

- Recurrent chest pains that are often poorly defined.
- Contact with a tuberculous adult
- Unresponsive failure to thrive
- Isolated or generalised lymphadenopathy
- Recurrent subacute intestinal obstruction
- Persistent lobar consolidation/collapse shadows on chest x-ray
- Straw coloured high protein non-purulent pleural, pericardial or ascitic fluid
- Monoarthritis
- Erythema nodosum

Diagnosis

Every effort must be made to get microbiological or pathological confirmation. Acid fast bacilli (AFB) should be looked for in induced sputum, and gastric aspirates may also show AFBs. A reactive Mantoux test greater than 5mm is suggestive of TB. Histologic examination of lymph node and liver biopsies and pleural, pericardial, synovial and peritoneal biopsies may be diagnostic. Lymph node aspirates should be examined for AFBs. Bone marrow aspirates should also be examined for AFBs.

All material should be sent for microscopy, culture and sensitivity in order to monitor for multi-drug resistant TB.

If TB is strongly suspected and laboratory tests do not confirm the diagnosis there is room for a trial of TB therapy provided this is carried out in controlled circumstances and for a period not exceeding two months and after consultation with a specialist.

Treatment

Follow the National TB Guidelines.
Identify and treat the adult from whom the child got TB and other family members who are at risk.

25.3.5 Suppurative lung disease and bronchiectasis in children aged 2 to 16 years

This may be suspected clinically in children with a productive cough that is worse in the mornings and on going to bed. There may be persistent rales in one or more lobes of the lung, and there may be lung fibrosis with tracheal traction to one side of the chest. Chest x-ray may show the lesions but it is best diagnosed on CT scan of the chest with or without contrast. Sputum examination and culture may reveal organisms such as *Pseudomonas*, *Klebsiella* or *Staphylococcus*.

Treatment is with chest physiotherapy for drainage and crystalline penicillin, ampicillin, chloramphenicol or gentamicin are given for 10 days or more. The child should be referred for specialist opinion and management.

25.3.6 Tuberculosis

Both acute and chronic tuberculosis occur commonly in children with HIV infection. Tuberculosis has always been a difficult diagnosis to make in children and the problem is more complex in children with HIV infection as a number of conditions that occur in HIV infected children mimic TB. These include HIV related failure to thrive, unexplained fever and chronic cough. In addition immunosuppressed persons may have an unreactive Mantoux test. Tuberculosis accelerates the progress to AIDS and HIV makes Tuberculosis worse. *A high index of suspicion for TB needs to be maintained at all times*. The diagnosis and case finding would be greatly facilitated if contact tracing for TB was efficient.

In children under 5 years treatment for latent tuberculosis is recommended as the risk of progression of the primary complex is higher than in adults.

Suspect TB in the presence of the following:

- Persistent pyrexia despite treatment with antibiotics and cotrimoxazole
- Persistent cough of more than three weeks,
- Unexplained loss of appetite and weight
- Abnormal episodes of sweating,

such as, missed meningitis and empyema and investigate for tuberculosis.

- If not totally better by 10 days consider commencing antituberculous treatment and refer the child for specialist opinion
- Check the HIV status and if positive send home on PCP prophylaxis.

25.3.3 Children 2-16 years of age with severe pneumonia

- Treat with crystalline penicillin or ampicillin or amoxycillin
- If not responding add gentamicin and high dose cotrimoxazole
- Look for TB and other infections
- If not improving after 10 days refer the child for specialist opinion

Steroid use

The use of steroids in children with pneumonia remains a controversial topic as it is possible that CMV infection and TB may be disseminated and worsened in children with these infections. Studies are currently underway to determine whether steroids have a beneficial effect and until such a time that the results of such studies are known it is recommended that steroids in the form of hydrocortisone or prednisolone be used only in desperately ill children:

Prednisolone 2mg/kg/day in two divided doses orally.

