MODULE

Sexually Transmitted Infections

For the Ethiopian Health Center Team

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UNIT ONE

INTRODUCTION

1.1. Purpose of the Module

This module is intended to serve as a general learning resource about Sexually Transmitted Infections (STIs) for the health center team: health officers, public health nurses, environmental health technicians and sanitarians, and medical laboratory technicians.

The basic and general concepts about STIs, their etiologic agents, epidemiology, clinical features, diagnostic methods, treatment, and prevention and control strategies are discussed in a simple and comprehendible way. It can also be used by other health professionals. It should be noted, however, that it is not a substitute for standard text books. The module can also be used as a resource for professionals working in health centers. It may also be used as learning material in training, workshops and seminars for members of the health center team and community health workers and as a source of information for care givers and patients.

1.2. Directions for Using the Module

Before starting to read this module, please follow the directions given below:

Go through all the contents of the core module by starting with the pre test.

Use a separate sheet of paper to write your answers and label it “pre-test answers”. The pre-test has two portions: part I and part II.

Part I: Contains common questions to be answered by all categories of the health center team:

Part II: The questions are prepared for the specific categories: health officer (HO), public health nurse (PHN), and medical laboratory technician (MLT).

Select and do the questions of the portion indicating your professional category.

When you are sure that you are through with the core module proceed to read the satellite module corresponding to your profession or interest. However, the satellite module for environmental health technicians is not included here. It is believed that the contents in the core module are sufficient for environmental health technicians.

Go through the task analysis for the health center team members and compare it with that of your own.

N.B.

You may refer to the list of abbreviations and glossary at the end of the module for terms that are not clear.

Questions specific to Environmental health Technician (EHT) are not prepared, because, no specialized task is deemed for this category in the module.

UNIT TWO

CORE MODULE

2.1. Pre-test

Answer the following questions on a separate answer sheet.

2.1.1. Part I (Pre-test all cate

13. Taking antibiotics prior to sexual intercourse can prevent STI.
14. Which of the following statement is false?
    A. STIs rank 2nd to malaria in their socio economic impact in tropical communities.
    B. In developing countries STIs constitute 15% of the disease burden especially in the urban population.
    C. Globally women have less STI disease than men.
    D. None of the above
15. Which of the following is not sexually transmitted?
    A. Human papilloma virus
    B. N.gonorrhea

2. The drug of choice for vaginal discharge is Benzathine Penicillin.

   A. True B. False

3. Thick white ‘cheesy’ odourless vaginal discharge is characteristic of candidiasis.

   A. True B. False

4. A recent new partner is one of the risk factors for acquiring STI.

   A. True B. False

5. Which of the following is intracellular Gram –ve organism?

   A. T.Pallidum
   B. N. gonorrhea
   C. C.trachomatis
   D. Phithrus pubis
   E. B and C

6. Lymphograuloma venerum is caused by:

   A. H.ducreyi
   B. C. trachomatis
   C. Human papilloma virus
   D. Calymmatobacter granulomatis
   E. None of the above

7. Which of the following diseases does not produce inguinal bubo?

   A. Herpes genitalis
   B. Lymphogranuloma venereum
   C. Chancroid
   D. Granuloma Inguinale
   E. Syphilis

8. Painful genital ulcer is caused by

   A. Hepatitis B virus
   B. H-duereyi
   C. T. pallidum
   D. C. trachomatis
   E. B and C

9. Vaginal discharge syndrome is caused by:
    A. Gonorrhea
    B. Trichomoniasis
    C. Candidacies
    D. Chlamydial infection
    E. All of the above
10. A 20 year old female presented with fever and vaginal discharge. On examination she has cervical motion tenderness and uterine tenderness. This patient should be considered as a case of
    A. Inguinal bubo syndrome
    B. Vaginal discharge syndrome
    C. Lower abdominal pain syndrome
    D. Genital ulcer syndrome
    E. B and C
11. Which of the following is **least** essential for syndromic management of patients with STI?
    A. Laboratory investigations
    B. Proper history
    C. Physical examination
    D. Follow up of patients
    E. None of the above
12. Which of the following drugs should not be used during pregnancy?
    A. Benzathine Penicillin
    B. Ampicillin
    C. Tetracycline
    D. Erythromycin
13. Gram stain of abnormal vaginal discharge might detect
    A. Gonococcal infection
    B. Candidial infection
    C. Syphilis
    D. Trichomoniasis

14. The primary ulcerative lesion in syphilitic infection is known as _____.
15. Genital ulcers preceded by vesicles are typical for _____.
16. List the common bacterial causes of STIs.
17. List the major advantages of the syndromic approach to STIs.
18. List the two most common causes of urethral discharge syndromes.
19. List some of the potential complications of properly untreated STIs.
20. Explain the link between STIs and HIV infection

2.1.2.2. Pre-test for Public Health Nurses

1. List the nursing interventions in the management of STIs.
2. What are the commonest nursing diagnoses related to STIs? Mention three.
3. State the difference between health education and counseling
4 Describe the objectives of counseling in STI prevention and control.
5. What are the most common side effects, contraindications, and nursing considerations in administering tetracyclines?
6. Mention at least two universal precautions in handling patients with STI lesions or discharges?

2.1.2.3. Pre-test for Medical Laboratory Technicians

Write the best single answer of your choice for questions 1 – 10.

1. The source of sample for diagnosis of STI include:
    A. Urethral discharge
    B. Serum
    C. Vaginal discharge
    D. Skin scraping
    E. All

2. A false negative result in the examination of urethral discharge could be caused by:
    A. Incorrect labeling
    B. Inappropriate staining technique
    C. Collection of specimen before urination
    D. A and B
    E. All
3. Before collection of a sample from patients with lesions for diagnosis of T.pallidium, the area should be cleaned with
    A. Savlone
    B. 70% alchol
    C. Physiological saline
    D. Cleaning is not important
    E. None
4. The antigen supplied with the RPR kit should be stored at what temperature?
    A. Room temperature
    B. 2∀ - 8∀ C
    C. -20∀C
    D. 37∀
    E. None
5. N.gonnorea from urethral discharge is diagnosed by:
    A. Gram's staining technique
    B. We mount preparation
    C. Culture
    D. A and C
    E. None
6. Laboratory diagnosis for syphilis includes the following **except**:
    A. RPR test
    B. KOH test
    C. VDRL test
    D. Identification of T.pallidium using dark field microscopy
    E. None

7. Identification of gram negative intracellular diplococci in urethral or cervical discharge is suggestive of:
    A. T.Pallidium
    B. C.albicans
    C. Chlamydia species
    D. N.gonnorea
    E. T.vaginalis

8. The safety precaution that should be considered when collecting and handling specimens include
    A. Wear a rubber glove
    B. Cover any skin break on the hands
    C. Give extra care
    D. All
    E. None

9. Which of the following is a non-treponemal antigen test?
    A. RPR
    B. TPHA
    C. VDRL
    D. FTA
    E. A and C

10. In the RPR test for syphilis, false positive reaction could be caused by
    A. Leprosy
    B. Tuberculosis
    C. Malaria
    D. Pregnancy
    E. All

2.2. Significance and Brief Description of the Problems

Sexually transmitted infections (STIs) remain a public health problem of major significance in most parts of the world (1). There continues to be an increasing trend because of factors such as the following: (5).

Many more people live in or travel to large cities and they are often separated from their families.

Many people become sexually active before marriage.

The impact of drug resistance.

Low level of awareness about STI.

Lack of behavioral change among sexually active individuals etc.

STIs impose an enormous burden of morbidity and mortality in developing countries, both directly through their impact on reproductive and child health, and indirectly through their role in facilitating the sexual transmission of HIV infection. In developing countries STIs are responsible for up to 15% of the disease burden in urban populations. In tropical communities STIs rank second to malaria in their socio-economic impact.

In the 1993 world development report, it is estimated that, in developing countries STI, (excluding HIV), accounted for 8.9% of the disease burden in women aged 15-49 years and 1.5% in men of the same age class. This ranked STIs, excluding HIV, as the second major cause of lost disability-adjusted life years in women of reproductive age.

The vast majority of the disease burden from STIs is a result of the complications and sequel that may follow infection: for example primary infections with gonorrhea and chlamydia in woman is usually a symptomatic. When left untreated, however, infections may migrate upwards from the lower reproductive tract and lead to pelvic inflammatory disease (PID).

STIs are a priority not only because of their wide prevalence but also because they are easily treatable if affected individuals reach a health service provider. In developing countries, the laboratory diagnosis of most conditions can be difficult. Even where test results are available, the time it takes to receive results often delays treatment of STI cases. (1).

A fundamental goal of STI cont

He admitted, after repeated questioning, that he had been having extramarital sexual intercourse secretly with one of the young women in the village, who was a widow. The patient said that he couldn't acquire the disease from this woman because, he thought, she was healthy and he had never heard her complaining about any health problem. Rather he believed that he got this problem after he urinated facing the moon the night before his illness. He denied any knowledge about condoms.

He was a father of 6 daughters and 5 sons, highly respected and living in one of the small village in his locality with his wife and 5 of his children. The rest of his children were married and living in the same village.

2.4.2. Questions Related to the case study

Answer the following questions based on the case study in Section 2.4.1.

1. What do you think the patient's problem was?
2. How would you manage his problem?
3. Why do you think the treatment he got at the private clinic didn't help him?
4. What do you think about the incidence of similar health problem in our community?
5. Should your management include treating his sexual partner(s) and advice on safe sex?
6. What do you think the possible consequence would be if this person is not treated at all or properly?
7. What is his risk of acquiring HIV infection?
8. In what way can practicing safe sex prevent problems like this?
9. What do you think of the perception of the patient with regard to the cause of his illness?

2.5. Definition of STIs

Sexually transmitted infections (STIs) are infections that are passed from one person to another through sexual contact. A group of over 50 infectious diseases are included under STIs. Although their etiologies involve a number of organisms, the infections present themselves commonly in the following syndromes (genital ulcer, urethral discharge, vaginal discharge, lower abdominal pain, scrotal swelling, inguinal bubo and neonatal conjunctivitis).

b. Viral

Herpes simplex type I and II

Human pagillomavirus (genital warts)

Hepatitis B virus

Cytomegalovirus

HIV

c. Others

Trichomonal virginals (Trichomoniasis): another important sexually transmitted agent which causes vaginitis and has also been shown to facilitate HIV transmission.

hown5 TuOthers

blisters and ulcers in herpes, chancre in syphilis, inguinal lymph node abscess in LGV etc.

