Vaginal Discharge

Introduction
Vaginal discharge may be caused by a range of physiological and pathological conditions. Vaginal infection, due to bacterial vaginosis (BV) and candidiasis often present in primary care, or less commonly trichomoniasis (TV). However, a number of women may have other conditions such as vulval dermatoses or allergic reactions. Cervical infection caused by chlamydia or gonorrhoea can also result in vaginal discharge and may need to be considered.

Diagnosis
The symptoms and signs that do occur are often non-specific to any particular infection, and a 'classical appearance' may not aid diagnosis. However, some are more indicative of one condition than another:

	Candida	BV	TV	Physiological
History				
Symptoms	10-20% asymptomatic	~ 50% asymptomatic	10-50% asymptomatic	
Discharge	Thick/white	Thin/grey	Thin/frothy	Clear/white
Smell	Not offensive	Fishy	Fishy	Odourless
Associated Irritations	Itchy/sore Vulval oedema	Usually none, but maybe burning	Itchy/sore Dysuria	None
Investigations				
pH	≤ 4.5	> 5	>5	≤ 4.5
Swabs *	High vaginal swab	High vaginal swab	High vaginal swab	None

Always consider Chlamydia and Gonorrhoea if <25 years, partner change in last year, and continuation of symptoms if above have been excluded.

* Different laboratories will process a high vaginal swab in a variety of ways. You will need to be clear what your local lab does.

Management
See individual fact sheets

BACTERIAL VAGINOSIS

Causative organism
Bacterial vaginosis is characterised by a reduction in lactobacilli and an overgrowth of predominantly anaerobic organisms (*Gardnerella vaginalis*, *Prevotella* spp., *Mycoplasma hominis*, *Mobiluncus* spp.) in the vagina with an increase in vaginal pH.

Transmission
It can arise and remit spontaneously in women regardless of sexual activity.

Symptoms and signs
- asymptomatic (approx. 50% of women)
- offensive fishy-smelling vaginal discharge
- less commonly vaginal irritation or mild low abdominal discomfort
- examination may reveal a thin, greyish/white homogenous discharge

Diagnosis: Amsel's criteria (three of four should be positive)
1 thin, grey/white homogenous discharge
2 pH of vaginal fluid > 4.5 (pH paper is cheap and readily available – see general information for supplier)
3 positive amine test (release of fishy odour on adding alkali – 10% KOH)
4 clue cells on microscopy, available on most HVS – discuss with your local lab

Treatment is indicated for:
Symptomatic women and pregnant women with a history of recurrent miscarriage

Recommended Regimens
- Metronidazole 400 – 500 mg twice daily for 5 – 7 days or 2g stat (avoid single dose in pregnancy)

Alternative Regimens
- Intravaginal metronidazole gel (0.75%) once daily for 5 days
- Intravaginal clindamycin cream (2%) once daily for 7 days
- Clindamycin 300mg twice daily for 7 days

Pregnancy
Metronidazole can be used in all stages of pregnancy and during breastfeeding, however manufacturers recommend that single 2g dose regimens are best avoided in these circumstances

Complications
There is an association with post-termination of pregnancy endometritis and pelvic inflammatory disease. BV is associated with recurrent late miscarriage.

General advice
Patients should be advised to avoid vaginal douching, use of shower gel, and use of antiseptic agents or shampoo in the bath.

Follow up
None required if symptoms resolve. Recurrence is very common (up to 50% by 3 months) and can be difficult to manage; specialist advice may be beneficial.

Contact tracing/partner notification
None required

CANDIDA IN WOMEN (THRUSH)

Causative organism

The most common species is *Candida albicans*. The majority of women will have at least one symptomatic episode in their lifetime. During reproductive years women may harbour *Candida species* in the absence of symptoms. These women do not require treatment.

Symptoms any or/ all of:	**Signs**
pruritis	vulvo-vaginitis
vulval/vaginal soreness	swelling
superficial dyspareunia	linear fissures
discharge (very variable)	± variable (non-offensive) discharge
	satellite lesions

Candidiasis is often diagnosed on the basis of clinical features alone. None of these symptoms or signs is specific for the diagnosis of candidiasis and as many as half of these women may have other conditions e.g. allergic reactions. These conditions need appropriate exclusion and management in order to control the symptoms.