25.3.4 Pulmonary lymphoid hyperplasia

This is a slowly progressive lung disease whose aetiology is unknown. It is an AIDS-defining illness and is usually seen after the first year of life. It is often associated with parotid enlargement, generalised lymphadenopathy, hepatosplenomegally and digital clubbing. Children are usually well though in severe cases they may have chronic cough, progressive breathlessness and getting fatigue with exercise. Chest X-ray may look like miliary tuberculosis and the X-ray features do not change with TB treated. Cor pulmonale may complicate its course. Such children should be referred for specialist opinion.

previously) and consider changing the crystalline penicillin/ampicillin to chloramphenicol or cephalosporin,

- If the child is still not better and is spiking temperatures after 10 days, consider the addition of anti-tuberculous treatment
- Always give supportive therapy described in the box below: Supportive therapy is always critical

Supportive therapy

- Oxygen by headbox, nasal prongs, mask.
- If very cyanosed and able to monitor IV fluids give 75mls per kg per 24 hours of 1/2 dextrose darrows, Maintelyte or neonatolyte.
- If unable to monitor fluids pass a nasogastric tube and give Expressed breast milk at 80-100ml per kilogram per day 3 hourly.
- Feed by cup once improvement has occurred after 48 hours.
- If frothing with acute pulmonary oedema give stat dose of frusemide 0.5mg/kg IV or IM followed by 1mg/kg PO.

- If the child is improving continue to treat with high-dose cotrimoxazole for a minimum of 21 days and send home on cotrimoxazole prophylaxis for PCP in those whose HIV status is positive or unknown. Start tapering off steroid dose after 7 days.

25.3.2 Children 12-24 months with severe pneumonia

- Treat with crystalline penicillin/ampicillin and gentamycin
- Review after 48 hours
- If the child is improving, continue treatment for a total of 10 days
- If the child is not improving, add steroids as above and high-dose cotrimoxazole to the regimen and look for other causes of problems,

25.2.6 Dermatologic manifestations

- Severe seborrhoeic dermatitis
- Zoster
- Generalised fungal dermatitis
- Kaposi's Sarcoma
- Extensive perineal or skin warts

25.2.7 General Infections

- Children with HIV have a tendency to recurrent bacterial infections which may need treatment with antibacterials for longer period than for non-HIV children.
- Daily Cotrimoxazole prophylaxis in symptomatic HIV children may reduce morbidity and hospital admissions and prolong life.

25.3 The respiratory system in children with HIV

In the first year of life respiratory infections are the commonest cause of morbidity and mortality. PCP and CMV dominate the picture in the first 6 months while bacterial infections and PCP in that order dominate the picture from the second 6 months of life. After the first year of life recurrent bacterial infections are the common causes of morbidity and mortality. Both acute and chronic tuberculosis are found in children of all age groups. Mixed infections occur commonly.

25.3.1 Management of severe and very severe pneumonia in high (10% or more) HIV prevalence areas

- Admit the child.
- Treat with crystalline penicillin/ ampicillin and gentamycin given IV and high dose cotrimoxazole given orally.
- Give steroids 2mg/kg/day once daily
- If there is no improvement after 5 days think of other conditions, do a lumbar puncture, arrange for a chest x-ray (if not done

25.2.2 Respiratory system

- Severe /very severe pneumonia in a child 2-12 months of age.
- LIP/PLH as diagnosed on chest x-ray - persistent generalised miliary like nodular pattern in a well child
- Chronic suppurative lung disease

25.2.3 Cardiovascular system

- Cor pulmonale
- Cardiomyopathy

25.2.4 Gastrointestinal system

- Persistent or recurrent diarrhoea: at least two loose stools a day for >30 days
- Persistent hepatomegaly/splenomegaly in the absence of any other condition other than HIV
- Acquired rectovaginal fistula

25.2.5 Central nervous system

- Failure to attain, or loss of, developmental milestones or loss of intellectual ability
- Acquired microcephaly demonstrated by head circumference measurements or brain atrophy as seen on CT scan
- Acquired symmetric motor deficit manifested by two or more of the following, paresis, pathological reflexes, ataxia, or gait disturbance, increased muscle tone
- Recurrent bacterial meningitis in the absence of a predisposing factor
- Cryptococcal meningitis,

In children HIV infection may be suspected if:

- The child's mother is known to be HIV positive,
- One or both parents have had tuberculosis or are known to be chronically ill
- One or both parents are dead
- One or more siblings are known to be chronically ill or have died
- Child has one or more of the symptoms listed below:

25.2.1 General clinical features

The following symptoms and signs are suggestive of HIV if they occur in the absence any known concurrent illness:

- Growth failure in a child less than six months who is fully breastfed.
- Growth failure lasting three months or more.
- Severe stunting in a child less than 12 years.
- Child falls below the 5th percentile on the weight for height chart on 2 consecutive measurements taken 30 days or more apart
- Fever lasting more than one month, recurrent or continuous.
- Serious recurrent bacterial conditions, septicaemia, pneumonia, bone or joint infection, abscess of an internal organ or body cavity.
- Generalised lymphadenopathy - lymph nodes at two or more sites measuring at least 0.5cm and present for more than 1 month
- Parotid enlargement lasting more than one month
- Severe dental caries in an African child
- Oral and oral pharyngeal candidiasis in a breastfed child older than one month
- Oesophageal candidiasis.
- Finger clubbing in the absence of congenital heart disease