Some infections can be asymptomatic, but patients with such type of infections can be a source of infection. Similarly ectoparasites like P. pubis can be acquired by sexual intercourse with an already infected person. They reside and multiply on the skin of the patient causing irritation and itching, and they feed on the patient's blood.

2.8. Clinical Features

The syndromic approach is highly based on the patient's history.

The physical examination of a case suspected on STI is complimentary to the history of the case. The following syndromes are common in patients with STI.

Urethral discharge or burning on urination in men

mulopurulent discharge. However, this is not always true and mixed infections by both organisms can sometimes occur.

2.8.2. Vaginal Discharge

The following organisms are common causes of vaginal discharge

Neisseria gonorrhoeae

Chylamydia trachomatis

Trichomonas vaginalis

Gardnerella vaginalis and other anaerobic bacteria

Candida albicans

Many women have a small amount of vaginal discharge (physiological leucorrhea), which is clear and odorless. This is normal, it becomes abnormal, however, if there is a85(l)-2.c.002

Tertiary syphilis occurs after a variable latent period of months to years. It is characterized by gummatous changes and arthritis. Neuro-syphilis can occur at any time.

b) **Geniutal herpes**: Latency and frequent recurrence characterize herpes genitalis producing a life long infection after the primary infection. The lesions are painful initially presenting as erythematous nacules, which then progress to vesicles, ulcers and finally crusts. Prolonged and sever disease with extensive tissue involvement and higher rate of dissemination occur in patients with HIV infection.

c) **Chancroid:** This is a common cause of genital ulcer in developing countries. The spread of infection is dependent on the number of partners of an infected person and prostitutes appear to be the main reservoir of infection. Males are affected more frequently than females and women are often asymptomatic. The disease increases the risk of HIV transmissions by 10-300 times per sexual exposure. The lesions are painful progressing from a small papule to pustule and then ulcer with soft margins described as soft chancre. Inguinal adenopathy that becomes necrotic and fluctuate (bunoes) follow the ulcer.

d) **Lymphogranuloma Venereum (LGV):** The disease starts as a small painless papule that develops to an ulcer. After a week or so, painful regional lymphadenopathy may occur. The lesions are not apparent.

e) **Granuloma Inguinale:** It is a chronically progressive ulcerative disease without systemic symptoms. The case usually

The common pathogens associated with PID, which are transmitted through the sexual route, include N. gonorrhoeae, C. trachomitis, M. homonis, and Bacteroides.

2.8.5. Scortal Swelling

The causes of scrotal swelling from STI are usually N. gonorrhoea and C. trachomatis; when infected, the testis becomes swollen, hot and very painful. However, other infectious causes of scrotal swelling could be brucellosis, mumps, onchocerciasis or infection with W. bancrofti, or tuberculosis that are not sexually transmitted.

It is important to exclude other causes of scrotal swelling like testicular torsion, trauma and incarcerated inguinal hernia as they may require urgent referral for proper surgical evaluation and treatment.

2.8.6. Inguinal Bubo

Inguinal bubo is a swelling of inguinal lymph nodes as a result of STIs but it should be remembered that infections on the lower extremities or in the perineum could produce such swelling. The common STI pathogens causing inguinal swelling include: T. pallidum, C. trachomatis (serovars 1, 2 and 3), H. ducreyi and C. granulomatis.

Surgical incisions are contraindicated and the pus should be aspirated using a hypodermic needle.

2.8.7. Ophtalmia Neonatorum

Ophthalmia neonatorum is the term used to describe a condition where a baby develops purulent conjunctivitis in one or both eyes within four weeks of birth. If the baby is older, the cause is unlikely to be an STI. It is a me

2.9. Diagnosis

The following methods are used to diagnose STI.

2.9.1. Syndromic approach

Features of syndromic approach (syndromic case management):

- Classifying the main causative agents by the clinical syndrome to which they give rise.
- Using flow charts which help the service provider to identify causes of a given syndrome.
- Treating the patient for all the important causes of the syndrome.
- Ensuring that partners/ patients are treated, counseled, educated on treatment compliance and risk reduction, and condoms provided.

2.9.2. Clinical diagnosis

- Using clinical experience to identify sign and symptoms typical for specific STI.

2.9.3. Etiological Diagnosis

- Using laboratory tests like microscopy, culture and serological tests to identify the etiologic agent.

  Etiological diagnosis is often regarded as the ideal approach in medicine. It enables service provider to make precise diagnosis and treat their patients with equal precision. Etiological diagnosis presents several significant problems:

  i. Identifying the twenty or more STI causative agents requires both skilled persons and sometimes sophisticated laboratory equipment which most health institutions in our setup lack.
  ii. A large number of patients seek care for STI at the primary health care level and at this level the required skill and etiological diagnosis are not available.
  iii. Etiologic diagnosis is also expensive and time consuming.

In view of the above facts it is preferable to use syndromic approach based on clinical features.

2.10. Case Management

As it is stated in the above (in Section 2.9) the syndromic approach is a preferred way of managing STI cases.

The syndromic case management provides health workers in low-resource settings with a practical tool to improve diagnosis and treatment. It uses common symptoms of STI as a starting point and, using a flow charge, an STI management decision is arrived at. In addition to treatment, counseling about STI prevention, partner notification and control provision are essential parts of syndromic case management.

The major advantages of syndromic management are:

1. It is simple, inexpensive, rapid and can be implemented on a large scale.
2. It requires minimum training and can be used by a broad range of health workers.
3. It allows for diagnosis and treatment in one visit.
4. It provides opportunities for introducing preventive and promotive measures such as education, partner management and distribution of condoms.

Case management decision is made using the flow chart:

2.11. Prevention and Control of STI

The popular saying "Prevention is better than cure" is very true in the case of STIs.

Prevention of STI must remain as a priority that goes beyond individual behavior change. The programs must address the root causes of the problem.

These problems are:

Social and

Economic factors that make people vulnerable.

Reducing obstacles to basic education, information on sexual and reproductive health, access to primary health care and economic opportunities are the central elements in STI prevention programs.

The strategies to reduce STI /HIV are complimentary as they aim to avoid unsafe sex and limit the number of sexual partners. The following are components of the public health package of STI prevention and control.

1. Promotion of safer sexual behavior

Avoiding multiple sexual partners or casual sex and consistent and correct use of condoms with all partners not known to be free of an STI. Health facilities which treat and prevent STI should have resources available for promoting safe sexual behavior. Clients should be educated on methods to lower their risk of acquiring STI/HIV, including abstinence, being mutually faithful and correct use of condoms (see fig.2.1 for example).

Use of condoms should be promoted and they should be available in any health care facility providing STI prevention services. Instructions about the proper use of condoms should also be provided, where feasible (condoms should be provided free of charge).

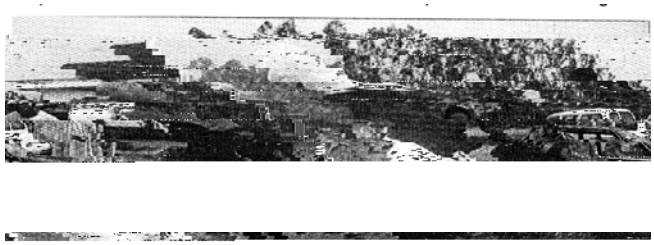

Fig: In Cambodia trainers from a hospital demonstrate proper use of condoms to taxi drivers at a market in SVAY RIENG province.

Source: Net work family health international volume 20, Number 4, 2001,

2. Education regarding prevention of STI/HIV

Education forms the backbone of control of STI. The involvement of the lay public is imperative. The awareness about the STI and sex in particular is very vital. A variety of methods can be used for the purpose, comprising public education, briefings at religious places, news items and documentaries on television and radio. Sex education should be a major topic in the school and college curriculums. The public and patients should be encouraged to seek appropriate health services provided by health institutions.

Explaining to the clients the association between STI and HIV, that it is the same risky behaviors that are responsible for acquisition of these two conditions is also an important element in the prevention of STI/HIV. Clients should be educated on safe sexual behavior: abstaining from sexual activity, maintaining a mutually faithful sexual relationship, engaging only in safe sex acts such as non- penetrative or having sex only with the use of condom.

financing, and an infrastructure within which counseling can be provided will all need to be taken into account.

Counseling has to be part of all strategies for preventing STI/HIV infection. Most people with STI/HIV infection do not know that they are infected. Until now, only a small percentage of those with identified STI/HIV infection or disease have had access to reliable counseling services and, therefore, to the support necessary for changes in behavior. The continued development of counseling services is therefore important to the prevention of STI/HIV.

6. **Integration of STI prevention into primary health care, reproductive health care facilities, private clinics and others.**
7. **Targeting vulnerable groups such as, commercial sex workers, adolescents, long distance truck drivers, military personnel and prisoners.**
8. **Involving community** leaders, religious leaders and community health workers in public awareness creation, prevention and control of STI.

UNIT THREE

SATELLITE MODULES

3.1. Satellite Module for Health Officers

3.1.1. Direction for Using This Module

Before reading this satellite module be sure that you have completed the pre-test and studied the core module.

Questions

1. What is the probable diagnosis of this patient?
2. What should be the management of this patient?
3. Does this patient need laboratory tests? Why?

The Health Officer treated the patient with spectromycin infection and tetracycline tables. He also discussed the causes of his problem and convinced him to bring his sexual partner the next day.

The next day the Health Officer examined the partner and found a painless ulcer on the vulva. There was no vaginal discharge. The inguinal areax were normal and there was no other abdominal finding.

Questions based on the above case study:

1. What is the possible diagnosis of his partner?
2. How should the health officer manage this partner?

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Viral Causes	**Disease**
HIV 1 and HIV 2	HIV/AIDS
Herpes simplex virus (type 1 and 2)	Genital herpes
Human papilloma virus	Condylomata accuminata
Hepatitis B virus	Hepatitis

Protozoal causes	**Disease**
Trichomonas vaginalis	Trichomoniasis

Fungal Causes	**Disease**
Candida albicans	Vaginal candidiasis
Ectoparasites	**Disease**
Phithrus pubis (Pubic lice)	Pubic lice infestation
Sarcoptes scabiei	Scabies

3.1.4.2. Pathogenesis

Only the most important organisms will be dealt with in this chapter.

N. gonorrhea is anintracellular Gram -ve diplococci. Initially the organism attaches to the columnar mucosal cells. Then, it penetrates and proliferates inside the cells. This results in local inflammatory response or systemic manifestations (1, 5).

C.trachomatis is an obligate Gram –ve intracellular organism. Mucosal infection results in local inflammatory reaction. The subsequent pathogenesis of C.trachomatis is not yet clearly understood. Some serotypes of C.trachomatis which cause Lymphogranuloma venereum, invade the local lymphatic system causing necrosis and abcess in the lnguinal lymphnodes.

