

Sexually Transmitted Infections

STI versus STD

- **STI** – Infections acquired through sexual intercourse (may be symptomatic or asymptomatic)
- **STD** – Symptomatic disease acquired through sexual intercourse
- STI is most commonly used because it applies to both symptomatic and asymptomatic infections

Background

- STIs are among the most common causes of illness in the world and have far reaching health, social and economic consequences.
- STIs have public health importance because of their magnitude, potential complications and their interaction with HIV/AIDS.

Background cont'd

Transmission of STIs

- Mode of transmission of STI is through
 - unprotected sexual intercourse (**Main mode**).
 - mother-to-child,
 - blood transfusions, or
 - other contact with blood or blood products

Background cont'd

- STIs are caused by more than 30 different pathogens including bacteria, viruses, protozoa, fungus and ecto-parasites.
- All STIs are preventable.
- Most of the STIs are curable (but resistance to many of the older antibiotics is a current challenge), while other STIs are incurable.

Common STIs

Curable STIs

- Gonorrhea,
- Syphilis,
- Chancroid,
- Lymphogranuloma venerum,
- Chlamydial infections and
- trichomoniasis.

Non-curable STIs

- HIV,
- human papilloma virus,
- hepatitis B virus, and
- herpes simplex virus

Association between STIs & HIV/AIDS

- **STIs and HIV infection share similar epidemiologic determinants**
 - Result from risky behavior & similar mode of transmission and
 - affect similar group of society (youth, mobile population and individuals who frequently change partners)

- **STIs facilitate HIV transmission and acquisition**
 - **Ulcer forming STIs** (Chancroid, chlamydia, gonorrhea, syphilis, and trichomoniasis) may increase the risk of HIV transmission by **five fold**
 - ulcers disrupt the integrity of the skin barrier
 - **Inflammation** causing STIs (gonorrhoea) weaken barrier to HIV
 - Infected lymphocytes among HIV infected individuals are attracted to the lesions and hence increase likelihood of infection to the partner
 - STIs Increase **viral shedding**

Association between STIs & HIV/AIDS cont'd

- **HIV affects the clinical presentation and management of STIs**
 - HIV alters susceptibility of STI pathogens to antibiotics (be more resistant to treatment)
 - Increased susceptibility to STIs among immune suppressed individuals
- **Clinical features of STIs are influenced by HIV co-infection (syphilis)**

Association between STIs & HIV/AIDS cont'd

- **The treatment of conventional STIs is also affected when infection with HIV coexist.**
 - Risk of treatment failure following single injection of **benzathine penicillin** is increased among patient with primary syphilis.
 - Topical **anti-fungals** are less effective and hence oral antifungal like ketoconazole may be indicated for patients with candidiasis.
 - Resistance to **acyclovir** may subsequently develop for Severe genital herpes.

Interventions to Reduce Transmission

- Decrease duration of infectivity
 - Early diagnosis and treatment of index cases and partners
- Decrease efficiency of transmission
 - Promote safer sexual behavior
- Promotion of health care-seeking behavior,
- Targeting vulnerable groups
 - Decrease susceptible persons' exposure rate to infected individuals

Approaches for STI Case Management

Approaches for STI Case Management

- **Etiologic approach:**
 - laboratory based identification and treatment of a specific etiology
- **Clinical approach:**
 - The use of clinical experience to identify symptoms which are typical for specific STI, then giving treatment to suspected pathogen (s).

Approaches STI Case Management

- **Syndromic approach:**
 - Identification of clinical syndrome and giving treatment targeting all the locally known pathogens which can cause the syndrome.
- Each approaches has advantages and disadvantages

Syndromic Approach to STI Management

- Identification of clinical syndrome (a group of symptoms)
- Giving treatment targeting all the locally known pathogens which can cause the syndrome
- Highly effective for the management of majority of the STI.

Syndromic Approach For STI Management cont'd

- It is “**comprehensive approach**” because in addition to the provision of treatment it includes:
 - education of the patient,
 - condom supply,
 - counseling, notification and management of sexual partners and
 - HIV counseling & testing (PITC).
 - Abstinence from sex till all symptoms resolve

Syndromic Approach to STI Management cont'd

- Advantages
 - Simple, rapid and inexpensive
 - Complete care offered at first visit
 - Patients are treated for possible mixed infections
 - Accessible to a broad range of health workers
 - Avoids unnecessary referrals to hospitals
- Disadvantages
 - Over-treatment
 - Asymptomatic infections are missed

Commonly Encountered STI syndromes

1. Urethral discharge syndrome
2. Persistent/Recurrent Urethral Discharge
3. Vaginal discharge syndrome
4. Genital ulcer in men and women
5. Lower abdominal pain in women
6. Scrotal swelling
7. Inguinal bubo

1. Urethral Discharge Syndrome

- Possible etiologies:
 - Gonococcal infection (81%)
 - Chlamydia Trachomatis (36.8%)
- Others:
 - *Mycoplasma genitalium*,
 - *Trichomonas vaginalis*, and
 - *Ureaplasma urealyticum*.