25. PAEDIATRIC HIV INFECTION

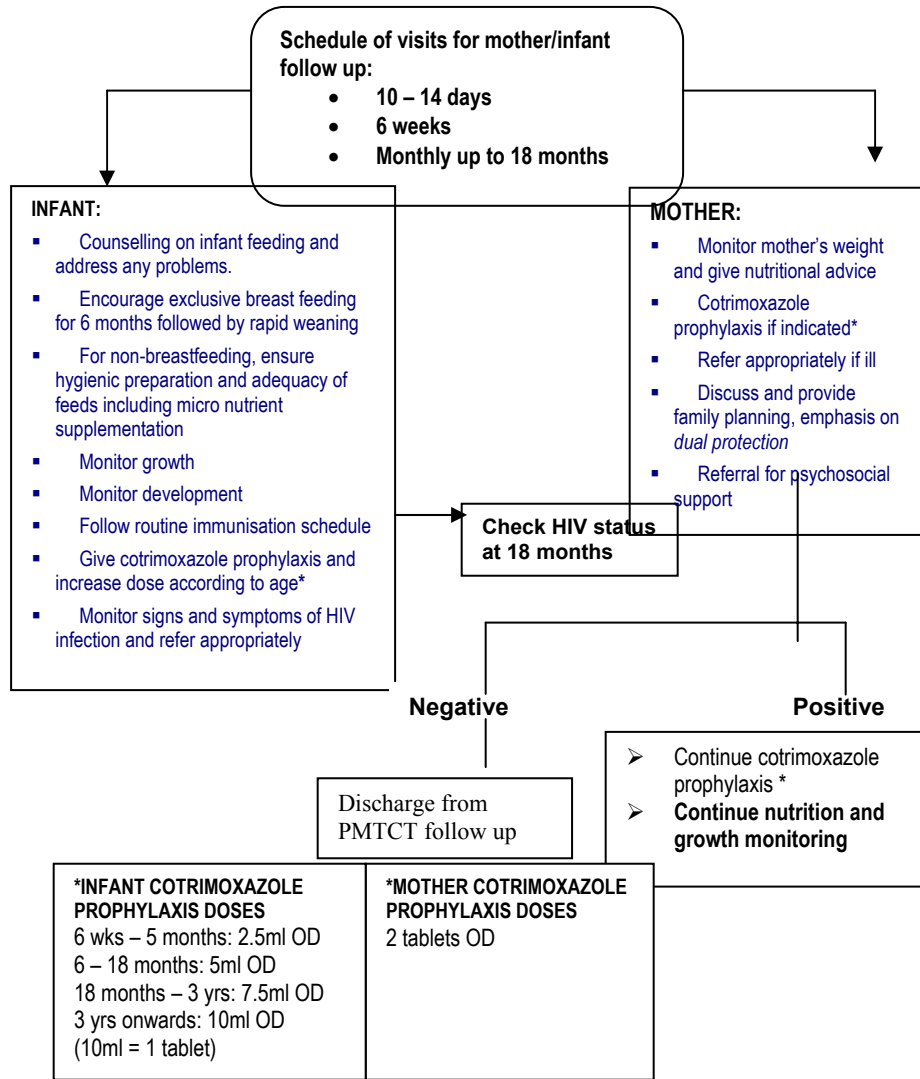
25.1 Introduction

30-40% of pregnant women in Zimbabwe carry HIV and 30-40% of them will pass on the infection to their child during pregnancy or breastfeeding. 50-60% of childhood admissions to Hospital are HIV related.

