Genital Tract Infections

Genital tract introduction:
- The normal vaginal flora is predominately lactobacilli (aerobic organisms).
- The normal PH is range from 3.8 to 4.5 due to the H+ peroxide producing lactobacilli.
- The vagina is lined by nonkeratinized stratified squamous epithelium, which is powerfully influenced by estrogen and progesterone.
- The normal vagina epithelium is strongly estrogenized and rich in glycogen, which supports growth of lactic acid–producing lactobacilli. This results in a low pH (<4.7), which provide some protection in the lower reproductive tract from STIs, including human immunodeficiency virus (HIV).
- Infections of the vulva, vagina, and cervix are called (lower reproductive tract) and the uterine corpus, fallopian tubes, and ovaries are called (upper reproductive tract).

Vaginal discharge:

Types of Vaginal discharges:
- Physiological (• Mid-cycle • Watery • No odor • No irritation )
- Pathological multiple causes: • Mainly due to infection of lower genital tract (vulva, vagina, cervix )

Causes of Pathological Vaginal discharge:
- Infection: • Vulvitis • Vaginitis • Cervicitis
- Tumor: (• Mostly cervical tumors or polyps • Usually mixed with blood )
- Trauma
- Foreign body: ( • Tampons, which is inserted in the vagina • Condoms • Spermacedic creams)
- Atrophic vaginitis: (• Due to low estrogen • usually in menopause Treated by estrogen (primarin )

Lower genital tracts infection:
- Bacterial : H.Influenza, gardnerella vaginilis, mycoplasma hominis ( B.V )
- Fungal : Candida
- Parasite : Trichomonas vaginitis
- Viral : Herpes, HPV

* Bacterial vaginosis [BV]*

Previously known as Hemophilu vaginalis or Corynebacterium vaginale, Gardnerella vaginalis.
**Causes:** Caused by over-growth of anaerobic bacteria or replacement of normal lactobacillus with mixed e.g.

- Gardnerella vaginallis
- mycoplasma hominis
- H.Influenza
- Bacteroides species due to alteration of the normal flora & ↑ pH of the vagina.

**Risk factors:** include a new sexual partner, smoking, intrauterine device (IUD) use, and frequent douching.

**Symptoms:** Asymptomati, Recurrences are common

**Discharge:** profuse Homogenous grey white, malodor, nonadherent discharge with **no pruritus**.

**Diagnosis:** requires at least three of the clinical Features in Schedule.

**Treatment:**
- Flagyl (metronidazole): 500 mg orally twice for 7 days
- Or Clindamycin: 300 mg BID for 7 days (more safe for pregnancy so it use in first trimester rather than flagyl)
- Treatment of the partner is generally not recommended.

**Candidiasis**

- 75% of women will have at least once during their life.
- 90% of yeast infections are secondary to Candida Albican.

**Predisposing factors:** (high glycogen, low PH, low immunity)
- Diabetes (↓ immunity).
- Antibiotics (disrupting the normal flora by ↓ lactobacilli).
- Pregnancy (↓ cell-mediated immunity).
- Pt. on OCP (mainly combined type)
- Immunocompromised Pt (HIV/ AIDS, transplantation, steroid use).

**Symptoms and Discharge:** Thick, white Cheesy discharge with pruritus, vulvar burning, vaginal soreness, dyspareunia and dysuria

**Signs:** Itching is hallmark symptoms, red, swollen, tender vulva†

**Diagnosis:**
- Clinical symptoms + identification of budding yeast on a wet mount
• in wet preparation (KOH): See the hyphae of the candida (thread like structure)

• in swab : Growth in acidic media
  - (See table)

### Treatment:

- **Intravaginal** (not use in virgin)
  - Canestine: 100mg BID for 7 days
  - OR Nystatin: 100,000 U vag. Tab x 7 day
  - OR Miconazole: 3 2% cream x 7 days

- **Oral** (use in virgin)
  - Fluconazole (Diflucan) 1 tab (150 m PO once a day)

If it was recurrent:
- The male partner must be treated
- Prolonged course of Antifungl.

- **Trichomonas Vaginalis**
  - It is an anaerobic parasite. 60% of patients also have BV.
  - Patients should be tested for other STDs (HIV, Syphilis).

**Caused by**: Trichomonas vaginalis, which favors vaginal pH > 4.5

**Symptoms and Discharge**: Profuse, malodorous, often frothy, yellow or green discharge with vulvar irritation. May have: urinary symptoms, dyspareunia

**Characteristic by**: Strawberry cervix = multiple red spot due to subepithelial hemorrhage

**Diagnosis**: (see table)

Wet preparation (NS):

See motile Trichomonas vaginalis = oval, larger than WBC, have flagella

### Treatment:

- Metronidazole (flagyl), 500mg BID for 7 d OR Metronidazole 2g (one dose)
- Tinidazole, 2 g orally in a single dose (for resistant cases)
- Male partner must be treated b/c it is a STD.
Genital ulcer disease (Herpes infection)

Mostly caused by:
- HSV (Herpes simplex virus) or Syphilis, then chancroid,
- Other causes: abrasions, drug eruptions, cancer and behcet’s disease.
- It is a Sexually transmitted disease.

Symptoms:
- HSV:
  - Severe burning sensation & multiple viscles
  - Painful ulcer in vulva that may coalesce
  - Speculum Examination: Multiple vesicles (very painful)

Diagnosis:
1. Clinical pic
2. Swab: Culture the organism from the vesicles (gold standard)
Pap smear is indicated to rule out CIN b/c herpes infection is a predisposing for CIN.
3. Polymerase chain reaction PCR

Treatment: Acyclovir (locally) and Keep the area dry and clean.

Genital Warts

- Caused by: HPV infection (usually 6 & 11), these are non-oncogenic types.
  Usually at areas affected by coitus (posterior fourchette).
- HPV is the most common sexually transmitted infection.
- There are over 100 different types of the HPV virus more than 20 types infect genital
- In women, genital warts can appear on the urethra, vagina, anus or thighs type (6, 11)
- High risk types of the HPV virus are link cervical cancer specially (type 16,18)
- Recurrences after treatment are secondary to reactivation of subclinical infection.
- Characteristic by soft pedunculated lesion, burning on vulva, contact bleeding.
- Treatment: 1. podophyllin resin 25 2. CO2 laser excision 3. cryotherapy (liquid N2)
- Pap smear is two type: Ectocervix and Endocervix, Use to diagnose cervical neoplasia