Sign and symptoms

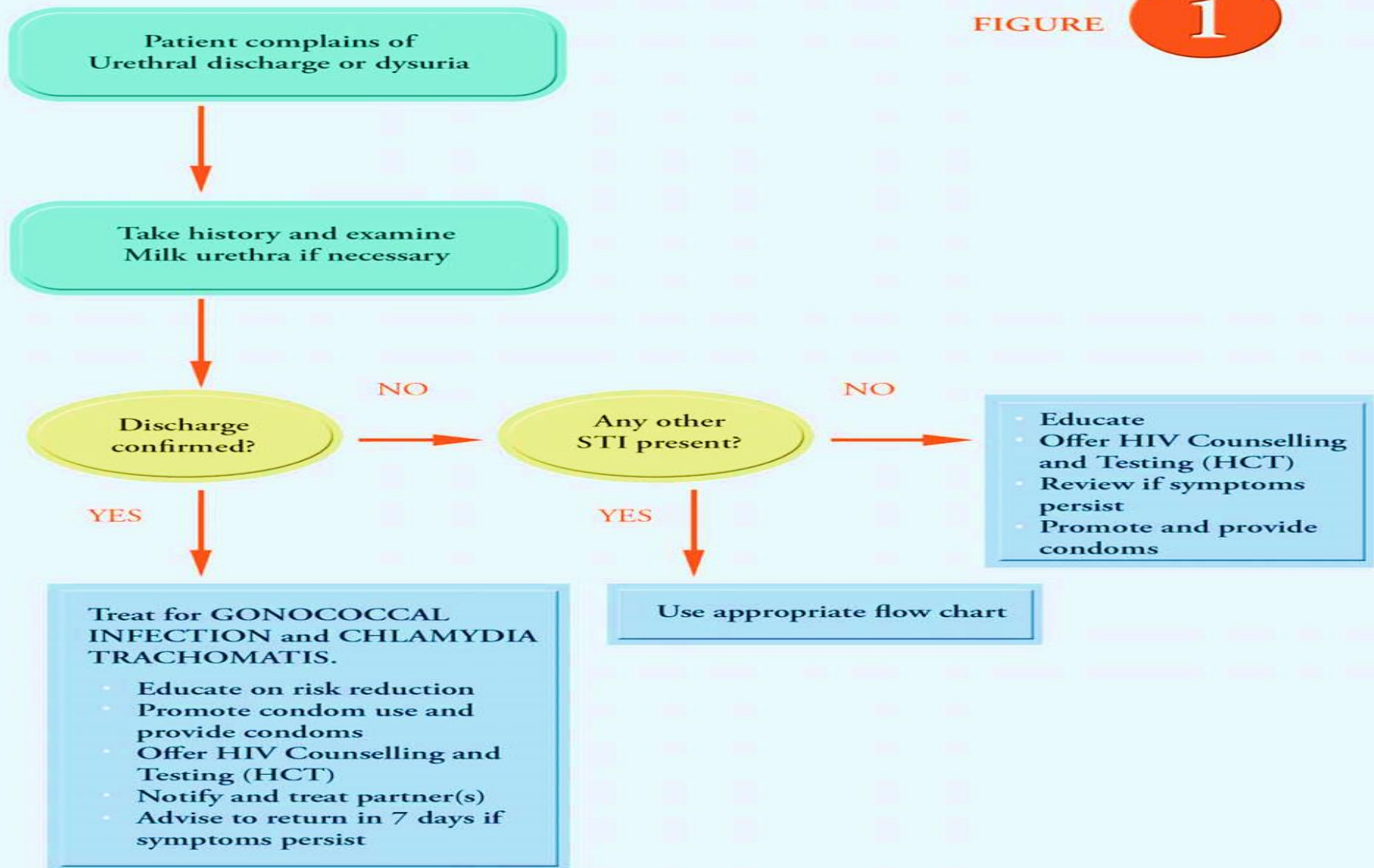
- Urethral discharge (purulent or mucoid, white)
- Dysuria (burning sensation during micturition)
- Urgency and frequent urination

Urethral discharge



FIGURE

1



Recommended Treatment for Urethral Discharge and Burning on Urination

Ceftriaxone 250mg IM stat/Spectinomycin 2 gm IM stat
Plus

Azithromycin 1gm po stat/Doxycycline 100 mg po bid for 7 days/Tetracycline 500 mg po qid for 7 days/Erythromycin 500 mg po qid for 7 days in cases of contraindications for Tetracycline (children and pregnancy)

Note: The preferred regimen is Ceftriaxone 250mg IM stat plus
Azithromycin 1gm po stat