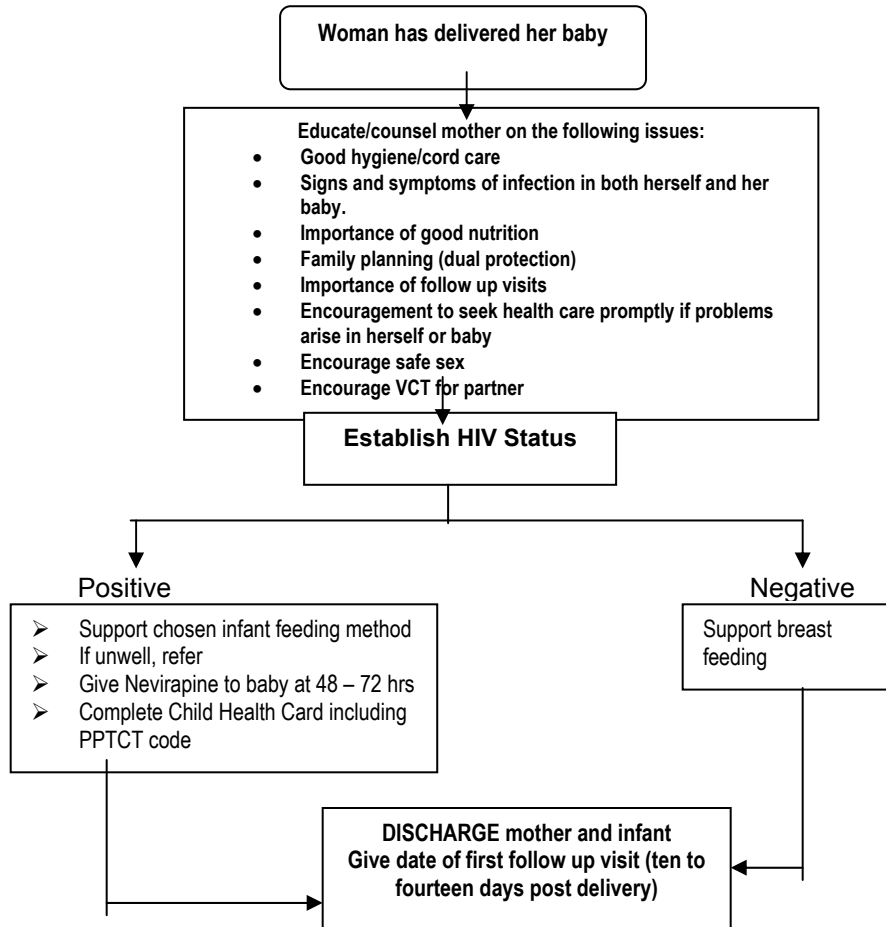
25.2 Diagnosis of HIV infection in children

- Under the age of 18 months it is difficult to distinguish the child who is actually infected with the virus from the one who is just carrying maternal antibody using the HIV tests available in Zimbabwe. No totally satisfactory clinical diagnostic criteria have been established except in the presence of recognizable AIDS defining illnesses.
- It is important to take a good history and carry out a thorough examination.
- If HIV is suspected then precounseling is important before an HIV test is done.
- After 18 months of age a positive HIV test is diagnostic of HIV disease in a child. Clinical suspicion of HIV disease should always be confirmed by an HIV anti body test at or after 18 months of age.
- Many conditions in a developing country context are common in both the HIV infected and the non infected :- malnutrition, Tuberculosis, persistent diarrhoea, generalised lymphadenopathy.
- The presence of any 2 of the conditions listed below and positive HIV serology should lead to a suspicion of HIV infection till proved otherwise at 18 months till proved otherwise.