N.B. N.gonorrhoea and C.trachomatis can ascend to the 23 Twer TcNn as-7.725 - ent pathoge106is of C.tdJ1trium5 -.tdJ1tri Ly), f03 Tc.3to th[0is caatmphnolopi10t

T. Palladium is a spirochete organism and it rapidly penetrates intact mucous membranes or gains access to subcutaneous tissues via microscopic abrasions that occur during sexual intercourse. It multiplies locally and the initial ulcerative lesion (Chancre) develops which gives Primary Syphilis. At the same time some organisms travel to and establish infection in regional lymphnodes. These local infections induce a host immune response that produces antibodies which may be detected in serum. Inspite of these host responses wide spread hematogeneous dissemination of the organisms occurs. This gets the basis for the development of later stages of syphilis (secondary and tertiary syphilis).

It decreases the need for referring patients to higher health institutions.

It is easy to teach and simple to apply.

3.1.5.2. The aims of management in STIs are:

Early treatment of cases.

Prevention and treatment of complications.

Treatment of sexual partners.

Education and counseling.

Follow up and referral.

There are five common syndromes encountered by health providers.

1. Urethral discharge syndrome (men only)
2. Vaginal discharge syndrome in woman.
3. Genital ulcer syndrome.
4. Lower abdominal pain syndrome in women.
5. Scrotal swelling
6. Inguinal bubo syndrome
7. Neonatal conjunctivitis

A. Urethral Discharge Syndrome in men

Clinical Features

It is a discharge from the penis with or without painful urination (dysuria). Usually the patient complains of urethral discharge and/or dysuria and the Health Officer should ask for any history of sexual contact. On examination urethral discharge may be observed. If not, the penis should be milked to confirm the presence of discharge. Redness and swelling of the urethral meatus (opening) is usually observed. The Health Officer should also look for other signs of STI like genital ulcer and inguinal L/N enlargement etc.

The most common causes of urethral discharge in man are gonorrhea and chlamydial infection. In chlamydial infection symptoms of urethral inflammation occur between 7 - 28 days after sexual intercourse. It gives scanty whitish mucoid discharge associated with dysuria and urethral discomfort. The discharge is usually marked in the morning.

In Gonococcal infection symptoms start between 2 - 10 days after sexual contact.

The discharge is usually yellowish white with severe burning sensation on micturation.

Management

In syphilis and chancroid inguinal lymphnodes might be enlarged. In syphilis this is usually painless and firm, but in chancroid it is painful and may discharge pus.

Genital ulcer may also be caused by granuloma inguinalae (donovanosis) and LGV (lymphogranuloma venereum).

Management

Use the flow chart for genital ulcer (Unit 7.2 flowchart 3).

D. Lower Abdominal Pain Syndrome in women (PID)

Clinical Features

This syndome is characterized by lower abdominal pain particularly during sexual intercourse and by vaginal discharge. The patient may complain of fever, lower abdominal pain and vaginal discharge usually soon after menstruation. On physical exam the health officer may observe fever of ∅ 38∀C and lower abdominal tenderness sometimes with rebound tenderness. On pelvic examination the following findings can be detected:

- ∉ Cervical discharge
- ∉ Cervical motion tenderness and
- ∉ Tender uterus on bimanual examination
- ∉ Tender adenexa (ovary, fallopian tube) on bimanual examination
- ∉ sometimes mass in the adenexa

The presence of genital ulcer and enlargement of inguinal lymphnodes should be checked.

The common causes of this syndrome are gonorrhea, chlamydial infection and anaerobic bacteria infections.

N.B. Surgical emergency causes of lower abdominal pain should be ruled out

E.g. Appendicitis, ectopic pregnancy, intestinal obstruction, ovarian torsion.

Management

Use the flow chart for lower abdominal pain syndrome in women (Unit 7.2 flowchart 4).

E. Scrotal swelling syndrome:

Clinical features

The testis, when infected, becomes swollen, hot and excruciatingly painful. Patients may become sub fertile if quick and effective therapy is not given. This syndrome is commonly caused by N. gonorrhea or Chlamydia. It can also be caused by Escherichia coli and mumps virus.

Management

Use the flow chart for scrotal swelling syndrome in women (Unit 7.2 flowchart 5).

F. Inguinal bubo syndrome:

Clinical features

G. Ophtalmia neonatorum

Clinical features

This is characterized by development of purulent conjunctivitis in one or both eyes in a baby within 4 weeks of birth. It is a medical emergency which can result in permanent damage to eyes including blindness unless treatment is initiated within 24 hours.

It is commonly caused by infection of Neisseria gonorrhoea or Chlamydia trachomatis or a mixture of both.

Management

Use the flow chart for Ophtalmia neonatorum (Unit 7.2 flowchart 7).

3.1.6. Complications of STIs

The complications of STIs are summarized as shown in table 3.1

Table 3.1: Complications of STIs

Disease	Complication
Gonorrhoea	- Disseminated gonococci infection epididymitis and orchitis - Conjunctivitis in newborn - PID and infertility - Urethral stricture in men
Syphilis	- 2^{o} / 3^{o} syphilis
Chancroid	- Amputation of penile shaft - Urethral stricture - Fistula formation etc.
LGV	-Infertility, genital elephantiasis - PID, fistula

3.1.7. The Link between STIs and HIV/AIDS

It is now clear that HIV/AIDS and other STIs have bi-directional relations. The transmission of HIV is influenced by the presence of other STIs and the course of other STIs is influenced by the presence of HIV in patients. Data from a number of studies strongly suggest that the presence of both ulcerative and non-ulcerative STIs facilitate the transmission of HIV. Some studies have shown that there are two to nine times increased risk of acquiring HIV when patients have other STIs. This may explain why HIV infection is prevalent in Africa where STIs' control and management programs are underdeveloped.

On the other hand the clinical pictures of many STIs are modified by the presence of HIV infection. STIs tend to progress quickly resulting in early development of complications. They also tend to be more chronic. Patients with STIs co-infected with HIV do not respond favorably to conventional treatment, e.g. patients with HIV and Syphilis sometimes fail to respond to single dose treatment of with Benzathine penicillin.

Patients have greater incidence of drug allergy making it difficult for the health care provider to give affordable drugs.

Therefore, programs to combat STIs should include HIV/AIDS as one of the most important components. The health officer should understand the link between STIs and HIV/AIDS and predict the outcomes of patients with these conditions so that early management of cases and their complications can be applied.

Now you are through with the core and satellite modules, but there are still some activities remaining as stated below.

1. Read the task analysis of the different categories of the Health Center Team on Unit 4.
2. Do the pre-test as a post-test.

   N.B:

3.2. Satellite Module for Public Health Nurses

3.2.1. Direction for Using this Module

Before reading this satellite module, be sure that you have studied the core module and completed the pre-test.

Continue reading this satellite module.

3.2.2. Learning Objectives

After going through this module you will be able to:

Carry out appropriate nursing management for syndromic management of STIs

Describe the methods of STI prevention

Maintain case reporting and case recording

Conduct counseling for couples with STIs

3.2.4. Nursing Management of STIs (3)

Approach to the management of STIs

The management of STIs can vary depending on the availability of resources. In countries where resources are not limited etiologic management is appropriate. In poor countries, syndromic management of STIs is a practical alternative because it has got several advantages. The service relies on identification of specific syndromes and treatment can be given without delay. It is cheep because the service can be delegated to relatively junior staff and little or no laboratory facilities are required. The effective therapy also delays the emergence of antimicrobial resistance. This doesn't mean etiologic diagnosis is not important. The cause of specific syndromes may vary by geographical areas e.g. Chancroids can be common in some areas, but rare in others as a cause of genital ulcer. In-vitro sensitivity pattern is also important to validate syndromic algorithms. Asymptomatic STIs common in women can only be diagnosed by laboratory investigation. Syndromic management of STI is a comprehensive case management that includes the following components

Identification of the syndrome

Educating the patient on how to avoid risks for future infections

Antibiotic treatment of the syndrome

Promotion and supply of condoms

Partner tracing and management

Counseling for HIV

3.2.5. Nursing Assessment of patients with STIs (4)

Examination of patients with STIs includes general assessment of the patient, such as taking history, symptoms, location of lesions, discharge, history of STI and self treatment. Confidentiality is important when sexual issues are involved. Privacy is assured during information gathering sessions. To avoid confusion and negative implications, the nurse uses terms that patients understand, ask open ended questions, and uses sensitivity when asking questions about persons with whom the patient has had sexual contact.

Things to ask:

The following are things to ask regarding the syndromes:

Urethral discharge or burning on urination in men

onset,

unprotected casual sex,

the amount of discharge ,

multiple sex partner,

history of STI in his/ her partner.

Vaginal discharge

Onset,

change in color, amount, and odor,

multiple sexual partner,

change in partner,

sex without condom.

Genital ulcer in men and women

onset,

history of recurrence,

presence of pain,

location,

multiple or clustered ulcers.

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ƒ (history)Tj 17.000 0.000 Td (ulcer)Tj 31.000 0.000 Td <00be>j /TT(PQRST 1 Tf -10.455 3.440 Tw <00w [((re or buo)Tj 17652251.725 T

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Scrotal swelling

onset,

presence of pain,

history of trauma, and

concomitant urethral discharge.

Inguinal bubo

Presence of pain,

ulceration,

discharges, and

the location of swelling.,

Ophtalmia neonatorum

Date of delivery,

History of purulent vaginal discharge of the mother,

History of purulent discharge from eye of the neonate.

N.B: In addition to specific questions related to syndromes, the nurse may ask about patient's use of traditional medicines, use of herbs or other treatments prior to seeking treatment in a clinic; how the patient believes the treatment or approach will solve the problem.

3.2.6. Nursing Diagnosis of STIs

The most common nursing diagnosis based on the assessment of patients may include:

Anxiety related to embarrassment and fear

Non compliance to treatment related to the stigmatizing nature of the disease and lack of understanding

Knowledge deficit about the nature of the disease and the high risk for spread of infection and for other STIs including HIV infection.

Potential for re-infection

3.2.7. Nursing interventions of STIs

The following are important considerations in the nursing interventions for STIs.

3.2.7.1. Reducing Anxiety

Comfort and privacy without interruption as well as verbal and nonverbal assurance of confidentiality are essential in establishing and maintaining rapport. The patient is encouraged to express frustrations and feelings. Talking helps to releave anxiety and gain insight into problems.