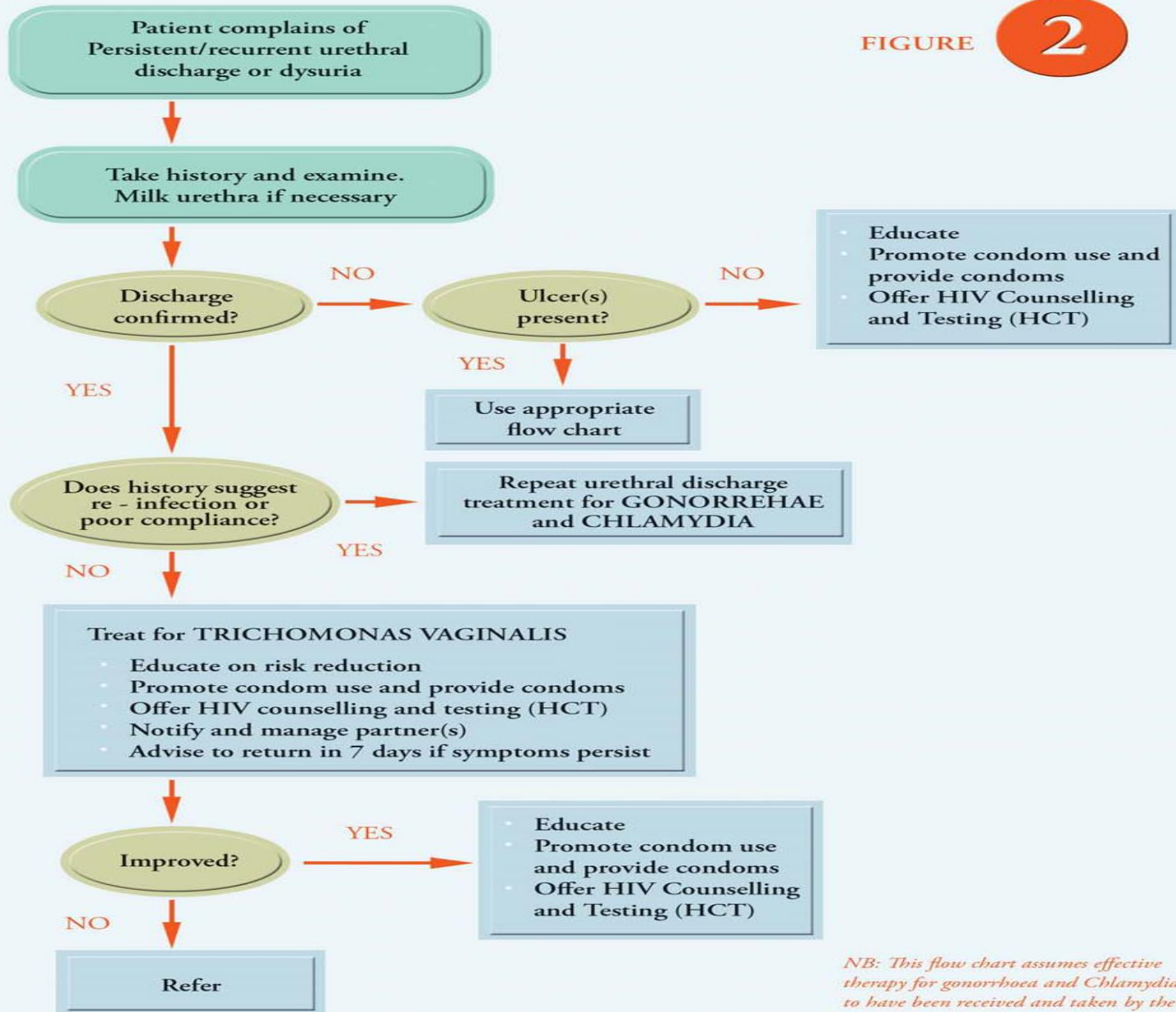
2. Persistent/Recurrent Urethral Discharge

- Complain of persistent or recurrent burning sensation on urination, with or without discharge, due to various reasons:
 - Inadequate treatment or poor compliance
 - Re-infection (partner/s not managed)
 - T. vaginalis is also known to cause urethritis in men
 - Infection by drug-resistant organisms

- **Metronidazole** 2 gm p.o. stat or **Tinidazole** 1 gm po once for 3 days (Avoid Alcohol) **PLUS**
- Azithromycin 1 g orally in a single dose (only if not used during the initial episode to address doxycycline resistant M.genitalium)

FIGURE

2



NB: This flow chart assumes effective therapy for gonorrhoea and Chlamydia to have been received and taken by the patient prior to this consultation.

Referral:

- If men require treatment with a new antibiotic regimen and a sexually transmitted agent is the suspected cause, all partners in the past 3 months before should be referred.

3. Genital Ulcer Diseases (GUD)

- Clinical manifestation and patterns of GUD may vary with presence of HIV infection.
 - The causes of genital ulcer are Treponema Pallidum (**syphilis**), HSV1&2 infection(**Genital herpes**), Haemophilus ducreyi (**chancroid**), Klebsiella granulomatis (**donovanosis**) and Chlamydia
- **Syphilis**
 - Clinically has three stages (primary, secondary, tertiary)
 - The ulcer starts during the primary stage of the disease as papules & rapidly ulcerative
 - The ulcer is typically painless, clean base and raised boarder.

Genital Ulcer Disease



GUD...

■ Genital Herpes

- HSV is the most common causes of genital ulcer world wide
- Produces life long infection after the primary infection (latency)
- Lesions are painful, erythemathous macules which progressively form vesicles, pustules, ulcer and crusts