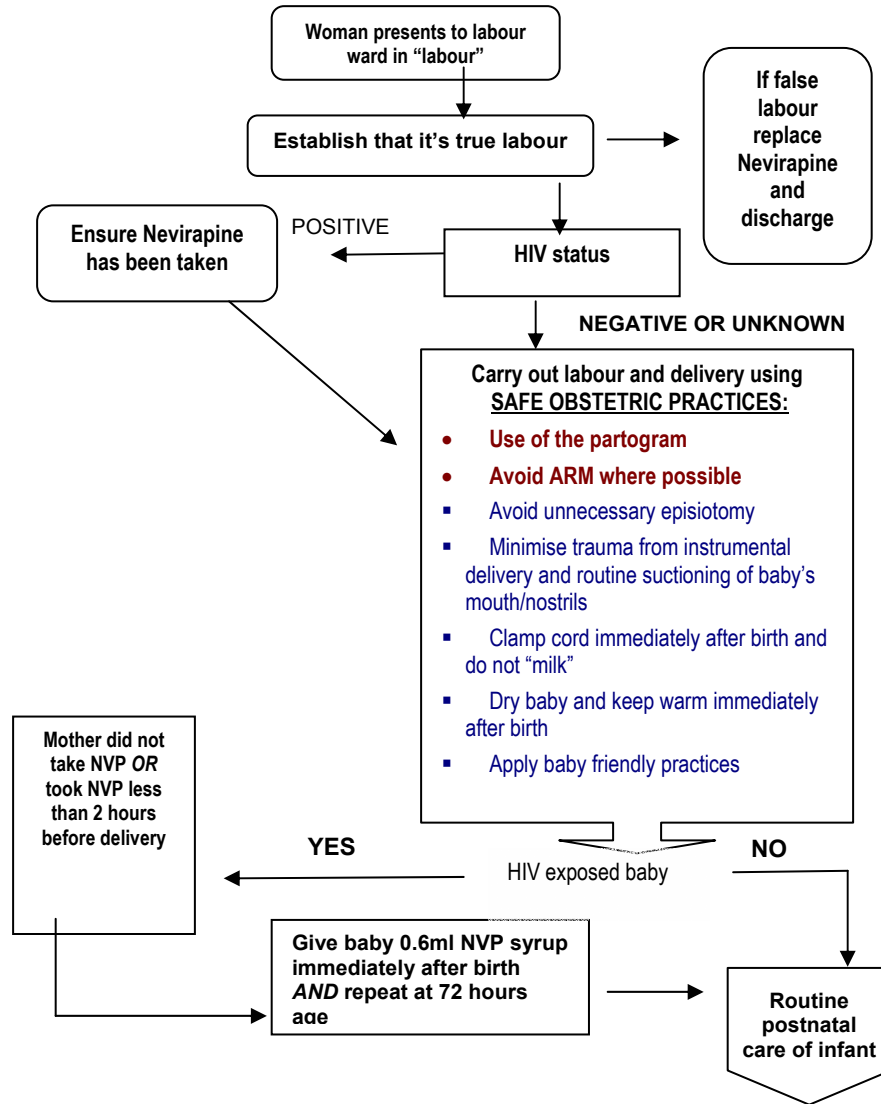
24.5 Summary of long term follow up & care