3.2.7.2. Patient Education

The objectives of STI related to health education are:

- to promote safe sex through behavioral modification (love carefully, love faithfully)
- to reduce complications of STI by convincing clients of the importance of seeking early treatment
- to educate the client about antenatal care and safe delivery to prevent neonatal transmission.

Health education messages must be specifically directed to target groups keeping in mind their educational levels, customs and beliefs. Messages must be simple and clear to understand. The patient is taught how the disease is transmitted, how to recognize the major signs and symptoms, how long the infectious period lasts, how the disease is treated and how to prevent its spread. The control of the spread of STIs requires considerable patient involvement, education and compliance. To ensure compliance, the treatment regimen for most STIs is made as simple as possible. The following are important messages to stress during education:

- STIs are acquired by sexual and by close and direct contact with an infected person.
- Client with multiple sexual partners should have regular checkups.
- Using a condom with every sexual contact reduces risk.
- Birth control pills and IUDs provide no protection against STIs.
- A person can have multiple infections at the same time.

iii. Specimen collection and transportation

- All specimens should be appropriately labeled so source can be identified. Special precautionary labels/ signs required.
- All laboratory specimens should be handled with the same care.
- Transport all specimens (fresh) as soon as possible to the laboratories

iv. Wear protective clothing to prevent the discharge (splash).

When coming in contact with mucus membranes during delivery or examination and on handling newborn, wear protective garments.

3.2.8. Recording and reporting in STIs control programs

In any control program, data collection is an important step for the purpose of evaluation. This represents interactive process at first utilizing baseline information. But as the program is implemented more refined data should be available for program evaluation. This data comes from the patients. STI patients on their presentation at the health center are expected to be identified on the following: sex, age, syndrome (clinical presentation), first visit or repeated consultations, or contact traced, laboratory results, consumption of drugs, eventual failure or referral. Records should be maintained in the health center and reports communicated as required.

3.2.9. Counseling for couples on STIs

What is counseling?

Counseling is an ongoing dialogue and relationship between client or patient and counselor and it is different from health education. In counseling, the information provided is tailored to the individual client's need and is focused on an immediate presenting problem. The primary difference between couns

Providing psychosocial support to those already affected

In order to achieve these objectives coun

3.3. Satellite Module for Medical Laboratory Technicians

3.3.1. Directions for Using this Module

Before reading this satellite module be sure that you have completed the pre-test and studied the core module.

Continue reading this satellite module

3.3.2. Learning Objectives

General

The aim of this satellite module is to enable the learner to acquire knowledge, attitude and practices concerning laboratory diagnosis of sexually transmitted infections.

Specific

After completing of this satellite module, the learner will be able to

Identify the type and method of specimen required for STI diagnosis

Describe the safety precautions taken when in contact with specimen

Perform the various laboratory tests that are essential for the diagnosis of STI.

Explain the source of error associated with the different tests in laboratory diagnosis of STI.

Prepare reagents necessary for the diagnosis.

Describe how to report laboratory findings in STI diagnosis.

Explain the type and importance of quality control measures.

3.3.3. Safety Precautions

All specimens should be assumed to be infections

During collection of blood or fluid from ulcers always wear rubber gloves.

Cuts, abrasions or skin breaks on the hands should be covered with adhesive tape.

Dispose or sterilize appropriately the contaminated materials.

3.3.4. Source and collection of samples

Source of Sample for STI diagnosis includes:

I. Discharge
II. Blood
III. Skin scrapings

3.3.4.1. Discharges

A. Collection of Urethral discharge (for men)

Materials Required:

Dry cotton
Physiological saline
Cotton wool swab (sterile)
Microscopic slide and cover

Procedure:

1. Clean the area round the urethral opening using a swab moistened with sterile physiological saline.
2. Gently massage the urethra from above down wards, and collect a sample of pus on a sterile cotton wool swab.

   Note: The patient should not have passed urine preferably for 2 hours before the specimen is collected.
3. Make smear of the discharge on a slide. While making a smear, care should be

Inappropriate staining technique.

Heat fixation

Wrong smear preparation

B. Collection of cervical discharge (for women)

Although the specimen collection should be done by clinicians (HO, Nurses), laboratory technicians are anticipated to know the procedure.

Material required:

Speculum

Dry cotton

Physiological saline

Microscopic slide and cover

Cotton wool swab

Procedure:

1. Moisten a vaginal speculum with sterile warm water, and insert into the vagina.
2. Cleanse the cervix using a swab moistened with sterile physiological saline.
3. Pass a sterile cotton wool swab into the endo-cervical canal and gently rotate the swab.
4. Make a smear on a slide for staining by the Gram technique.
5. Label the specimen.

Sources of error:

Incorrect labeling.

Unrepresentative sample.

Inappropriate staining technique.

Heat fixation.

Wrong smear preparation.

Separate the serum from the clotted blood into another clean dry test tube.

Note: If the serum is contaminated with red cells, re-centrifuge the serum. Any lipemic or haemolysed specimen should be rejected.

3.3.5. Laboratory Diagnosis of STI

3.3.5.1. Laboratory test for T-palladium (syphilis)

The diagnosis of syphilis depends on the identification of the organism by dark field microscopy or detection of the serological response due to the infection. Based on the type of antibody response which occurs in patients with treponemal infection, there are two main types of serological tests to diagnose syphilis.

Non treponemal (Cardiolipin) antigen tests Eg. RPR, VDRL (Non specific tests)

Treponemal antigen tests E.g. FTA, TPHA (specific tests)

At the health center level most of these laboratory tests for T-pallidum are not applicable.

RPR (Rapid plasma Reagin) card test (1)

Principle:

Cardiolipin - lecithin cholestrol antigen reacts with reagin antibody in the presence of carbon particles. Due to this reaction, flocculation appears which can be visualised macroscopically

Note: RPR test is supplied in kit form.

Contents of the Kit:

RPR antigen
Positive control
Negative control
Mixing sticks
Disposable test card
Dispensing dropper with measuring needle

Storage of reagents:

RPR antigen should be stored at 2∀ - 8∀C

Precautions:

Before use, shake the RPR antigen gently.

Samples and reagents should be brought to room temperature before use.

The test card should be preferably stored at room temperature once the kit is opened.

After use the dispensing dropper should be cleaned with distilled water, dried and stored properly.

Procedure:

Dispense 0.5 ml of the sample (plasma or serum) onto a circle of the test card using a clean and dry pipette.

Spread the sample over the entire area using stirrer.

3.3.5.2. Laboratory diagnosis for HIV

Diagnosis of HIV infection is generally made serologically. Some of them are ELISA, HIV dot and Agglutination tests. These tests can be confirmed with a more specific

Reporting results

If there is no pink dot in the HIV-1 and HIV-2 test areas the test is interpreted as negative (non-reactive).

If there is a pink dot in the HIV-1 test area, the test is reactive for HIV-1. The test can be reactive for HIV-2 if the pink dot is seen in the HIV-2 test area and it can also reactive for both HIV-1 & HIV-2 if the pink dot is seen in the HIV-1 and HIV-2 test areas.

If no pink dot is seen in the control area the whole test is invalid. This indicates that there is a procedural error or deterioration of reagents. So the sample should be tested again with a new device and reagents.

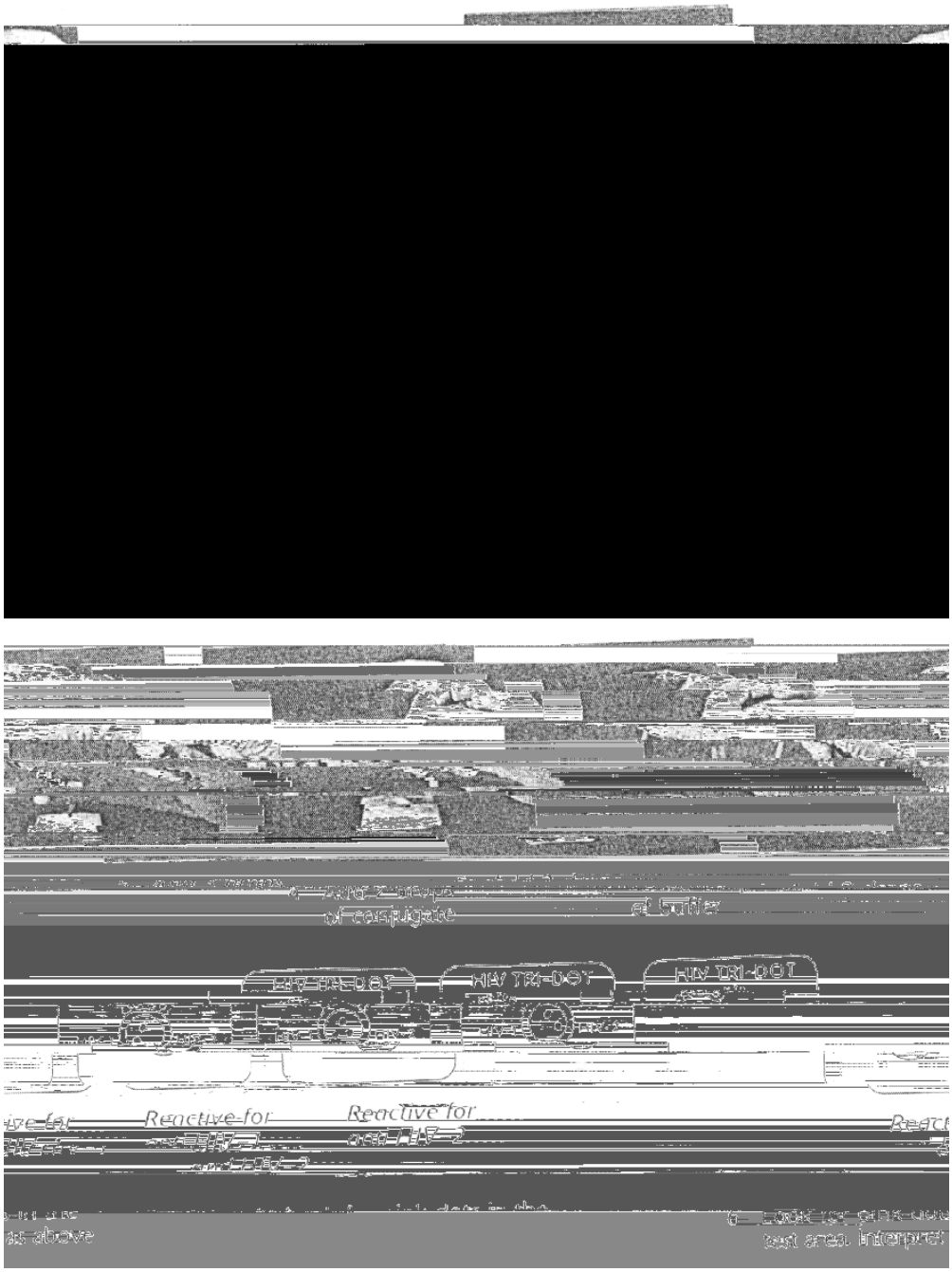

Figure 3.3.1: procedures (Steps) in HIV tri-dot test.