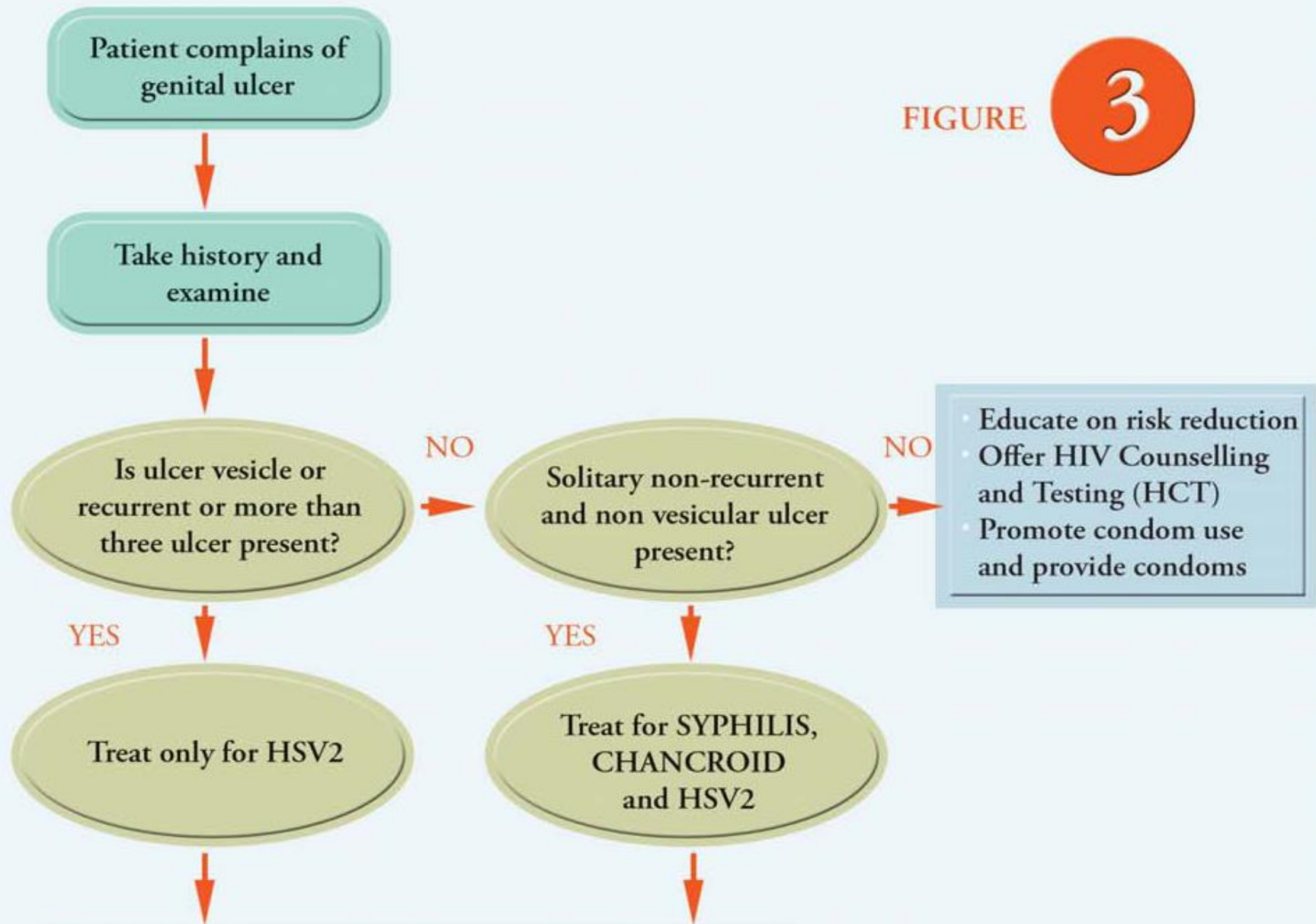
■ Chancroid

- is also the common cause of genital ulcer
- The lesion started as painful papules and pustules which ulcerate with dirty base and soft edge
- Inguinal fluctuant adenopathy (buboes) may occur following ulcer.

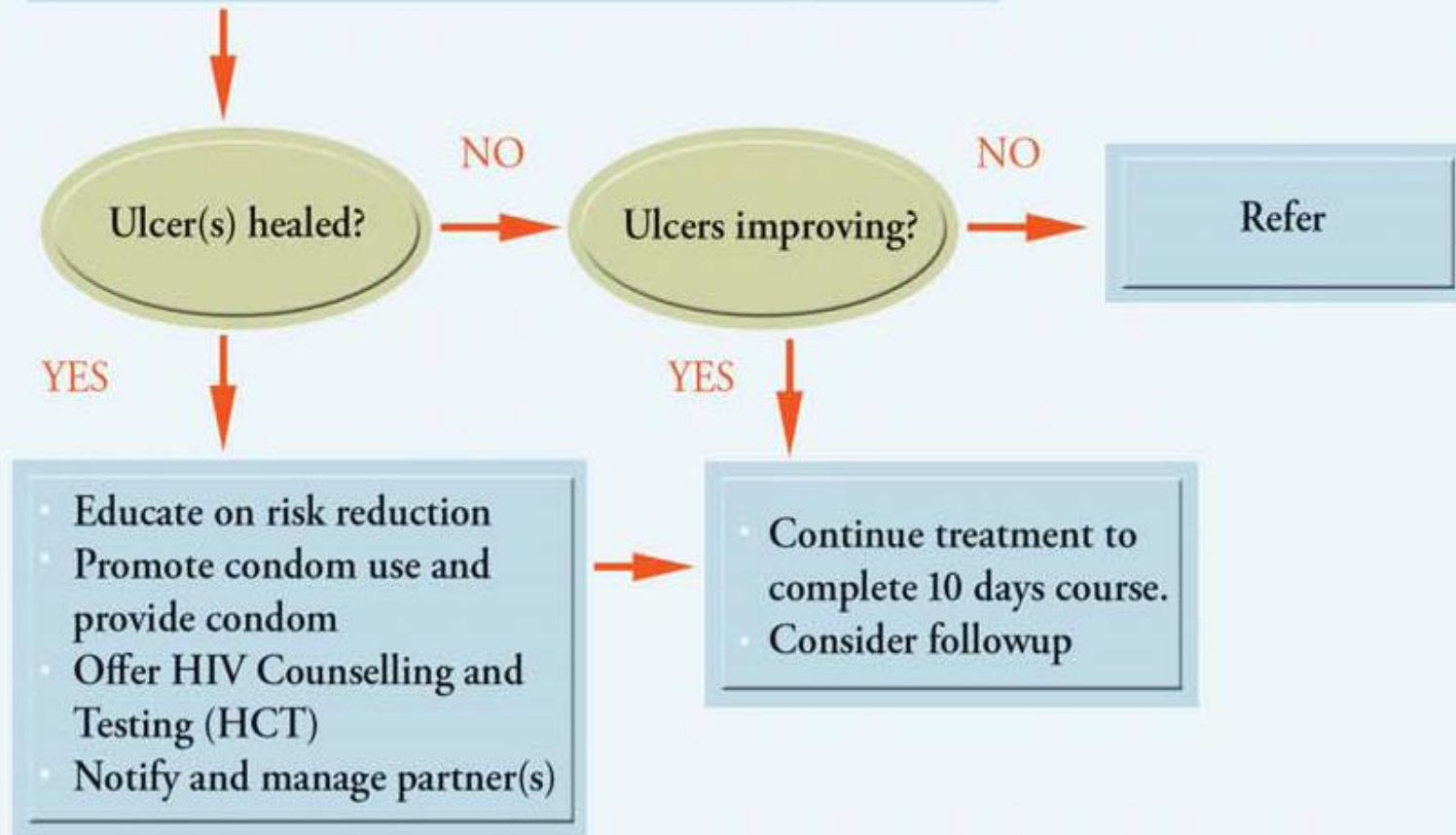
GENITAL ULCERS SYNDROME

FIGURE

3



- Educate on risk reduction
- Promote condom use and provide condoms
- Offer HIV Counselling and Testing (HCT)
- Ask the patient to return in 7 days
- Notify and manage partner(s)