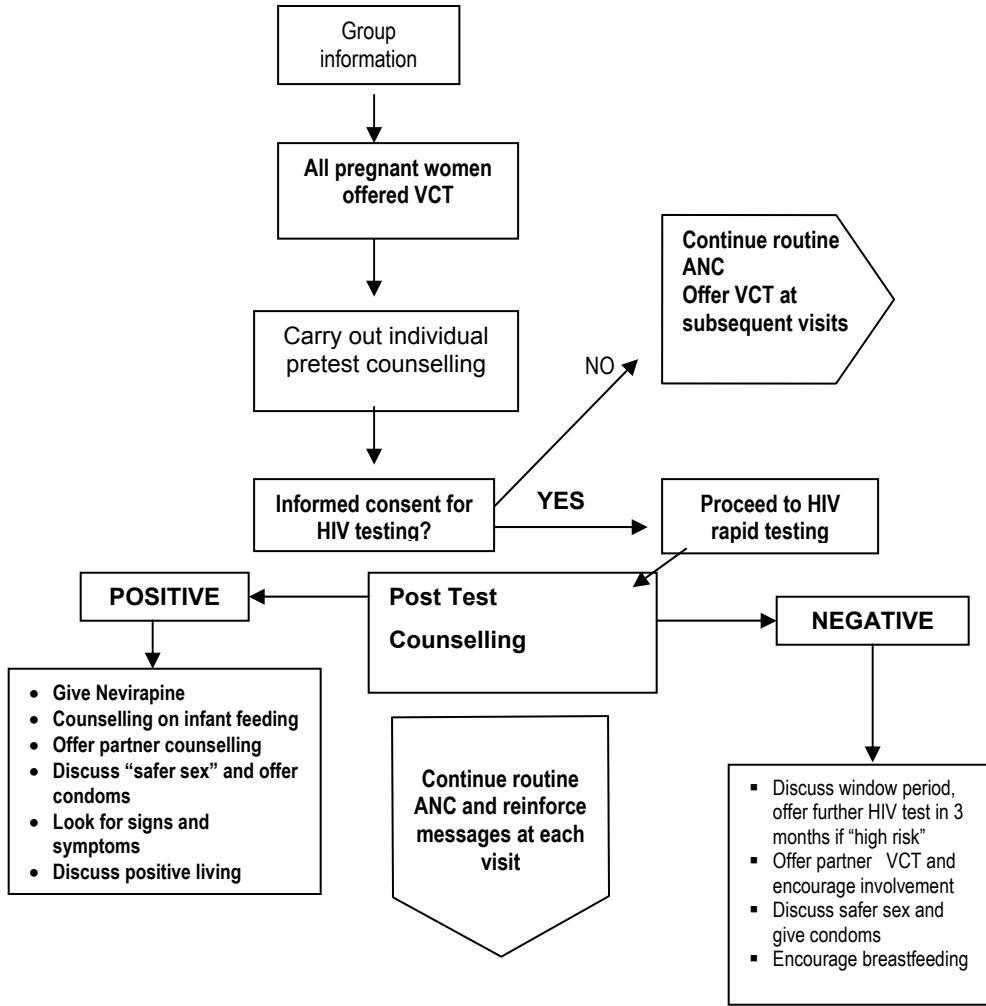
24.4 Summary of post natal practices



24.3 Summary of practices during labour and delivery



24.2 Summary of antenatal care practices



24. PREVENTION OF MOTHER-TO-CHILD TRANSMISSION OF HIV INTERVENTION

24.1 Overview of PMTCT interventions

Prevention of mother-to-child transmission (PMTCT) of HIV is one of the key HIV prevention strategies in Zimbabwe's national response to the HIV/AIDS epidemic. Mother-to-child transmission (PMTCT) of HIV is the most significant source of HIV infection in children below the age of 15 years. Over 90% of HIV infection in infants and children is due to PMTCT.

About 30 to 35% of pregnant women are HIV positive. Without any PMTCT intervention, about a third of the HIV infected women will pass the virus to their babies. It is estimated that about 20% of the infected babies become infected during pregnancy, 60% during labour and delivery, and 20% after birth through breast-feeding. Most infections therefore occur during labour and delivery.

The goal of Zimbabwe PMTCT is to reduce PMTCT of HIV infection, thereby leading to reduction of infant morbidity and mortality.

The Four Main Strategies for PMTCT in Zimbabwe are:

- Primary prevention of HIV infection in Women of childbearing age and their partners.
- Prevention of transmission of HIV to the infant during pregnancy and breastfeeding
- Prevention of unwanted pregnancies in HIV infected women.
- Care and Psychosocial support to HIV infected women and their families

PMTCT practices need to be carried out during the antenatal period, labour and delivery and post-natal period including after hospital / clinic discharge.

related to disease process	management and complications, and referring to tangible psychosocial support. Self-care strategies including use of condoms
Anxiety and distress related to stigma	Find out the source of anxiety. Counsel according to the client's needs
Vaginal discharge due to STI, bleeding,	Perineal care, relevant antibacterial creams, use of antiperspirant deodorants
Pruritis related to vaginal discharge, herpes, or unhygienic practices	General hygiene, antimicrobial vaginal pessaries, perineal care
Fluid volume deficit related to vomiting, diarrhoea or excessive sweating	Encourage to drink at least 8 glasses of water per day. If she cannot tolerate this amount of water, other drinks or fluids may be taken according to preference.
Fluid volume excess related to generalised oedema	Administer prescribed diuretics. Encourage exercise especially of the lower limbs. Elevate limbs when sitting down
Altered self concept	Counseling
Altered role concept as mother and wife	Counseling
Self-care deficit	Counseling, assistance with activities of daily living

23.8.4 Bacterial Vaginosis

About 50% of HIV-infected women will present with vaginal fishy smelling discharge due to this condition. The organisms commonly associated with bacterial vaginosis are anaerobic bacteria such as *Gardnella vaginalis*, *Bacteroides spp*, *Mobiluncus* and *Mycoplasma hominis*. Diagnosis is made clinically using Amsel criteria: vaginal pH>4.5, release of fishy smell on addition of 10% potassium hydroxide, characteristic discharge on examination and presence of “clue cells” on microscopy. The treatment is Metronidazole 400mg orally twice a day for five days or 2g as a single oral dose.

23.9 Prevention of Malaria during Pregnancy

HIV-infected women are more likely to develop malaria during pregnancy if they are at risk of this infection. Therefore they should be advised to use malaria prophylaxis.

23.10 Nursing care requirements

The nursing care requirements for women with HIV infection are summarised in Table 23.1.

Table 23.1 Nursing care requirements for women with HIV infection	
Condition	Nursing Intervention
Pain and discomfort related to genital lesions, PID, dysmenorrhoea, dyspareunia	Administer prescribed analgesia. Advise on fowler's position for PID. Use hot or cold compresses for dysmenorrhoea, vaginal jellies to relive dyspareunia
Altered nutrition related to disease condition as evidenced by loss of weight	Give information on well balanced diet. Increase caloric intake to provide energy. Encourage diet with increased fat and carbohydrate in diet and also use fruit and vegetables, and natural unrefined foods.
Risk for infection related to reduced immunity	Encourage long term antibiotics like Cotrimoxazole to prevent <i>Pneumocystis pneumonia</i> (PCP). Hand washing Proper disposal of sanitary pads and good perineal care
Knowledge deficit	Client education regarding diagnosis, signs and symptoms, and

intraepithelial neoplasia and Bowen's disease. Approximately 20% of HIV-infected women have severe cervical intraepithelial neoplasia (CIN). Because of this cervical screening should be performed annually and persistent vulval lesions should be biopsied in women with HIV infection. For women with AIDS, 6 monthly cervical screening is appropriate. Approximately 30 types of HPV can infect the genital mucosa but only 17 are carcinogenic with types 16, 33 and 18 being the commonest in our population.

