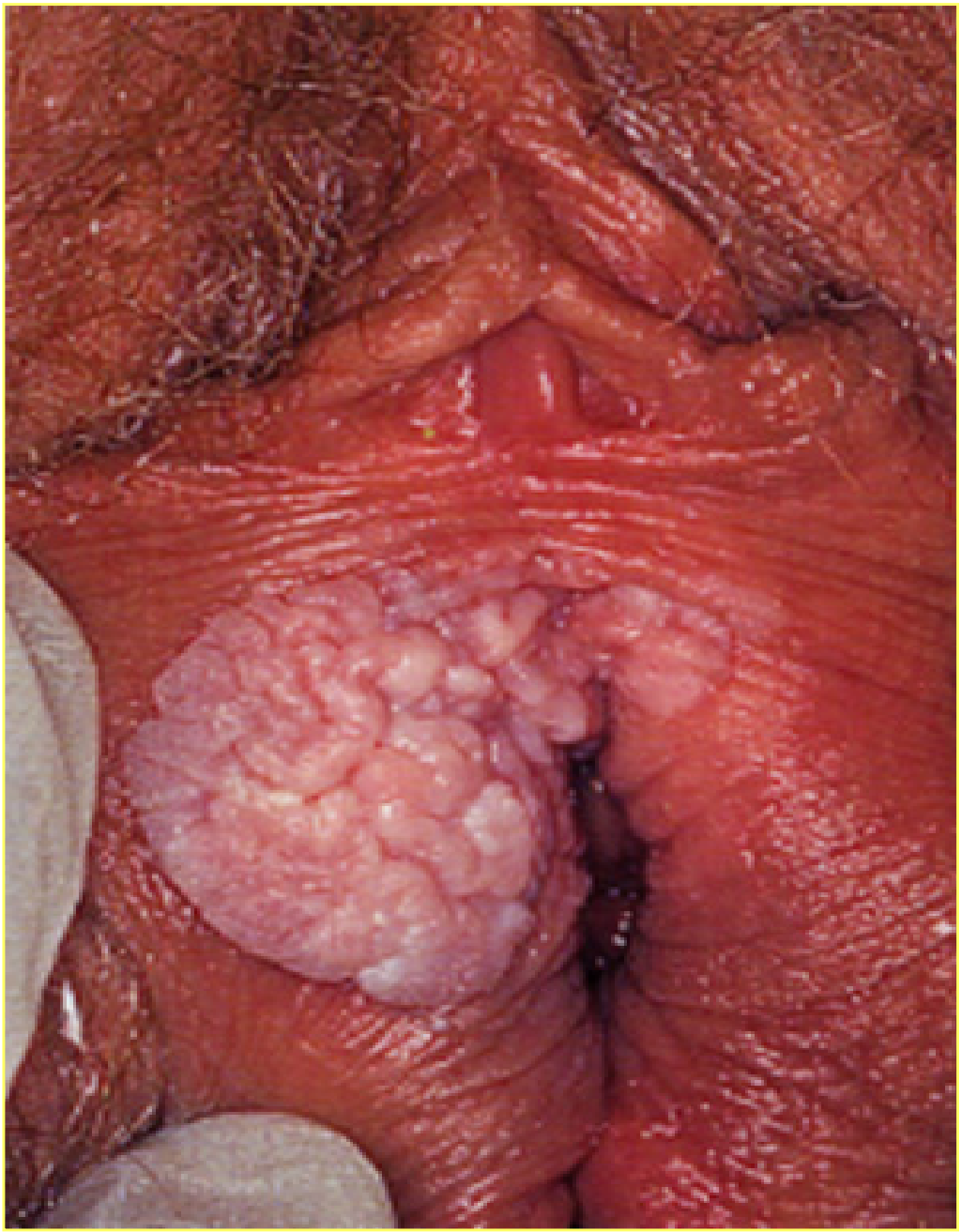
- HPV refers to a group of over 70 different types of viruses 1/3 of which cause genital problems
- Found in @40% of sexually active women in there 20's