Complications none described

Diagnosis in primary care

- Clinical
- pH <5
- High vaginal swab (HVS) but 10-20% women are asymptomatic vaginal carriers and their symptoms may not be due to the candida isolated
- Tests may be negative if recently self-treated (Check recent use of over the counter preparations)

Management If no symptoms/signs do not treat

First or isolated episodes - if symptoms/signs strongly suggestive treat as candida

Recommended regimen

- Antifungal pessary +/- cream for external areas

Alternative regimen:

- Fluconazole 150 mg stat

Recurrent or persistent problems - if symptoms persist or recur following treatment consider:

- HVS to confirm the diagnosis and document frequency,
- Full screening for other infections
- other causes of vulvovaginitis

For women who have frequent symptoms it is important to consider associated precipitants (e.g. soaps, shower gels, sanitary towels), which may increase the risk of a localised inflammatory response. Thus the management of Candida in these cases involves the exclusion and treatment of these precipitants as well as the underlying fungal infection.

Exclude risk factors

Diabetes mellitus, thyroid disease, iron deficiency with or without anaemia, underlying immunodeficiency, corticosteroid use, or frequent antibiotic use. The use of hormonal contraceptives is not associated with candidiasis.

Management of persistent / recurrent candida - if no risk factors and persistent candida seek advice

Pregnancy and breastfeeding

Asymptomatic colonisation with *Candida species* is higher in pregnancy (30-40%). Symptomatic candidosis is more prevalent throughout pregnancy. Treatment with topical azoles is recommended. Longer courses may be necessary. Oral therapy is contraindicated.

Contact tracing/partner notification

There is no evidence to support treatment of asymptomatic male sexual partners.

Follow up

Unnecessary if symptoms resolve. Test of cure is unnecessary

CANDIDA IN MEN

Usually presents as mild balanitis with pruritus. May complicate balanitis due to other causes.

Candidosis (particularly in a male) may be the first sign of previously undiagnosed diabetes mellitus.

Treatment

Saline bathing +/- azole cream

In men may be sexually acquired and female partner may be symptomatic/have high yeast carriage thus if recurrent, investigation and treatment of female partner may be beneficial.

CHLAMYDIA TRACHOMATIS

Causative organism

An obligate intracellular bacteria with a long life cycle.

Transmission

It is the most common bacterial STI in the UK. Perinatal transmission results in neonatal conjunctivitis in 30–50% of exposed babies, usually presenting in the second week of life, or less commonly pneumonitis, which presents between 4 and 12 weeks of age.

Women	Men
Symptoms	
• Asymptomatic in approximately 80% • Post coital or inter-menstrual bleeding • Purulent vaginal discharge • Lower abdominal pain • Can cause proctitis	• Asymptomatic in up to 50% • Urethral discharge • Dysuria • Testicular/epididymal pain • Can cause proctitis
Signs	
• Normal • Cervicitis, mucopurulent discharge • Cervical contact bleeding • Local complications e.g. bartholinitis, signs of pelvic infection	• Normal • Urethral discharge and/or dysuria • Local complications e.g. epididymitis

Complications

In men, the most common complication of untreated infection is epididymitis.
In women ascending infection leads to pelvic inflammatory disease (PID): endometritis, salpingitis, tubal damage, and chronic pelvic pain. PID increases the risk of ectopic pregnancy and infertility. Perihepatitis (FitzHugh Curtis Syndrome) and Reiter's syndrome may occur. Autoinoculation may result in chlamydial conjunctivitis.

Diagnosis

Nucleic acid amplification tests should now be available through out the UK. These tests have a high sensitivity and specificity. You should be aware of what test is used locally for your samples and liase with your GUM and microbiology clinics about which samples to take.

Men should hold their urine for at least 2 hours before testing.

Swab based tests – Chlamydia can not be diagnosed on genital swabs sent for MC&S e.g. HVS.