Recommended treatment of genital ulcer

1. Treatment for Non- Vesicular Genital Ulcer

- *Benzathine penicillin 2.4 million units IM stat /Doxycycline(in penicillin allergy) 100mg bid for 14 days plus*
- *Ciprofloxacin 500mg bid orally for 3 days /Erythromycin 500mg tab qid for 7 days plus*
- *Acyclovir 400mg tid orally for 10 days (or 200mg five times per day of 10 day)*

2. Treatment for Vesicular, multiple or recurrent genital ulcer

- *Acyclovir 200 mg five times/day for 10 days Or Acyclovir 400 mg tid for 7 days*

3. Treatment for recurrent infection: Acyclovir 400 mg tid for 7 days

4. Vaginal Discharge

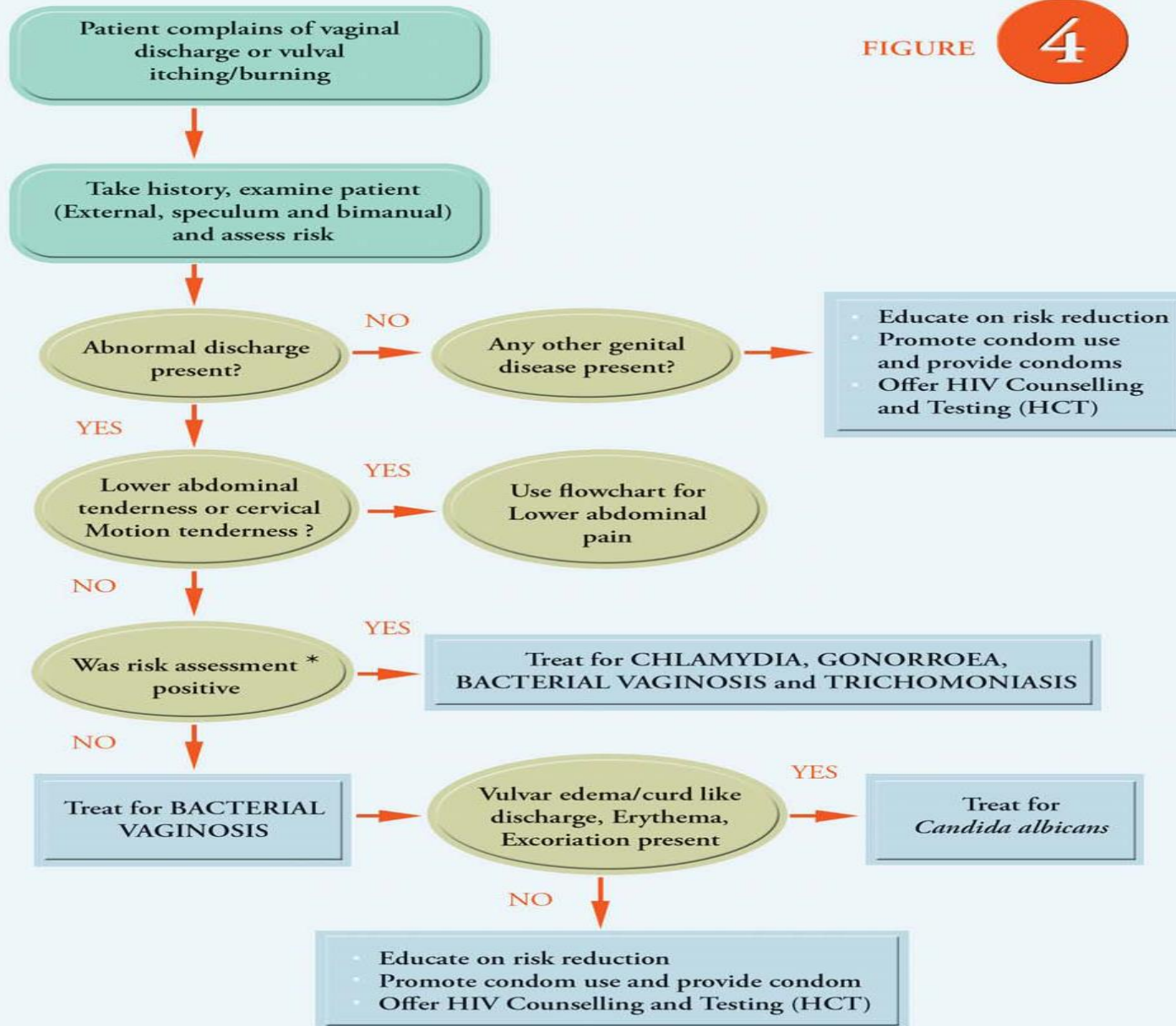
- Abnormal Vaginal discharge in terms of quantity, color or odor could be most commonly as a result of vaginal infections
- **Bacterial vaginosis** is the leading cause of vaginal discharge in Ethiopia followed by
 - candidiasis,
 - trichomoniasis,
 - gonococcal and chylamydia cervicitis in that order.
- Risk factors for cervicitis include
 - age less than 25,
 - trading sex,
 - multiple or new partners in the last three months

Vaginal Discharge



FIGURE

4



* Risk factors include age < 25 years, trading sex, multiple or new partner in the last 3 months.