3.3.5.3. Laboratory diagnosis for N.gonnorea

Direct Microscopy

Microscopic examination for N.gonnorea can be made on a stained smear of urethral or cervical discharge preparation.

Examination of stained smear

Procedure:

Prepare a smear from cervical or urethral discharge.

Allow to air dry

Fix the air dried smear with methanol.

Stain with Gram stain technique (see annex I).

Examine under high power (100x) objective

Reporting result:

Report as ‘Gram negative intercellular diplococci is seen’ (per high power field), if they are seen.

Report as ‘No Gram negative intracellular diplococci is seen’ (per high power field) if they are not seen.

Culture

Not applicable at the health center level

3.3.5.4. Laboratory diagnosis of T. vaginalis

Wet mount

Procedure:

Transfer the vaginal discharge collected on a slid. Add a drop of saline and cover it with cover slip.

Examine the preparation immediately after sample collection.

Look for an oval, pyriform or spindle-shaped organism with a size larger than a neutrophil leukocyte and smaller than an epithelical cell.

In fresh specimen the organism (T.vaginalis) is motai.

Reporting result:

Negative for T.vaginalis, if the organism is not seen.

Positive for T.vaginalis, if the organism is seen.

3.3.5.5. Laboratory diagnosis of C.albicans

Direct microscopy

Diagnosis of skin and mucous membrane infection is made by direct visualization of the organism on scrapings following KOH preparation or by Gram's stain.

Examination of stained smear

Procedure:

Smear the exudates or discharge on a clean slide.

Allow air dry.

Gram stain (see Unit 7.3).

Look for yeast cells.

Reporting result:

In positive result Gram positive small, oval budding cell is observed under high power filed.

No Gram negative intracellular diplococci are seen per high power field, if they are not seen.

Negative: if no small, oval budding cell or hyphae seen.

Positive: if hyphae or small, oval budding cell seen.

KOH examination

Procedure:

Place skin scrapings on a slide.

Add a drop of 10% potassium hydroxide.

Apply cover slide.

Examine the preparation under the microscope with the low power objective.

Reporting result:

Negative if no oval, budding yeast cells and psudohyphae are seen.

Positive if budding yeast cells or hyphae are seen

3.3.5.6. Laboratory Diagnosis for C.trachomitis

Culture and serologic tests

Not available at the primary health center level. Even it was available, these tests will not aid in the initial decision to treat the patient, as there is a delay of two or more days in obtaining the results specially for the culture.

3.3.5.7. Laboratory diagnosis of Hepatitis B virus (HBV)

Serologic tests

A wide range of serological tests is now available for the detection of HBV associated antigens, especially HBsAg, in serum collected during the acute stage of infection. But these tests are not available at the primary health center level.

3.3.6. Quality Assurance

Quality assurance is essential in using laboratory techniques if reliable information is to be obtained that can be used to treat patients effectively and control infectious diseases in the community.

The quality control techniques that are performed in the laboratory ensure that resources are not wasted and results are obtained at the earliest possible stage.

The control measures should encompass the pre-test and post-test activities in addition to the control techniques on the methods while performing the test.

Therefore, it is necessary to control:

Specimen collection and transport.

Procedural techniques.

Stains and reagents.

Equipment.

Reporting and recording results.

Individuals who collect specimens should be provided with assistance and written instructions regarding the correct type of specimen to collect, the best time to collect it, and the aseptic method of collection to avoid contamination. Guidelines should also be issued regarding the storage and transport of specimens, especially the use of preservatives and transport media to ensure the viability of pathogens.

A ‘Techniques Manual’ and/or ‘Method Sheets’, which can be displayed in the laboratory should be prepared by the head of department. Such a manual should be simply written, easily available to staff, reviewed regularly and updated as required. The aseptic techniques for the procedural activities should also be provided to avoid occupational hazards.

In consultation with clinical staff and regional laboratory, reporting and recording results should be standardized to ensure reproducibility and avoid differences in interpretation.

Now you are through with the core and satellite modules, but there are still some activities remaining as stated below.

1. Read the task analysis of the different categories of the Health Center Team on Unit 4.
2. Do the pre-test as a post-test.
   N.B: Use a separate answer sheet.
3. Compare your answers of the pre- and post-tests with the answer keys given on Unit 7.3 and evaluate your progress.

3.4. Satellite Module for Community Health Workers

3.4.1. Introduction

3.4.1.1. Purpose and use of module

This satellite module is prepared for the community health worker. It is hoped to provide

2. The most common STIs in Ethiopia are
    A. Gonorrhea
    B. Syphilis
    C. Chancroid
    D. All of the above
3. STIs are transmitted by
    A. Urinating facing towards the moon
    B. Sexual contact
    C. Insects
    D. Water
4. Preventive measures for STI include.
    A. Consistent and correct use of condom
    B. Avoid urinating while facing the moon
    C. Avoid multi sexual practices
    D. A and C are correct
5. The most common cause of urethral discharge syndrom is:
    A. Syphilis
    B. Gonorrhea
    C. Lympho Granloma Venerum
    D. Chancroid

3.4.3. Significance of the Problem

Sexually transmitted infections (STIs) are a major public health problem affecting many people both in developing and developed world.

In developing countries, STIs are responsible for up to 15% of the disease burden in the urban population. In tropical countries STIs rank second to malaria in their socio economic impact. The presence of STIs in

In Ethiopia too, there is an increasing trend in the magnitude and intensity of STIs and HIV/AIDS due to the following factors:

- Many more people living in or traveling to large cities resulting in separating families.
- Many more people are becoming sexually active before marriage.
- Low level of awareness about STI among the public.
- Lack of behavioral change among sexually active individuals.
- The existence of strong link between STIs and the sexual transmission of HIV infection.

STIs affect the young and the productive portion of a community leading to economic and social problems.

3.4.4. Learning Objectives

After reading this satellite module the community health worker will be able to:

- Define sexually transmitted infections
- Recognize STIs as important public health problems.
- List common sexually transmitted infections in the community.
- Explain causes of STIs.
- Recognize that sexually transmitted infections are caused by pathogenic microorganisms.
- Describe the syndromic classification and management approach of the common sexually transmitted infections.
- Recognize the importance of immediate referral of cases to higher health care facilities.
- Explain preventive measures of STIs.

3.4.5. Definition and Description of Sexually Transmitted Infections

Sexually Transmitted Infections are communicable diseases primarily transmitted through sexual contact from a sick to a healthy person. There are more than 20 kinds of organisms (infections) that can be transmitted though unprotected sexual intercourse.

The most common STIs in Ethiopia are:

- Gonorrhea
- Syphilis
- Chancroid
- Lympho granuloma venerum

They are caused by pathogenic microorganisms, which can only be seen under a microscope. STIs are not caused by urinating facing the moon as many people believe in our country.

3.4.6. Risk Factors for the Development of STIs

A healthy person gets into a higher risk of developing STIs, when he/she:

- Is engaged in sexual activity with more than one partner.
- Does not use a condom or uses condoms incorrectly during sexual activity.
- Practices sex with a partner who is symptomatic; that is a person showing the clinical features (sings and symptoms) of STIs.

3.4.7. Syndromic Classification and Management Approach to STIs

Although there are more than 20 microorganisms which can be spread through sexual contact, these different STI tend to cause similar signs and symptoms. For example, discharge from the penis (urethra) or vagina, genital ulcer is common STI symptoms and sings. We call such set of symptoms/signs a syndrome.

The syndromic approach to STIs consists to classification of the main STIs by the observable syndromes they produce. The diseases are classified according to the signs and symptoms (clinical features) they produce. The syndromes are: genital ulcer, vaginal discharge, urethral discharge, lower abdominal pain and inguinal bubo.

3.4.7.1. Genital Ulcer Syndrome (in Men and Women)

The patient complains of sores or ulcers on the genitalia. They may be painful or painless. An ulcer is a break in the continuity of the skin or mucus membrane surface.

The incubation period for genital ulcer varies from 4 days to 13 weeks (usually 1 to 4 weeks). In many developing countries the etiologies of genital ulcer syndrome most frequently found are syphilis and chancroid.

3.4.7.2. Vaginal Discharge Syndrome

The patient complains of discharge from the vagina which is different from normal in color, odour and consistency or amount. It can be associated with vaginal itching, painful urination and pain during sexual intercourse.

Commonly, vaginal discharge syndrome is cause by gonorrhea and other STIs like trichomoniasis and candidiasis. Its incubation period varies from 2 days to 4 weeks.

3.4.7.3. Urethral Discharge Syndrome (In Men)

The patient complains of discharge from the penis with or without painful urination (burning sensation). If no discharge is found, the urethra should be milked to bring the discharge forward.

The most common cause of urethral discharge is chlamydia and gonorrhea. The incubation period for urethral discharge from the penis appears 2 days – 4 weeks after sexual intercourse.

3.4.7.4. Lower Abdominal Pain Syndrome (In Women)

The patient may complain of fever, lower abdominal pain and tenderness as well as vaginal discharge, pain with urination, or pain with sex. Common causes of this syndrome are gonorrheal and chlamydial infections.

3.4.7.5. Inguinal Bubo Syndrome (In Men or Women)

Inguinal bubo is a large swelling of the inguinal lymph nodes which may or may not be discharging. The patient complains of swelling in one or both groin areas. It is usually painful.

The common cause of this syndrome is T.pallidium, C.trachomatis and H.ducrey. The incubation period varies from 10 - 30 days to several months after sexual intercourse.

3.4.8. Complications and problems of STIs

Some of the most common complications of STI include:

If STIs are left untreated it may lead to infertility chronic pain or death in men and women.

Some STIs can be transmitted from mother to infant during pregnancy and at birth.

Can lead to some deafness and blindness in new born children.

The presence of STIs also increases the likelihood of HIV transmission.

Can also cause cervical cancer and abortion.

3.4.9. Management of STIs

Immediate referral of cases and advice to the patient to take his/her partner with him/her for early diagnosis and treatment.

Follow up of cases in terms of treatment compliance.

Encouragement and advice to patients to visit health institutions in case of treatment failure.

3.4.10. Prevention and Control STIs

Sexual abstinence.

Avoid multiple sexual partners.

Consistent and correct use of condoms.

Health education on the causes and modes of transmission of STIs.