As Chlamydiae are intracellular organisms, swab samples must contain cellular material for the diagnosis. Swabs should be inserted inside the cervical os and firmly rotated against the endocervix. (refer to manufacturers guidelines)

Urine based tests - It is important to collect a first void (first 20 mls) urine sample (not a mid stream urine).

Treatment Recommended (including conjunctivitis)

- Doxycycline 100mg bd for 7 days (not if risk of pregnancy or breast feeding)
- Azithromycin 1g stat (if compliance an issue, not in pregnancy)

Alternative regimens

- Erythromycin 500mg bd for 14 days (if pregnancy possible or breast feeding)
- Erythromycin 500mg qds for 7 days
- Deteclo 300 mg bd for 7 days
- Ofloxacin 200 mg bd or 400 mg od for 7 days

Complications: PID / epididymitis
See separate sections

Pregnancy

chlamydial infection is associated with:

- low birth weight
- post-partum endometritis
- neonatal conjunctivitis and pneumonitis.

Contact tracing/partner notification

Partner notification should be discussed with all patients identified with genital chlamydial infection. It is essential that all recent (last three months or previous partner if longer) and current sexual partners should be informed and advised to attend for evaluation.

Note: epidemiological treatment for *C. trachomatis* should be given even if tests are negative.

Patient Advice

- *C. trachomatis* is a sexual infection
- It is often asymptomatic but if left untreated can have serious complications
- The need to see and treat sexual partners
- The need to abstain from sexual intercourse(even with a condom) until the completion of therapy
- The side effects and importance of complying fully with treatment
- Advice on safer sexual practices and how to avoid infection in the future

Follow up

Ensure that partner notification has taken place
Exclude reinfection
Ensure compliance of the medications

Routine tests of cure are not indicated. All tests, except culture, can detect dead organisms up to 3 weeks after commencing therapy. If a test of cure is performed it should be done between 3 and 5 weeks after the completion of treatment. Tests of cure are essential in pregnant women and other cases where erythromycin has been used for treatment.

EPIDIDYMO-ORCHITIS (EPIDIDYMITIS)

Epididymo-orchitis is defined as inflammation of the epididymides ± testicular inflammation triggered by an infectious agent.

Symptoms and signs

Usually unilateral but may be bilateral. The patient may complain of scrotal swelling, erythema and pain. Examination will usually reveal unilateral testicular discomfort with tender swollen epididymis.

Differential diagnosis (usually unilateral presentations)

- Torsion (< 20 years)
- Inguinal hernia
- Tumour (uncommon, usually non painful)

Causes - Infective agents that cause epididymo-orchitis

N. gonorrhoeae	Up to 50% also have Chlamydia
C. trachomatis	Most common cause under 35 years of age
E. coli, enterobacteriacae	Usually >35 years of age and/or structural urinary tract abnormality
M. tuberculosis (rare)	Chronic epididymitis

Assessment

Sexual history is important
STI screen, urine dip test and MSU

Management

Patients under the age of 35 are more likely to have an STI and therapy should cover this possibility whilst waiting for microbiological results. Patients aged older than 35, with a low risk of an STI are more likely to have a UTI.

- If urine dipstick negative and under 35 (or high suspicion of STI) most likely due to chlamydia or other non-gonococcal, non-enteric organism. *If high suspicion of Gonorrhoea (GC)* liase with local GUM department.

Recommended regimen

- Doxycyline 100mg bd for 14 days

Alternative regimen

- Ofloxacin 200 mg bd for 14 days

- Rest, simple analgesics and supportive underwear may also help recovery
- If urine dipstick positive, over 35, and low suspicion of STI treat as for a complicated UTI infection following local prescribing policy.

Follow up

Review at 2 weeks and continue therapy for one month if not fully recovered. The patient should be advised that full recovery may take some time. If not responding reassess to check antibiotic compliance, avoidance of sexual intercourse, risk of reinfection and use of analgesic.

Contact tracing/partner notification

Current partners should be contact traced and treated unless a urinary pathogen is isolated. If a specific ST is isolated then contact trace as per recommendations.