Recommended Treatment for Vaginal Discharge

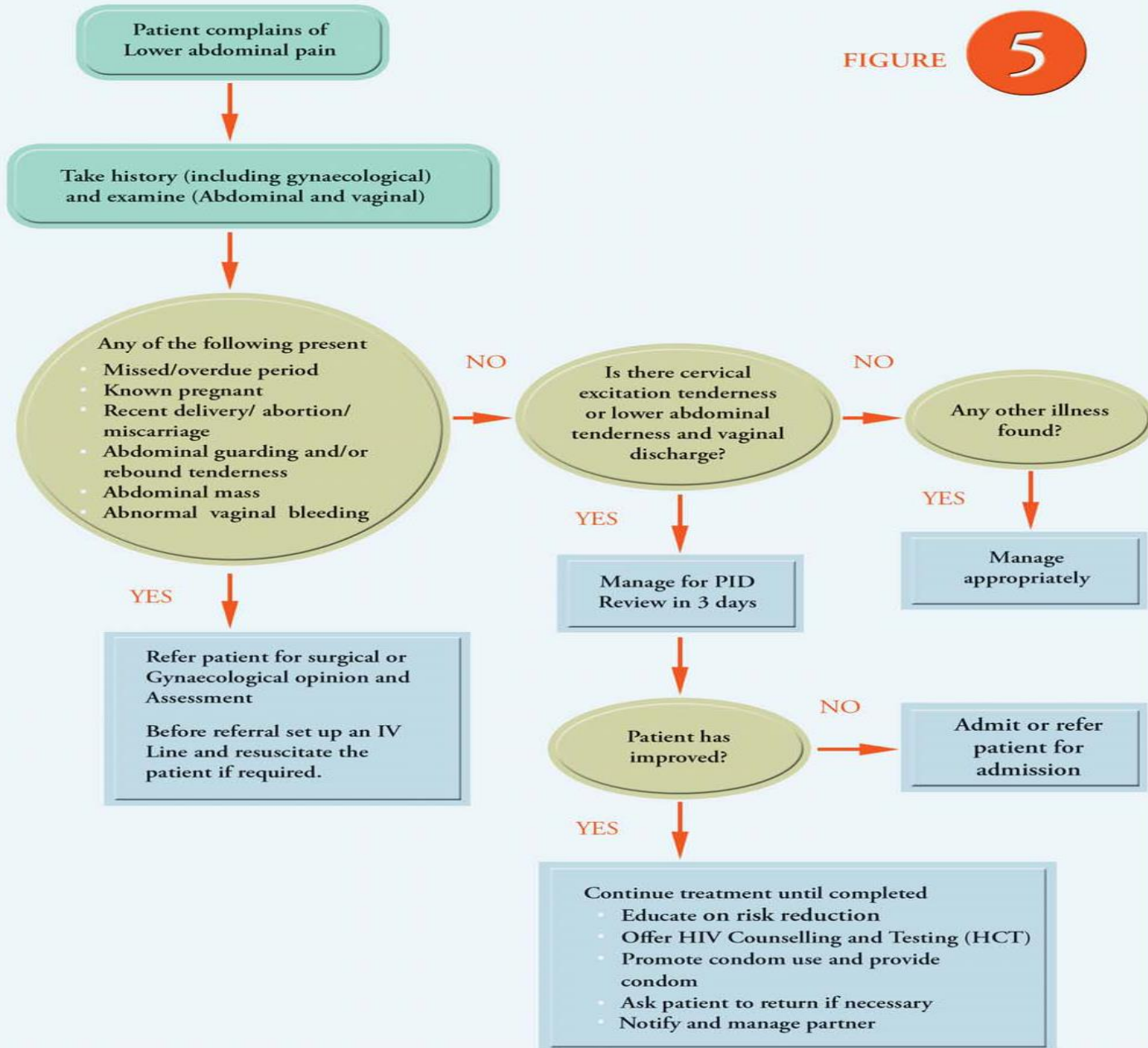
Risk Assessment Positive for STI	Risk Assessment Negative for STI
<ol style="list-style-type: none"> 1. Ceftriaxone 250mg IM stat/Spectinomycin 2 gm IM stat Plus 2. Azithromycin 1gm po stat/Doxycycline 100 mg po bid for 7 days Plus 3. Metronidazole 500 mg bid for 7 days <p>If discharge is white or curd-like add</p> <ol style="list-style-type: none"> 4. Clotrimazole vaginal pessary 200 mg at bed time for 3 days <p>Note:</p> <p>preferred regimen is Ceftriaxone 250mg IM stat plus Azithromycin 1gm po stat plus Metronidazole 500 mg bid for 7days</p>	<p>Metronidazole 500mg PO BID for 7 days</p> <p><i>and</i></p> <p>If discharge is white or curd-like add</p> <p>Clotrimazole vaginal tabs 200mg at bed time for 3 days</p>

5. Lower Abdominal Pain /PID/ (Pelvic Inflammatory Disease)

- PID is ascending infection of the upper genital tract (uterus, tubes, etc) from the cervix and/or vagina
- Common etiologies:
 - Sexually transmitted:
 - **Neisseria gonorrhea,**
 - **Chlamydia trachomatis,**
 - Others (non-STI):
 - **M. genitalium, Bacteroides species, E. coli, H. influenza, Streptococcus**
- Vaginal discharge is often present

FIGURE

5



Recommended Treatment for PID

Out patient	Inpatient
<ol style="list-style-type: none"> 1. Ceftriaxone 250 mg IM stat/Spectinomycin 2gm i.m stat Plus 2. Azithromycin 1gm po stat/Doxycycline 100 mg po b.i.d for 14 days Plus 3. Metronidazole 500 mg po b.i.d for 14 days <p>Admit if there is no improvement within 72 hours</p> <p>Note : <i>The preferred regimen is</i></p> <p><i>Ceftriaxone 250mg IM stat plus Azithromycin 1gm po stat plus Metronidazole 500 mg bid for 14 days .</i></p>	<p>Ceftriaxone 250 mg i.m/i.v /Spectinomycin 2 gm i.m bid</p> <p>Plus</p> <p>Azithromycin 1gm po daily /Doxycycline 100 mg po b.i.d for 14 days</p> <p>Plus</p> <p>Metronidazole 500 mg po b.i.d for 14 days</p>