Treatment of HPV infection may not be effective until the immune anti-HPV response controls viral replication. This can be achieved if antiretroviral treatment is given.

23.8.2 Herpes simplex virus (HSV) infection

HSV is the commonest cause of genital ulcers in immunosuppressed individuals. A herpetic genital ulcer that persists for more than one month is indicative of immunosuppression. Herpetic ulcers are often multiple, deep, recurrent and painful. HSV has been implicated in postpartum endometritis in HIV-infected women. Diagnosis is made on clinical findings. Treatment is effective in reducing the severity of the symptoms and controlling the extent of lesions and to prevent the recurrence of lesions. Acyclovir 200mg PO given five times a day for five days is an effective treatment. In persons with persistent and protracted ulcers it is appropriate to prescribe a long-term treatment with acyclovir 400mg PO BID.

23.8.3 Genital candidiasis

Vaginal candidiasis can be severe and recurrent in women with HIV infection. Patients present with itching and soreness of the vulva and vagina, and complain of a white discharge. The pH of the vagina is usually normal and microscopy or culture of the discharge confirms diagnosis. Topical treatment is preferable. A variety of pessaries and creams containing imidazole or nystatin are available. In severe cases systemic treatment with a single dose 150mg of Fluconazole is effective if the pathogen is *Candida albicans* only. In recurrent infection once or twice monthly treatments can be offered.

Management

Women found to have an abnormal Pap should be referred for colposcopy and biopsy. Early lesions can be treated with loop excision or cryo-therapy. Early stages of cervical cancer are treated with surgery. In late stages for example stages 2b and above, radiotherapy is indicated.

23.7 Cervical intraepithelial neoplasia (CIN)

Cervical intraepithelial neoplasia presents as dysplasia of the surface layers of the cervical cells. CIN is classified according to degrees of severity. There are 3 grades of CIN: grades I, II or III. Patients with CIN usually have no symptoms, the diagnosis being made on cytologic examination of Pap smears and on colposcopy and biopsy. It is therefore important that all women with abnormal Pap smears, i.e., smears showing any atypical cellular activity (including persistent inflammation), be referred for expert opinion.

Management

CIN-I:

No therapy needed, but patient should be monitored closely and regular Pap smears should be performed

CIN-II-III:

Any of the following modalities of treatment may be used:

- laser vaporization treatment,
- loop electric excision procedure (LEEP),
- excision biopsy,
- cryotherapy - this option may be the least desirable as it may mask future problems

23.8 Sexually transmitted infections

SEE CHAPTER ON STIs

23.8.1 Human papillomavirus (HPV) infection

HPV infection can be severe and persistent in immunosuppressed women. Chronic HPV infection can result in cervical pre-cancer or cancer, vulval

23.4 Pregnancy

Women presenting with amenorrhoea should be investigated for pregnancy.

Management

Offer option to terminate or keep the baby. If she wants to keep the baby, plan for a caesarean section and no breast-feeding. Prepare for provision of nevirapine 200mg to the mother during labour and nevirapine to the neonate in order to prevent the mother-to-child transmission of HIV. See also counseling under nursing care requirements.

23.5 Vertical transmission

Vertical transmission occurs in 25-40% of pregnancies if no interventions are given. A combination of antiretroviral therapy, Caesarean Section and avoidance of breastfeeding can reduce the risk to less than 3%.

Antiretroviral therapy that have been used include:

- Zidovudine 100mg five times a day starting from preferably the second trimester, followed by zidovudine 2mg/kg loading dose, then 1mg/kg/hr during labour and to the baby zidovudine syrup 2mg/kg/6hrly beginning at 8-12 hours after birth for 6 weeks.
- Combination therapy
- A single dose of Nevirapine 200mg at the onset of labour followed by a single dose to the infant at 48-72 hrs of life 4mg/kg

23.6 Abnormal Pap smear

HIV positive women should have a gynaecological examination annually. This should include a visual inspection of the cervix after application of acetic acid and a Pap smear.