GONORRHOEA

Causative organism

Neisseria gonorrhoeae infects mucosal surfaces of genital tract, rectum, oropharyx and eye

Transmission

Gonorrhoea is always sexually transmitted in adults. Perinatal transmission results in eye infection in the neonate, presenting in the first week of life and is a notifiable disease. In older children the isolation of gonorrhoea should raise the suspicion of sexual abuse.

Symptoms depend upon the site of infection.

- 85% of men with urethral infection develop symptoms within 10 days, most commonly discharge or discharge with dysuria, but some remain asymptomatic.
- Rectal infection is usually asymptomatic (approx. 80%) but may cause rectal/anal pain or discharge. In women rectal infection can occur in the absence of anal intercourse.
- Pharyngeal infection is usually asymptomatic.
- Cervical infection in women is asymptomatic in about 70% of episodes, and the symptoms that do occur, such as vaginal discharge and low abdominal or pelvic pain are non-specific for gonorrhoea.

Signs - examination may be normal, although other signs depend upon the site of infection.

Urethra	Cervix	Rectum	Pharynx
Discharge mucoid → purulent Meatitis Signs of local complications (see below)	Cervicitis Discharge mucoid → purulent Cervical excitation (cf. PID) Signs of upper genital tract infection.	Proctitis Discharge	Exudate Pharyngitis

Complications

Local complications in men	Local complications in women
epididymitis Infection of various penile glands, risk of abscess formation	bartholinitis endometritis salpingitis, peritonitis, tubo-ovarian abscesses

Much less commonly disseminated infection (DGI) occurs by haematogenous spread. In such cases, complications include septicaemia, arthritis, tenosynovitis, and skin lesions.

Diagnosis

Gonorrhoea may be isolated from an endocervical swab taken in primary care, or occasionally a HVS (however a negative HVS does not exclude the diagnosis). Other STIs, in particular chlamydial infection and trichomoniasis, frequently coexist with GC and all patients should be screened for these. The treatment varies locally depending upon current resistant patterns and thorough evaluation and tests of cure are necessary to ensure eradication of the organism. For these reasons it is advised these patients should be managed in a GUM department. (In men, see urethritis)
In high-risk patients (i.e. contacts) samples should be taken on two occasions from all possible sites of infection, and directly plated onto specific culture media, before a diagnosis of gonorrhoea is excluded.

Treatment

The treatments recommended locally will depend upon local antibiotic resistance patterns, source of the infection, and anatomical site of infection. Either refer to, or seek advice from your local clinic.

Follow up

This should be at GUM as symptomatic improvement with treatment does not guarantee eradication of the gonococcus. To exclude resistant infection or reinfection specific culture media is necessary.

Contact tracing/partner notification

It is essential that all recent (last three months or previous partner if longer) and current sexual partners are seen and tested for gonorrhoea.
In some situations, epidemiological treatment (treatment given to named contacts of patients after a history of exposure to disease but without or in advance of confirmatory pathological findings) may be given. This is justified if it is considered that the risk of unnecessary treatment is outweighed by the risk of complications of the infection or the likelihood of infecting others (discuss with your local GUM service).

HERPES SIMPLEX VIRUS (HSV)

Causative organism
There are two types of HSV, 1 and 2. Both can infect either mouth or genitals.

Transmission
HSV is transmitted by close physical contact, either sexual and/or oro-genital. It can only be transmitted when an already infected individual is shedding virus, which happens sporadically and not necessarily in association with symptoms (asymptomatic shedding).

Clinical presentation
This is variable. A minority will develop a severe primary attack or first clinical episode within 2 to 12 days of acquisition of the virus. Some develop minor lesions only and 70–80% of individuals have no clinical symptoms and may be suspected because a sexual partner presents with symptoms.

Note: It may not be possible to distinguish between a so-called primary attack, which implies new infection, and a first clinical episode where the patient may have acquired genital herpes at some time in the past, but only recently developed symptoms.

Primary infection usually more severe in females. In both sexes, the following symptoms may occur
- febrile illness (prodrome) lasting 5–7 days
- dysuria, urinary frequency
- painful inguinal lymphadenopathy
- tingling/neuropathic pain may occur in genital area, buttocks or legs
- genital blisters, ulcers, fissures.