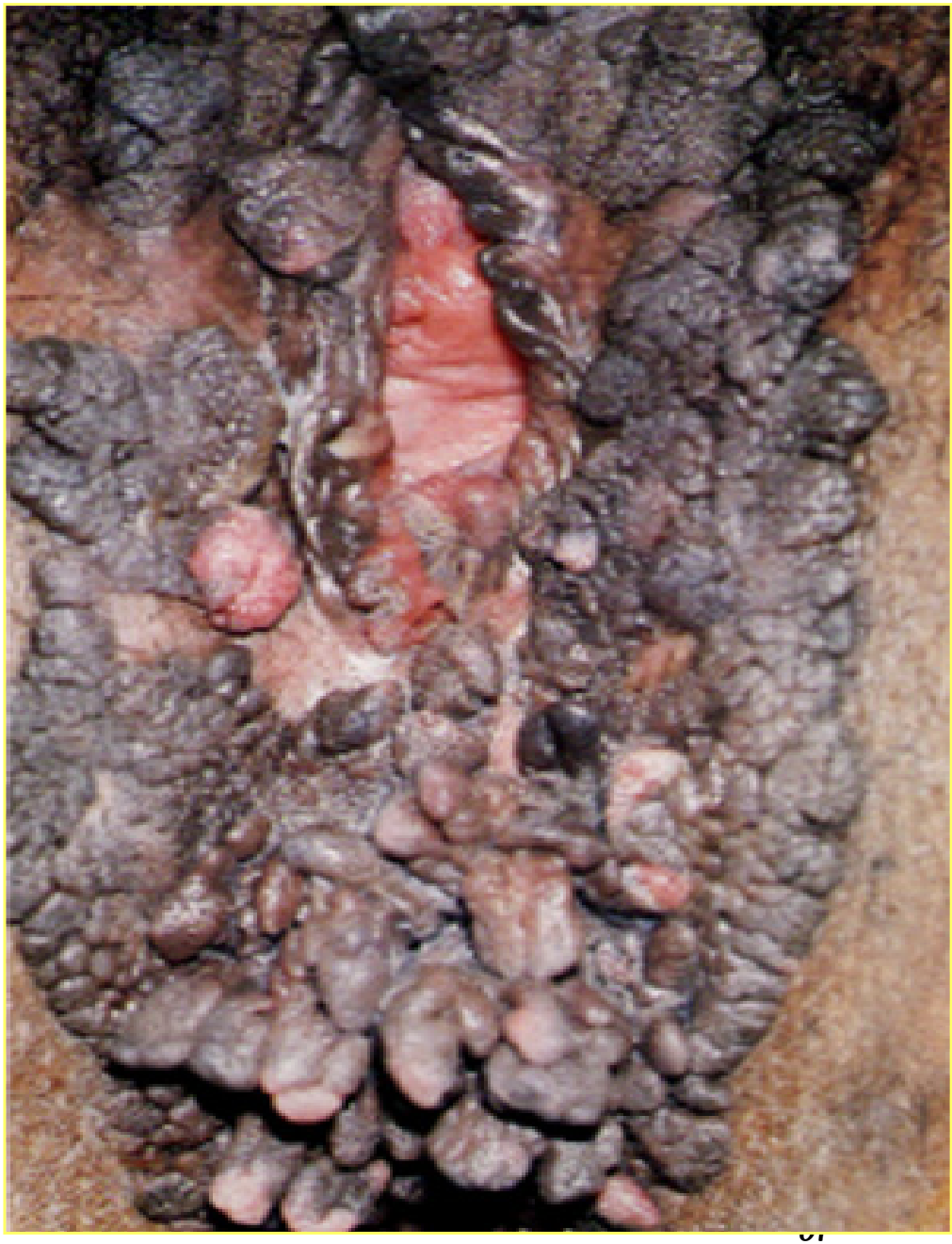
HUMAN PAPILLOMA VIRUS

A small percentage develop genital warts which can lead to a precancerous condition

- Genital warts or condyloma are usually spread by direct contact on vaginal and/or anal areas
- Warts remain undetected when located inside vagina, cervix or anus

Female HPV





Human Papillomavirus (HPV)