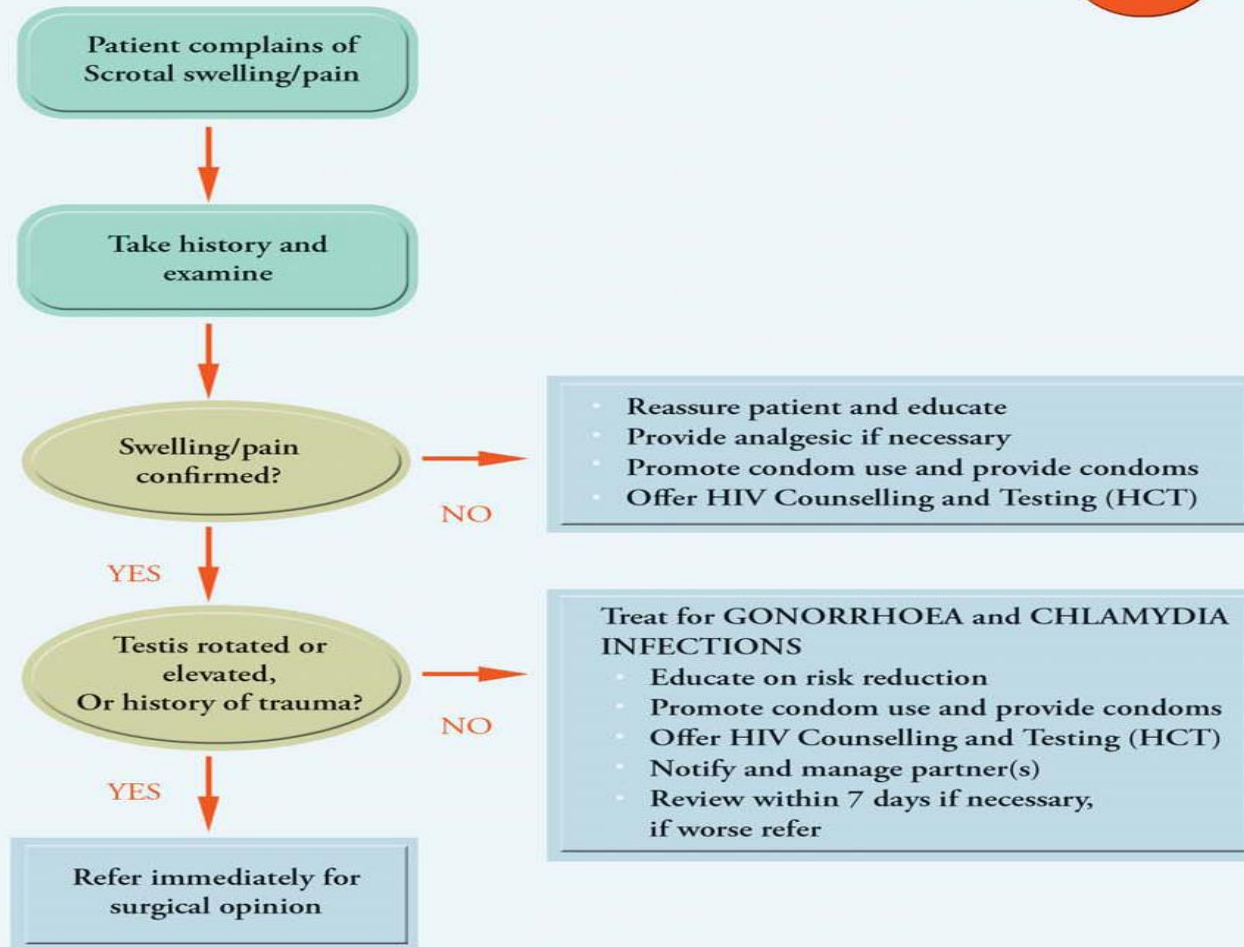
- **Note:** *For inpatient PID, ceftriaxone, spectinomycin or azithromycin should continue for 24hrs after the patient remain clinically improved, after which doxycycline and metronidazole should continue for a total of 14 days*

6. Scrotal Swelling

- Common STI causes of scrotal swelling are similar to those of urethral discharge
 - *Neisseria gonorrhoea*
 - *Chlamydia trachomatis*
- Exclude non-STI causes of scrotal swelling:
 - *M. tuberculosis*,
 - *Mumps virus*
 - *P. aeruginosa*,
 - *Filarial diseases*

FIGURE

6



Scrotal Swelling

Recommended Therapy

- **Non-Pharmacologic: scrotal support**
- **Pharmacologic**

Recommend treatment for Scrotal Swelling

Ceftriaxone 250mg IM stat/ Spectinomycin 2gm IM stat

plus

Azithromycin 1gm po stat/Doxycycline 100mg bid PO for 7 days

Note :The preferred regimen is Ceftriaxone 250mg IM stat plus Azithromycin 1gm po stat