Early detection and immediate referral of cases with STIs.

Participate in the follow up of cases:

- treatment compliance
- treatment failure
- partner tracing

3.4.11. Task analysis of Community Health Workers

3.4.11.1. Knowledge objectives and Activities

Learning objectives	Activities
To define STIs	- State that STIs are caused by sexual contact - Mention the common STIs
To describe the causes of STIs	- Explain that STIs are caused by micro-organisms and not by urinating facing the moon.
Recognize the risk factors of STIs	- State that STIs may result from: . multiple sex partners . not using or incorrect use of condoms
To explain the syndromic approach classification of STIs	- Describe the syndromic classification of STIs. - Mention the seven syndromic classifications of STIs.
To Recognize STIs as major health problem	- State STIs as common public health problems in Ethiopia - Enumerate the common complications of STIs - Describe the link between STIs and HIV/ AIDS
To describe the prevention and control of STIs	- Explain the importance of: . abstinence from sexual activity . avoiding multiple sex partners . using condom correctly . partner management - Mention the need for early detection and immediate referral of STI cases - Describe the importance of health education in prevention and control of STIs.

3.4.11.2. Attitude, Objectives and Activities

Learning Objectives	Activities
- To believe that STIs are transmitted from a sick person to a healthy person.	- Accept that STIs are not caused by urinating facing the moon. - Believe that microorganisms are the cause of STIs.
- To accept STIs as important public health problems	- Believe that STIs are a common health problem. - Accept that STIs increase the risk of HIV/AIDS. - Accept the potential complications of STIs. - Emphasize partner tracing
- Appreciate the prevention of STIs	- Give emphasis on early detection and immediate referral of STI cases. - Accept the importance of safe sexual behavior. - Pay emphasis to partner tracing.

3.4.11.3. Practice, Objectives and Activities

Learning Objectives	Activities
- To manage cases of STIs	- Identify cases of STI according to syndromic approach - Refer cases and contacts or partners promptly
- To participate in the prevention and control of STIs	- Give health education to patient and the community on causes, transmission, potential complications and prevention of STIs. - Follow up for: . drug compliance of clients and contacts . treatment failure - Participation in condom promotion and distribution in the community - Advice for HIV/AIDS counseling and testing - Keep records of STI cases - Write reports on STIs

3.5. Take Home Message for Lay Care Givers

3.5.1. Significance of STIs as major health Problems

Sexually transmitted infections (STIs) are a major public health problem affecting many people both in the developing and developed world.

In developing countries, STIs are responsible for up to 15% of the disease burden in the urban population. In tropical countries STIs rank second to malaria in their socioeconomic impact. The presence of STIs increases the chance of acquiring HIV/AIDS.

In Ethiopia too, there is an increasing trend in the magnitude and intensity of STIs and HIV/AIDS due to the flowing factors:

- Many more people living in or traveling to large cities with resultant family separation.
- Many more people are becoming sexually active before marriage.
- Low level of awareness about STIs among the public.
- Lack of behavioral change among sexually active individuals.
- The existence of strong links between STIs and the sexual transmission of HIV infection.

STIs affect the young and the productive portion of a community leading to further economic and social problems.

3.5.2. Definition and description of sexually transmitted infections

Sexually Transmitted Infections are communicable diseases primarily transmitted through sexual contact from a sick to a healthy person. There are more than 20 kinds of organisms (infections) that can be transmitted through unprotected sexual intercourse.

The Most common STIs in Ethiopia are:

- Gonrrhea
- Syphilis
- Chancroid

Lymphogranuloma venereum

They are caused by pathogenic micro organisms, which can only be seen under a microscope. STIs are not caused by urinating facing the moon as many people believe in our country.

3.5.3. Risk factors for the development of STIs

A healthy person develops a higher risk of STIs, when she/he:

Is engaged in sexual activity with more than one partner.

Does not use a condom or uses condoms incorrectly during sexual activity.

Practices sex with a partner who is symptomatic; that is a person showing the clinical features (signs and symptoms) of STIs.

3.5.4. Syndromic classification and management approach of STIs

Although there are more than 20 microorganisms which can be spread through sexual contact, these different STIs tend to cause similar signs and symptoms.

For example, discharge from the penis (urethra) or vagina and genital ulcers are common STI symptoms and signs. We call such a set of symptoms/signs a syndrome.

We can classify the main STIs by the observable syndromes they produce. The diseases are classified according to the signs and symptoms (clinical features) they produce. The syndromes are: genital ulcer, vaginal discharge, urethral discharge, lower abdominal pain and inguinal bubo.

3.5.5. Complications and problems of STIs

Some of most common complications of STIs include:

If STIs are left untreated they may lead to infertility, chronic pain or death in men and women.

Some can be transmitted from mother to infant during pregnancy and at birth.

Can lead to some deafness and blindness in new born children.

The presence of STIs also increases the likelihood of HIV transmission.

Can also cause cervical cancer and abortion.

3.5.6. Management of STIs

Immediate referral of cases and advice to the patient to take his/her partner with him/her for early diagnosis and treatment.

Compliance of cases to treatment.

Encouragement and advice to patients to visit health institutions in case of treatment failure.

3.5.7. Prevention and control STIs

Sexual abstinence

Avoid multiple sexual partners.

Consistent and correct use of condoms

Awareness on the causes and modes of transmission of STIs

Early treatment of cases with STIs

Participate in the follow up of cases

- ¢ treatment compliance

No.	Learning Objectives	Learning activities			
		HO	PHN	ENHS	MLT
4.	To describe clinical features of STI syndromes	-Identify general clinical features of STIs based upon syndromic approach	-Identify general clinical features of STIs based upon syndromic approach	-Identify general clinical features of STIs based upon syndromic approach	-Identify general clinical features of STIs based upon syndromic approach
5	To identify risk factors for the transmission of STIs	- Enumerate the risk factors for STIs - Explain the relationship between STIs and HIV/AIDS	- Enumerate the risk factors for STIs - Explain the relationship between STIs and HIV/AIDS	- Enumerate the risk factors for STIs - Explain the relationship between STIs and HIV/AIDS	- Enumerate the risk factors for STIs - Explain the relationship between STIs and HIV/AIDS - Enumerat -1.4 a Tldromic a Tldromic

No.	Learning objectives	Learning activities			
		HO	**PHN**	**ENHS**	**MLT**
7.	Describe advantages of syndromic approach in STI management	-List the advantages of syndromic STI case management - List the importance of flow chart in the management of STIs - Identify the different flow charts for different STIs syndromes	-List the advantages of syndromic STI case management - List the importance of flow chart in the management of STIs - Identify the different flow charts for different STIs syndromes	-List the advantages of syndromic STI case management - List the importance of flow chart in the Management of STIs	-List the advantages of syndromic STI case management - List the importance of flow chart in the Management of STIs
8	Describe the main features of syndromic case management	- Describe the importance of history taking, and physical examination. - Mention different laboratory investigation which enables to diagnose STIs	- Describe the importance of history taking, and physical examination. - Mention different laboratory investigation which enables to diagnose STIs	-Mention the different methods of diagnosis in STIs	-Enumerate different laboratory procedures and interpretations of results.

No.	Learning Objectives	Learning activities			
		HO	**PHN**	**ENHS**	**MLT**
9.	To describe prevention and control measures of STIs	- Explain different methods of prevention and control of STIs.	- Explain different methods of prevention and control of STIs.	- Explain different methods of prevention and control of STIs.	- Explain different methods of prevention and control of STIs.
10.	To recognize the role played by each category of the health center team including community health workers (CHW)	- Mention the role played by each category of health center team including CHW	- Mention the role played by each category of health center team including CHW	- Mention the role played by each category of health center team including CHW	- Mention the role played by each category of health center team including CHW

Table 4.2: Attitude, Objectives and Activities

No.	Learning Objectives	Leaving Activities			
		HO	PHN	EHS	MLT
1	To appreciate the public health importance of STIs in Ethiopia	- Believe that STIs are major health problems in Ethiopia	- Believe that STIs are major health problems in Ethiopia	- Believe that STIs are major health problems in Ethiopia	- Believe that STIs are major health problems in Ethiopia
2	To believe that STIs can lead to serious complications	- Realize the need for early detection and treatment of STIs to prevent complication	- Realize the need for early detection and treatment of STIs to prevent complication	- Realize the need for early detection and treatment of STIs to prevent complication	- Realize the need for early detection and treatment of STIs to prevent complication
3	To believe that some STIS can be recognized by their clinical features	- Appreciate the clinical features of different STIs	- Appreciate the clinical features of different STIs	- Appreciate the clinical features of different STIs	- Appreciate the clinical features of different STIs
4.	To believe that STIs are caused by specific micro-organisms	- Believe that STIs are caused by micro-organisms	- Believe that STIs are caused by micro-organisms	- Believe that STIs are caused by micro-organisms	- Believe that STIs are caused by micro-organisms
5	To believe that there are risk factors for the transmission and acquisition of STIs.	- Appreciate that there are preventable risk factors which predispose a person to STIs.	- Appreciate that there are preventable risk factors which predispose a person to STIs.	- Appreciate that there are preventable risk factors which predispose a person to STIs.	- Appreciate that there are preventable risk factors which predispose a person to STIs.