- More than 70 different types of HPV
- 30 types can infect the genital tract
- Cervical CACER and HPV
  - HPV-16
  - HPV-18, 31 and 45

Human Papillomavirus (HPV)

- 75% of the reproductive-age population has been infected with ≥ 1 sexually transmitted **HPV**
- Genital warts affect 1% of sexually active adults

HPV

- Warts can be small to large, raised to flat, or single to clustered
- There is no cure for HPV although lesions can be removed
- Methods include: cryotherapy, chemicals, and laser therapy

HPV

- HPV is associated with cervical cancer or cervical dysplasia
- Early detection reduces mortality
- Also linked to cancers of the oral cavity.

(HPV) – Goal of treatment

1. Symptomatic
2. Decrease the bulk of the lesion

- Without treatment, warts may resolve on their own, remain unchanged or increase in size and/or number
- Often treatment is worse than lesion

(HPV) – Treatments

- **Patient applied**
  - Podofilox 0.5% solution or gel
- **Provider applies**
  - Cryotherapy
  - Podophyllin resin 10–25%
  - Surgery, intralesional interferon, laser

- **External warts:**

Patient may apply **podofilox 0.5%** solution or gel 2 times a day for 3 days, followed by 4 days of no therapy, for a total of up to 4 cycles, or **imiquimod 5% cream** at bedtime 3 times a week for up to 16 weeks. Treatment area should be washed with mild soap and water 6- 10 hours after application

or **podophyllin resin** 10-25% in compound tincture of benzoin in small amounts to each wart, repeat weekly if necessary;

; or ***surgical removal***

- **Vaginal warts:**

cryotherapy with liquid nitrogen, or **TCA** 80-90%, or podophyllin 10-25%

HEPATITIS B VIRUS

- Transmission is similar to HIV
- Through bloodborne pathogens, unprotected SI, Tattoos, ear piercings, injections and acupuncture

HEPATITIS B VIRUS

- HBV is more easily transmitted than HIV
- Nearly 95 % of persons with HBV recover
- Vaccination for HBV recommended especially for health personnel

HBV

Persons at highest risk for contacting HBV include:

- Hemodialysis patients
- Injectable drug users
- Health care workers
- Infants born to HBV infected mothers
- Gay men
- Sexually active heterosexuals

HBV

- Hepatitis B virus is present in all body fluids
- Severe HBV includes jaundice and may result in prolonged illness or death

Human Immune Deficiency Virus (HIV)

HIV – retrovirus that targets & destroys helper T-4 cells that assist the immune response to disease

ACQUIRED IMMUNE DEFICIENCY SYNDROME

- AIDS is the third leading cause of death among all women between 15-44
- Worldwide, women constitute @40% of all HIV positive cases
- The majority of women who contract AIDS are heterosexual, injecting drug users, hemophiliacs

DEFINING HIV/AIDS

- Human immunodeficiency virus **HIV** is the organism that causes **AIDS**
- Majority of **AIDS** victims will die
- **AIDS** includes pulmonary **TB**, recurrent pneumonia, and invasive cervical cancer

CONTRACTING AIDS

- HIV is carried from one person to another through blood, semen and vaginal secretions
- <u>Transmitted through</u>:

1. sexual contact
2. Sharing injecting drug needles
3. From infected mother to infant during childbirth

- HIV is not transmitted through causal contact, tears or saliva

SYMPTOMS OF HIV

- Symptoms of AIDS may be similar to other diseases
- Difference is that they take longer to disappear or may recur

HIV(AIDS)

- **Common early symptoms include:**

1. Night sweats
2. Rapid weight loss without diet or exercise
3. Diarrhea lasting longer than several weeks
4. Thick white spots coating the mouth
5. A dry cough and shortness of breath
6. Purple spots on skin, in mouth, and rectum

DIAGNOSIS OF HIV

- Two tests are used for diagnosis:

1. Enzyme-Linked ImmunoSorbent Assay (E L I S A test): a general screening with a high sensitivity
2. Western blot test, a less sensitive, more expensive but more specific test for the HIV antibody