Women with symptomatic HIV infection and those with HIV infection and a CD4 lymphocyte count of $200/\text{mm}^3$ or less should have a Pap smear performed every 6 months.

Hypogonadotrophic amenorrhoea

Severe weight loss (15-20%) can be associated with hypothalamic disorder and functional hypogonadotrophic hypogonadism. This can result in menstrual disturbance or amenorrhoea similar to that seen in anorexia nervosa. History and specific investigations such as LH/FSH levels will point to the diagnosis. Improvement of body weight will usually result in resumption of menstruation.

Emotionally stressful events, which are not uncommon in HIV-infected individuals may result similarly in amenorrhoea. Some women can present with severe menopausal symptoms, in which case, HRT may be used.

Menorrhagia

In cases with thrombocytopenia, menorrhagia can present due to delayed clotting of the blood. History of other bleeding events as well as simple platelet count will help make a diagnosis. Treatment of thrombocytopenia will reduce menstrual blood flow. Other treatment options include: Tranexamic Acid 500 mg twice or three times a day for the time of the period or suppression of menstruation by Depo Provera injection, which may require higher than contraceptive doses.

Management of menstrual disorders

Current standards of care for HIV-positive women neither approve nor forbid the use of hormonal therapies or birth control for menstrual regulation. Stress management and nutrition may relieve symptoms. Dilatation and curettage (D&C) may be necessary to exclude endometrial polyps or endometritis. If D&C reveals no pathology give the patient low estrogen combined pill (30 days cycle), or if this is contraindicated give progestogen only pill. Alternatively give the patient Norethisterone 5 mg BID for 15 days.

23.3 Contraception

HIV-infected women should be advised to use reliable forms of contraception such as Norplant or injectable Medroxyprogesterone (Depo Provera) together with condoms. It should be noted that antiretroviral drugs might interact with the metabolism of synthetic oestrogens. Preferably in appropriate cases female or male sterilisation should be performed.

23. WOMEN WITH HIV/AIDS

23.1 Introduction

HIV disease can be devastating because of the stigma of sexual transmission and the risk of vertical transmission to children. It requires continued counseling and multidisciplinary support. Genital infections are risk factors for HIV transmission and acquisition. These include genital ulcer disease, chlamydial and gonococcal infection. In addition bacterial vaginosis appears to be very common in some women and may also constitute a risk factor. HIV infected women should be urged to use condoms to prevent transmission of infection as well as becoming re-infected with HIV or other STIs.

This section will focus on the gynaecological and obstetric aspects of HIV infection.

23.2 Menstrual disorders

Up to 40% of HIV-infected women experience menstrual disorders. Disorders experienced by women with HIV infection may be exacerbated by weight loss, anaemia, drugs and medications and psychological problems such as depression. Menstrual disorders in women with HIV infection include:

- Absence or suppression of menstruation (amenorrhea),
- Irregular periods
- Menorrhagia
- Oligomenorrhoea
- Intermenstrual bleeding
- Worsening of symptoms associated with premenstrual syndrome

In women with menstrual disorders it is important to carry out some investigations, such as, detailed history and careful clinical examination, pregnancy test, full blood count, haemoglobin and platelet levels, visual inspection of the cervix, bimanual pelvic examination and Pap smear.

hyperplasia" or "follicular hyperplasia". A lymph node biopsy is necessary to establish a cause (See Box below).

Criteria for performing a lymph node biopsy

A patient with PGL should be referred for a lymph node biopsy if he/she has any of the following:

- Lymph nodes are asymmetrically enlarged
- There is massive enlargement of lymph nodes, i.e., at least one lymph node measures more than 3 cm in diameter
- Lymph nodes are getting bigger over a period of observation
- There is evidence of TB on chest x-ray
- There is evidence of enlargement of hilar lymph nodes on chest x-ray
- There is evidence of Kaposi's sarcoma elsewhere in the body

Cervical Disease

Cervical disease is clinically evident in 12% to 45% of patients. The neck is the third most common site of PGL. In decreasing order sites involved are: posterior triangle, pre and post auricular regions, submandibular triangle and occipital regions. Patients may have associated pharyngeal follicular hyperplasia and enlarged tonsils leading to otitis media with effusion secondary to eustachian tube obstruction.

It is important to exclude TB, Kaposi's Sarcoma, Lymphoma and metastatic carcinoma. And therefore it may be necessary to carry out biopsies of lymph nodes or fine needle aspiration.