No.	Learning Objectives	Leaving Activities			
		HO	PHN	EHS	MLT
6	Appreciate advantages that syndromic case management offers	- Appreciate using flow charts in management of STIs.	- Appreciate using flow charts in management of STIs.	- Appreciate using flow charts in management of STIs.	- Appreciate using flow charts in management of STIs.
7.	To believe that syndromic approach is an appropriate method of diagnosing STIs in developing countries	- Believe that syndromic approach is an effective method in diagnosing STIs	- Believe that syndromic approach is an effective method in diagnosing STIs	- Believe that syndromic approach is an effective method in diagnosing STIs	- Believe that syndromic approach is an effective method in diagnosing STIs
8	To believe that there are specific diagnostic methods of STIs	- Believe that STIs can be diagnosed with specific methods	- Believe that STIs can be diagnosed with specific methods	- Believe that STIs can be diagnosed with specific methods	- Believe that STIs can be diagnosed with specific methods
9	To be convinced that STIs are preventable	- Believe that STIs can be prevented	- Believe that STIs can be prevented	- Believe that STIs can be prevented	- Believe that STIs can be prevented
10.	To appreciate the role/task played by the health center team members in management, prevention and control of STIs	- Get convinced that each health center team member has a role to play in STI management	- Get convinced that each health center team member has a role to play in STI management	- Get convinced that each health center team member has a role to play in STI management	- Get convinced that each health center team member has a role to play in STI management

Table 4.3: Practice, Objectives and Activities

No.	Leaving Objectives	Learning Activities			
		HO	**PHN**	**EHS**	**MLT**
1	- To identify possible complications of STI	- Assess for complications resulting from STIs - Manage complications of STIs - Educate about complications of STIs	- Assess for complications resulting from STIs - Manage complications of STI - Educate about complications of STIs	- - - Educate about complications of STIs	- - - Educate about complications of STIs
2	- To enlighten the community on the public health importance of STIs	- Carry out health education on the the public health importance of STIs	- Carry out health education on the importance of STIs	- Carry out health education on the importance of STIs	- Carry out health education on the importance of STIs
3	- To assess the clinical features of STIs	- Carry out physical examination of STI - Give health education regarding prominent signs and symptoms of STIs	- Carry out physical examination of STI patients - Give health education regarding prominent signs and symptoms of STIs	- - Give health education regarding prominent signs and symptoms of STIs	- - Give health education regarding prominent signs and symptoms of STIs
4	- To identify risk factors of STIs	- Take history to identify risk factors for STIs - Conduct community surveys on pre-disposing factors of STIs - Give health education on risk factors of STIs	- Take history to identify risk factors for STIs - Conduct community surveys on pre-disposing factors of STIs - Give health education on risk factors of STI	- - Conduct community surveys on pre-disposing factors of STIs - Give health education on risk factors of STIs	- - Conduct community surveys on pre-disposing factors of STIs - Give health education on risk factors of STIs dispe009 T

No.	Leaving Objectives	Learning Activities			
		HO	**PHN**	**EHS**	**MLT**
6.	- To conduct different STIs diagnostic methods	- Carry out history taking and physical examinations to diagnos STIs - Write specific laboratory test requests - Interpret laboratory results - Give health education on diagnosis methods of STIs	- Carry out history taking and physical examinations to diagnose STIs - Write specific laboratory test requests - Interpret laboratory results	- - - Give health education on diagnostic methods of STIs	- Conduct specific laboratory tests for STIs - Record and report results - Do quality control tests - Give health education on diagnostic methods of STIs
7.	- To carry out preventive and control measures of STIs	- Give health education on prevention and control measures. - Detect cases and contacts early and treat - Counsel and demonstrate proper condom utilization	- Give health education on prevention and control measures. - Detect cases and contacts early and treat - Counsel and demonstrate proper condom utilization	- Give health education on prevention and control measures. - Educate the advantages of prompt visits to health institutions and the need for contact tracing. - Educate and demonstrate proper condom utilization	- Give health education on prevention and control measures. - Educate the advantages of prompt visits to health institutions and the need for contact tracing. - Educate and demonstrate proper condom utilization
8.	- To practice team work in management, prevention and control of STIs	- Exercise team approach in management, prevention and control of STIs	- Exercise team approach in management, prevention and control of STIs	- Exercise team approach in management, prevention and control of STIs	- Exercise team approach in management, prevention and control of STIs

UNIT FIVE

GLOSSARY AND ABBREVIATION

Glossary

Counseling: Counseling is an ongoing dialogue and relationship between client or patient and counselor

Invitro: In the test tube, chemical reaction, temperature, etc., occurring there in.

Invi-vo: In the living being, in the living body referring to vital chemical processes, etc as opposed to occurring in the test tube.

Syndrom: Aggregate of symptoms associated with any morbid process.

Abbreviation

CMV: Cytomegalo virus

ELISA: Enzyme Linked Immuno Sorbent Assay

FTA: Fluoresent Treponemal Antibody

HBV: Hepatitis B virus

HIV: Human Immunodeficiency Virus

IUD: Intra Uterine Devise

LMP: Last Menstrual Period

PQRST: Pain type, Quality of pain, Radiation of pain, and relief of pain, Symptoms associated with pain, Timing of pain.

RPR: Rapid Plasma Region

STI: Sexually Transmitted Infection

TPHA: Treponema Pallidum Heamagglutination

VDRL: Veneral Disease Research Laboratory

WHO: World Health Organization

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UNIT SEVEN

ANNEX

7.1. Answer key to Pre- and Post-test

Part I: Answer Keys for the pre- and pos- tests for all categories of the Health Center Team

1. True
2. False
3. False
4. False
5. True
6. True
7. False
8. False
9. True
10. True
11. True
12. False
13. False
14. C
15. E
16. E
17. C
18. E
19. Urithral discharge and burning on urination
20. Pelivic inflammatory diseases (PID)
21. N. gonorrhea and C.trochomatis

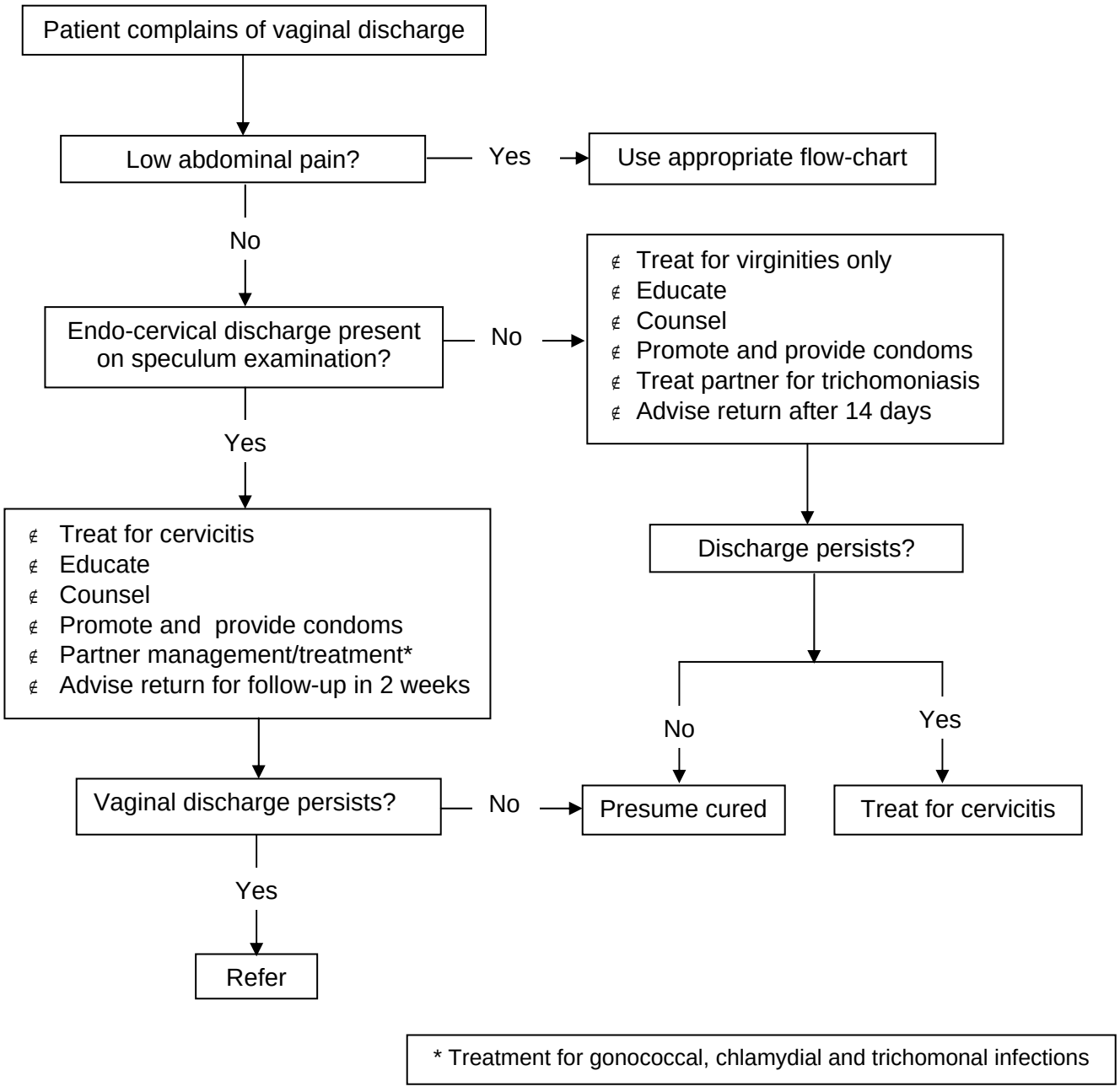
22. - Many more people live in or travel to large cities separated from their families.
    - Many people become sexually active before marriage.
    - The impact of drug resistance
    - Low level of awareness about STI
    - Lack of behavioral change among sexually active individuals
23. Sexual transmitted infections are infections that are passed from one person to another through sexual contact.
24. - Is simple, inexpensive, rapid and can be implemented in large scale
    - Requires minimum training and can be used a broadTwn.0001 Tw

Part II: Answer Keys for the pre- and pos-tests specific to each of the professional categories.

I. For Health Officer

1. True
2. False
3. True
4. True
5. B
6. B
7. A
8. B
9. E
10. C
11. A
12. C
13. A
14. Chancre
15. Genital herpes
16. N.gonorrhea, T.pallidum, C.trachoma

Flow Chart 2-2: Vaginal discharge syndrome (with speculum examination)



Treatment for vaginal discharge syndrome:

If the risk assessment is negative, treat the patient with Metronidazole plus Nystatin or Clotrimazol.

In the presence of risk factors treat with Ciprofloxacin 500mg orally single dose

Or

Spectinomycin 2gm 1m single dose

Or

Ceftriaxone 250mg im single dose

Or

Norfloxcin 800mg orally single dose

Plus

Doxycyclline 100gm orally twice daily for 7 - 14 days

Or

Tetracycllin 500mg orally four times daily for 7 days

Or

Erythromycin 500mg orally four times daily for 7 days

Plus

Metronidazole 2gm orally single dose

Or

Metronidazole 500mg orally four times daily for 10 days

Plus

Clotrimazole vaginal suppositories 200mg at bed time for 3 days

Or

Nystatine 100,000 units (one pessary) inserted intra-vaginally daily at night for 14 days.

N.B.