7. Inguinal Bubo

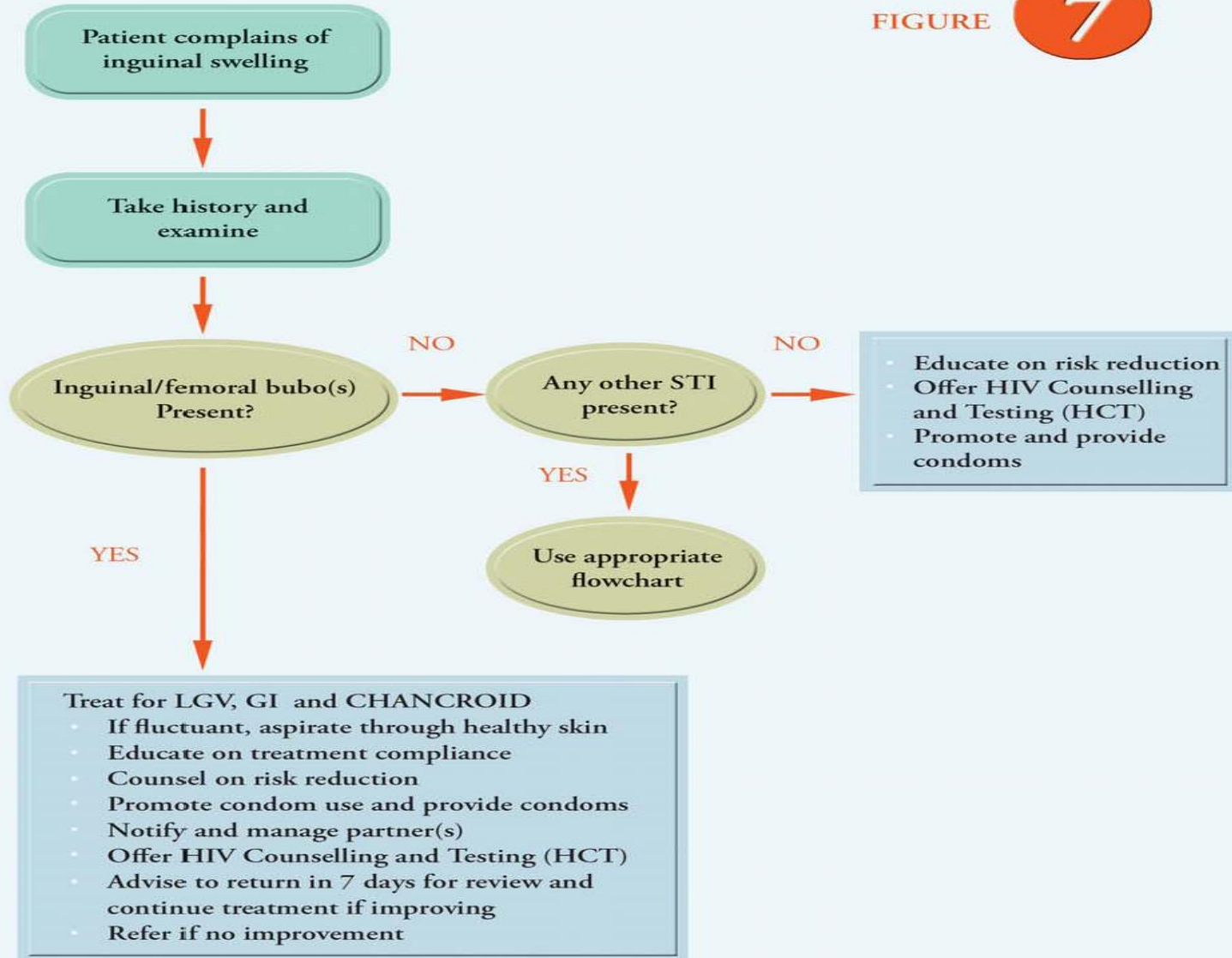
- This is a painful, fluctuant, swelling of the lymph nodes in the inguinal region (groin)
- Swelling of inguinal lymph nodes as a result of STIs (or other causes)
- Common causes:
 - Chlamydia,
 - *Klebsiella granulomatis* (donovanosis),
 - syphilis,
 - Chancroid

Inguinal Bubo



FIGURE

7



Recommended treatment for inguinal bulbo

1. Ciprofloxacin 500mg bid orally for 3 days **Plus**
2. Doxycycline 100 mg bid orally for 14 days /Erythromycin 500mg po qid for 14 days.
 - If patient have genital ulcer, **add** Acyclovir 400mg tid orally for 10 days(or 200mg five times per day for 10 days)

Note: surgical incisions are contraindicated; aspirate pus with hypodermic needle through the healthy skin

Neonatal Conjunctivitis



Neonatal Conjunctivitis

- Infection of the eyes of the neonate as a result of genital infection of the mother, transmitted during birth
 - Causes:
 - *Neisseria gonorrhoea*
 - *Chlamydia trachomatis*
- Non-STIs:**
- *S. pneumonia*,
 - *H. influenza*,
 - *S. aureus*.



Prevention Ophthalmia Neonatorum

- Wiping the baby's both eyes with dry and clean cotton cloth as soon as the baby is born.
- Apply **1% tetracycline eye ointment** into the eyes of the newborn infant.

Recommended Treatment Neonatal Conjunctivitis

1. Ceftriaxone 50mg/kg IM stat maximum dose 125/
Spectinomycin 25 mg/kg IM stat maximum dose
75mg **plus**
2. Erythromycin 50mg/kg orally in four divided doses
for 14 days

Note: TTC is used as prophylaxis for neonatal conjunctivitis but not for treatment

STIs in Children and Adolescents

- The occurrence of STIs in children except for neonatal infections and congenital syphilis invariably indicates sexual abuse.
- Pharmacy professionals therefore, should arrange for emotional as well as legal support for the child as part of the comprehensive management

Kiting of STI medicines

- STI management through pre-packed treatment kits has been an approach to strengthen the syndromic approach of STI treatment.
- The package comprises also condoms, partner referral card, information sheet on adherence and illustrative pictures.

- Currently, three types of Pre-Packed STI treatment kits (PPST), namely:

- Addis Cure,
- Addis Cure Plus and
- Ul-cure

are in use in Ethiopia for the treatment of urethral discharge, vaginal discharge and genital ulcer syndromes, respectively