DIAGNOSIS OF HIV

- A women must wait @ a month from the time of suspected exposure before getting tested
- It takes @ 45 days between exposure and body's building enough antibodies for detection
- Experts recommend two sets of tests @ 6 months apart

TESTING PROCEDURES

- If a person tests positive for the HIV antibody with the ELISA test, a second ELISA test is conducted on the same person
- If the second test is positive, the Western blot test is conducted
- If the Western blot test is positive, the person is said to be HIV-positive

Symptoms of HIV & AIDS

- Developing HIV antibodies
- Patterns of progression
  - rapidly progressive (3 years)
  - usual progression (8-11 years)
  - long-term nonprogression (> 10 yrs)

Symptoms of Full-Blown AIDS

- Diagnosis of Opportunistic Infections
  1. Pneumocystis carinii pneumonia
  2. Cytomegalovirus (CMV)
  3. Encephalitis
  4. Meningitis
  5. Tuberculosis & Salmonella
  6. Toxoplasmosis
  7. Lymphomas, cervical cancer, Kaposi's sarcoma

  * Death within 1-2 years

Treatment

- **NO CURE**
- Combination drug therapy shows best results for slowing progress
- **Prevention is the best solution**

VAGINITIS

- One in ten women who visit wheir health-care provider complain about vaginal discharge
- Over 90% of vaginitis is classified as:

1. Trichomoniasis - caused by 1 celled protozoa
2. Bacterial vaginosis
3. Candidiasis - yeast , fungus infection, monila usually not sexually transmitted

TRICHOMONIASIS

- One celled parasite
- *Found in both men and women*
- Remains dormant in asymptomatic women
- Causes vaginal irritation, itching, and diffuse malodorous discharge in symptomatic women
- Women may see red spots on the vaginal walls
- **Most men are a symptomatic**
- **Both partners** must be treated with antibiotics

CANDIDIASIS

- ?Not a sexually transmitted disease
- Symptoms include itching, discharge, burning, or irritation
- Pregnant women commonly experience yeast infections
- Factors most often associated with repeat infections: diabetes, obesity, suppressed immunity, antibiotics, corticosteroids, or birth control pills

BACTERIAL VAGINOSIS

- Discharge is white and ordorus
- Associated with:

1. Cervicitis 2. PID
3. Postpartum endometritis
4. Premature labor
5. Recurring urinary tract infections

- Treatment: oral, cream or gel application of Flagyl
- male treated if infection recurs

Ectoparasitic Infections

- **Pubic Lice**: transmitted through sexual contact or infected linen/clothing
  - **SX**: little to severe itchiness
  - **Treatment**: prescribed *kwell*; pyrinate.
  - launder linens & clothing

Ectoparasitic Infections

- **Scabies**: transmitted though close physical or sexual contact or from infected linen or clothing
- **SX**: small, red rash around primary lesion; intense itching, esp. at night
  - **Treatment**: topical scabicide launder or dry clean linens & clothing

Guidelines for ↓ing Risk

- Always use condoms & spermicides
- Avoid multiple sexual partners

PREVENTION STRAGETIES

- Sexual abstinence is the only 100% effective method to prevent sexually transmitted diseases
- Male condoms are one of the most effective methods for preventing STD's

STIs and Family Planning: What Can Be Done

- Most STIs (e.g., gonorrhea, syphilis) can be treated.
- All STIs can be prevented.
- If not prevented, early diagnosis and treatment can decrease the possibility of serious complications such as infertility in both women and men.

A Final Word on STI control

Contraceptive pills and injections and surgery for preventing pregnancy

DO NOT PREVENT TRANSMISSION OF STIs !

One of many reasons why STI control is difficult is that :*many persons have these infections or are carrying the micro-organisms without knowing it*

Summary

- STDs are common
- STD infections can be present without symptoms
- STDs can be costly in terms of personal health and health care spending
- STDs need to be diagnosed and treated early

PELVIC INFLMATORY DISEASE (P.I.D)

Def: This is a term used to describe a clinical syndrome which is caused by ascending spread of micro-organisms from the vagina and the cervix to the endometrium, fallopian tubes and the continuous structures e.g.. the ovaries and the entire peritoneal cavities.