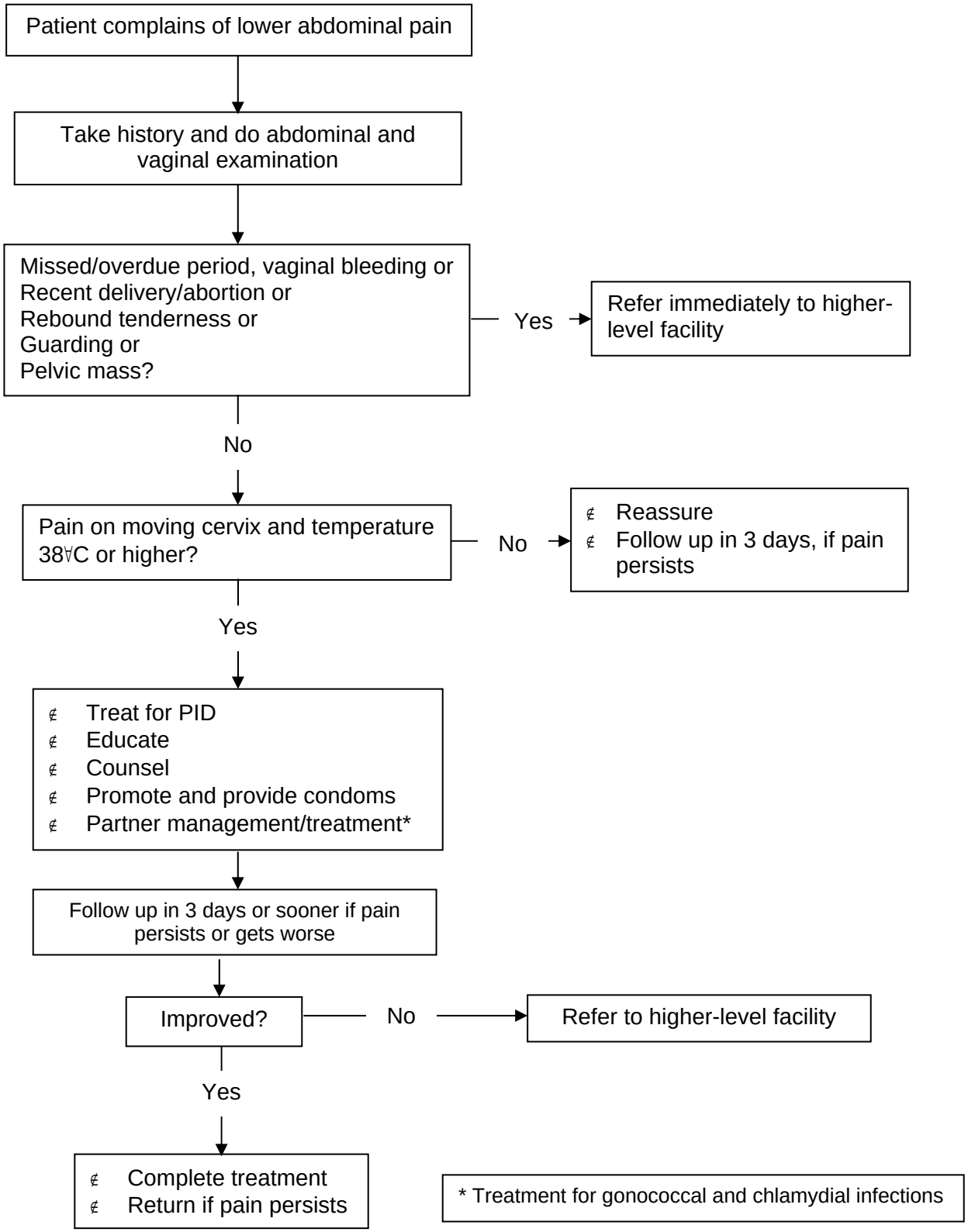
Ciproflaxacin, Doxycyclline and TTC should not be used in pregnancy

Except in Candidiasis and bacterial vaginosis, which are not usually sexually transmitted, partners should be included in the management of all causes; mainly gonococcal, chlamydial, and trichomonal infections should be treated.

Treatment for genital ulcers syndrome:

Treat for Syphilis:

Flow Chart 4: Lower Abdominal Pain in the Female



Treatment for lower abdominal pain syndrome in the female:

Treatment should cover gonococcal, chlamydial and anaerobic bacterial infections.

Ciprofloxacin 500mg orally single dose

Or

Norfloxacin 800mg orally single dose

Or

Spectinomycin 2gm i.m single dose

Or

Ceftriaxone 250mg i.m single dose

Plus

Doxycycline 100mg orally twice daily for 14 days

Or

Tetracycline 500mg orally four times daily for 14 days

Or

Erythromycin 500mg orally four times daily for 14 days

Plus

Metronidazole 400mg orally twice daily for 14 days

Recent male sexual contacts should be treated for Gonorrhea and chlamydial infections.

Flow chart 5: Scrotal swelling

Injury to scrotum?

Swelling scrotum?

- ¢ Reassure patient/educate
- ¢ Promote and provide condoms

- ¢ Treat for gonorrhea and chlamydia
- ¢ Educate
- ¢ Counsel
- ¢ Promote and provide condoms
- ¢ Partner management/treatment
- ¢ Return in 14 days

Treatment for scrotal swelling syndrome

Treat the patient for gonococcal and Chlamydial infection:

Ciprofloxacin 500mg orally single dose

Or

Norfloxacin 800mg orally single dose

Or

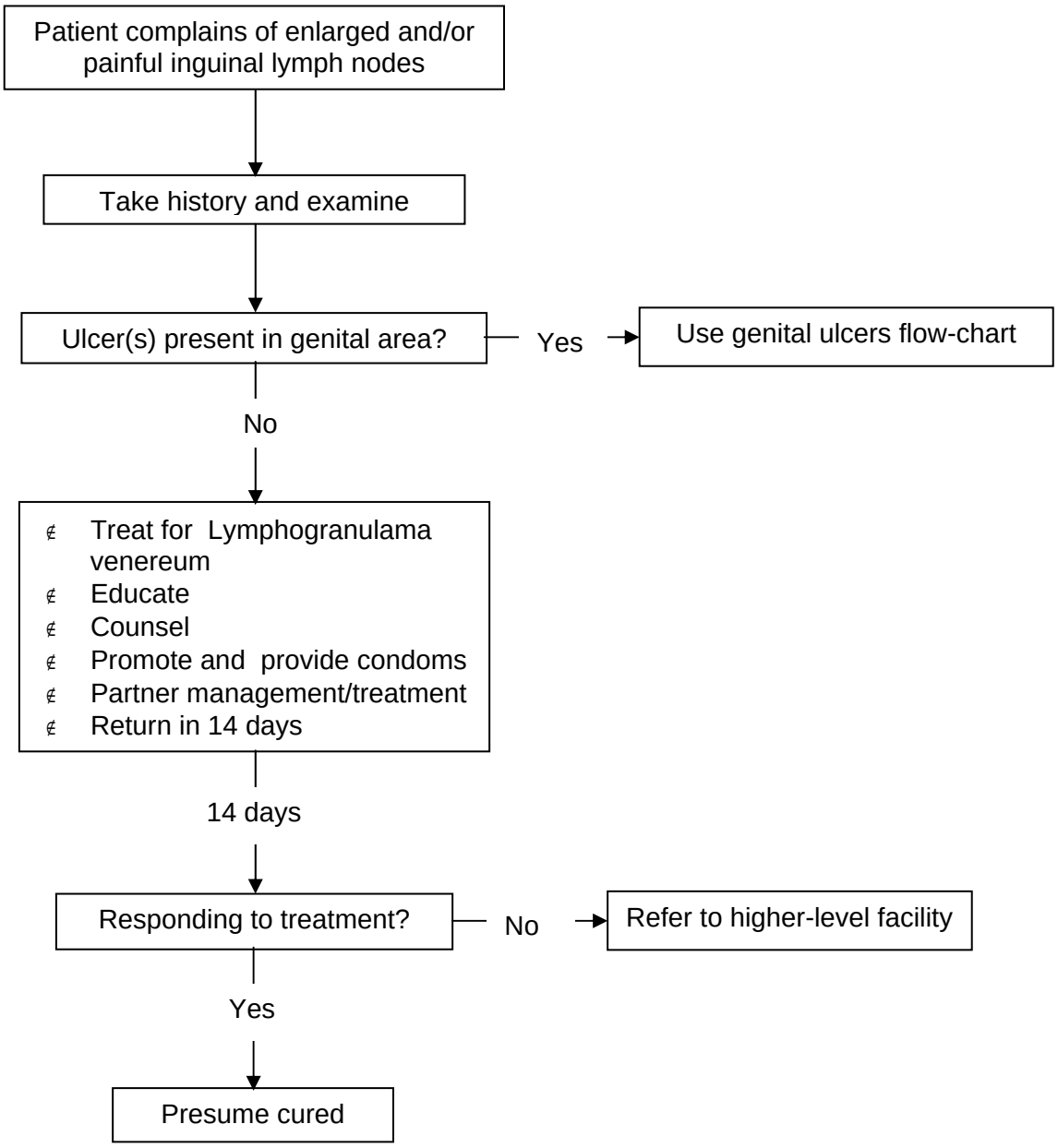
Spectinomycin 2gm im single dose

Or

Ceftriaxone 250mg im single dose

Plus

Flow Chart 6: Inguinal Bubo



Treatment for inguinal bubo syndrome:

If inguinal bubo with genital ulcer, treat the patient with:

Benzathine penicillin G 2.4 million IU im single dose

Plus

Erythromycin base 500mg orally four times daily for 3 weeks

Or

Cotrimoxazole 2 tablets orally twice daily for 15 days (480mg).

If inguinal bubo with no genital ulcer treat the patient with:

Tetracycline 500 mg orally four times daily for 14 days.

Or

Erythromycin 500mg orally four times daily for 14 days.

If the bubo become fluctuant pus should be aspirated with a needle every third day until it is dry. The aspiration should be done through a normal skin.

0 TDlymp(c)-de.tabl4(r)2725.26.1y. The aspirati

Treatment for Ophtalmia neonatorum

Ceftriaxone 50 mg/kg body weight i.m single dose (maximum 125mg).

Or

Spectinomycin 25 mg/kg body weight i.m single dose (maximum 75 mg).

Plus

Erythromycin 50 mg/kg body weight per day orally in four divided doses for 14 days.

7.3. Gram Staining Technique

1. Fix the dried smear using chemical or heat fixation technique.
2. Cover the fixed smear with crystal violet stain for 30 - 60 seconds.
3. Rapidly wash off the stain with clean water. If the tap water is not clean, use filtered water or clean boiled rain water.
4. Tip off all the water, and cover the smear with Lugol's iodine for 30 - 60 seconds.
5. Wash the iodine with clean water.
6. Decolorize rapidly (few seconds) with acetone - alcohol. Wash immediately with clean water.
7. Cover the smear with neutral red (safranin) stain for 2 minutes.
8. Wash the stain with clean water.
9. Wipe the back of the slide clean and place in a draining rack -.00.1e smearto0

Examdine0.1e smearmfi