Incidence

- Common in women between 12-40 years.
- Also common in developing countries due to poverty & increased rates of abortions & increased attacks of S. T.D's (venereal diseases).

Causes

- Streptococci
- Staphylococci
- Gonococci (Gonorrhea)
- Triponema palladium (causes syphilis)
- Chlamydia Trichomatis–40–50% cases
- E. coli
- Clostridium welchi
- Tubercle bacilli

Route of entry

- Ascending infection through the vagina-mostly by S.T. D's, abortions, delivery and menstruation.
- Infection can gain entry through infection from other organs e.g. peritonitis, appendicitis and recto-abscess.
- Infection can also gain entry through the blood stream e.g. T.B can cause chromic salphingitis.

Signs and symptoms

Signs

- There is bi-manual tenderness of the abdomen
- Bi-manual mass of the lower abdomen
- Cervical tenderness on excitation
- Purulent, offensive, blood stained discharge
- Pyrexia of 38oC and above
- On V.E, it will show tenderness in both the lateral vaginal fornix

Symptoms

- Abdominal pain
- The abdomen is also tender mostly when you move the uterus
- Dyspareunia (painful coitus)
- Increased vaginal discharge
- If there is peritonitis, the abdomen is rigid and distended over the lower abdomen
- Irregular vaginal bleeding
- Urinary symptoms e.g.. frequency in micturation and dysuria
- Nausea, vomiting and anorexia
- low back-ache
- dehydration
- General malaise, tachycardia and sweating

Diagnosis/investigations

- Patient give history of recent delivery or abortion or gonoccocal infection
- HVS for c/s (high vaginal swab)
- Blood for culture, white cell blood count & blood for Hb
- Laparascopy-visualize the tubes and allow swabs to be taken
- laparatomy
- Urine for c/s
- Pelvic u/s

Predisposing factors of PID

- I.U.C.D with multiple partners
- Previous attack of P.I.D
- History of S.T.D.s

Management

- Investigate to know the actual cause. Treat the cause
- if severe admit patient in the ward
- psychological support as this is often caused by S.T.D's

Medical Management

- Give strong analgesics for pain e.g. pethidine 100mg P. R.N.
- Give broad spectrum antibiotic e.g. x-pen 4 mu stat then 2mu 6 hourly x5/7 IV or IM
- Gentamycin 80mgs IV or IM 8 hourly x 5/7, IV Flagyl 500mg tds x3-5/7
- Then continue with oral antibiotics either Amoxil, Doxycline or Augumentine.
- If P.I.D is caused by T.B give T.B drugs

Nursing care

- Ensure patient is on complete bed rest to hasten healing process
- provide adequate fluids either orally or iv compact dehydration
- Administer appropriate antibiotic to comport infection
- Give analgesics to relief pain and ensure comfort
- Nurse patient in a sitting up position to ensure proper draining of discharge
- Observe vital sigh 4 hourly, observe general condition and vaginal discharge for colour amount, smell ad consistence.
- Do vulval toilet 4 hourly in acute stage then bed to ensure perineal hygiene

- Encourage passive exercises in bed. As condition improves encourage active exercises to prevent complication e.g. D.V.T and hypostatic pneumonia.
- If patient had an I.U.C.D it should be removed after treatment with antibiotics
- If patient has a pelvic abscess, prepare her for theatre for drainage of the abscess.
- Take care of the patient post-operatively.

Health education

- Teach patient on how to identify recurrence, (signs and Symptoms)
- Completion of medication at home(compliance)
- Good perineal hygiene and use of clean sanitary pads
- They should trace and treat the partners
- They should avoid coitus until infection is cleared
- Adequate rest and exercises-this hastens healing
- should have good nutrition
- Should be followed in the gynae clinic weekly until the infection clears.

Complications

- Pelvic abscess (commonest) it can be treated with antibiotics if persistence it may require surgical drainage. Sometimes the abscess may rupture leading to
- Peritonitis Rx with antibiotics
- Infertility-due to blocked tubes after infection has cleared
- Septicemia – leads to death

- end