An untreated first episode may last 3 weeks or rarely more.

Complications usually occur with the first episode and the risk is reduced if given antiviral therapy. They include:
- acute urinary retention (occurs predominantly in women)
- constipation (may be a risk with first episode perianal disease)
- aseptic meningitis

Clinical course
Recurrent episodes are usually mild. Presenting symptoms in men and women may typically include:
- neuropathic prodrome, with tingling, burning, may occur in genital area, buttocks or legs
- erythema, blisters, fissures and ulcers.
- These usually resolve fully within 3–4 days

The risk of symptomatic recurrences is increased in patients:
- who are young (< 20 years of age)
- have a severe first episode
- within three months of primary episode
- who have genital type 2 infection
- with HIV infection or other immunodeficiency problems

Diagnosis
Patients should be seen as soon as possible during an acute episode. If possible swabs for HSV culture or PCR from lesions should be taken, but treatment should not be delayed if these are not readily available. A negative culture does *not* exclude herpes (may be taken too late in an attack). If presentation is not typical other causes of genital ulcers need excluding, especially syphilis, but again anti-viral treatment should not be delayed.

Treatment
Primary/first episode. If within 5 days of lesions developing or beyond 5 days but still forming new lesions commence treatment immediately.
- Recommended regimens (all for 5 days)
  - aciclovir 200mg 5 times a day (approximately every 5 hours)
  - valaciclovir 500mg twice daily
  - famciclovir 250 mg three times daily
- Regular analgesics / laxatives where appropriate
- Bathing in a dilute saline solution (eg 1 teaspoon salt in a tumbler of warm water/1 teacup salt to medium bath) to relieve symptoms, reduce secondary infection and promote healing.

Counselling is of the utmost importance, may need to be repeated subsequently - give leaflet

Recurrent episode. Specific antiviral therapy is not usually required. Saline washes, petroleum jelly to the lesions and simple analgesics can be recommended.

Frequent/prolonged recurrent episodes. Patients experiencing six or more episodes per annum and/or less frequent but prolonged (> 4 days) may benefit from a period of suppressive therapy where the aim is to prevent recurrences. Discuss with your local GUM service and consider development of local protocol.

Pregnancy (Discuss with a senior Dr in GUM)
A prior diagnosis of genital herpes is unlikely to affect pregnancy or its management and women and their partners should be appropriately reassured.

Advice should be sought in the case of a primary attack at any stage during pregnancy as this is associated with a higher risk of adverse outcomes. If a woman is suffering frequent recurrences or has related anxieties, advice can be sought about the possible use of suppressive treatment during pregnancy. All obstetric departments in the UK should have a policy for the management of clinical HSV lesion during delivery.
- Sequential cultures during late gestation to predict HSV shedding at term are not indicated
- Symptomatic recurrences of genital herpes during the third trimester are usually brief; vaginal delivery is appropriate if no lesions are present at delivery
- current practice in the UK is to recommend delivery by Caesarean section if genital lesions are present at onset of labour
- Pregnant partners of men with genital herpes, but without a history of genital herpes themselves, should be strongly advised not to have sex at the time of any recurrences. Conscientious use of condoms throughout pregnancy may diminish the risk of acquisition (viral shedding may occur in the absence of lesions). Any strategy for prevention of neonatal herpes needs to involve both parents
- Pregnant women should be advised of the risk of acquiring genital HSV-1 as a result of oro-genital contact
- Type specific serological testing for clinically discordant partners may help clarify transmission risk

Contact tracing/partner notification
HSV is often passed within stable relationships by an asymptomatic carrier or an undiagnosed index case. It is useful to see partners to explain the diagnosis. In addition, up to 50% of apparently asymptomatic carriers will be found to have had symptomatic disease after an assessment.

Hepatitis B infection

Causative organism. Hepatitis B virus (a small DNA virus).

It is endemic world-wide with very high rates (up to 20%) in South and East Asia, but also in Southern Europe, Central and South America, Africa and Eastern Europe. In the UK prevalence varies from 0.01-0.04% in blood donors to >1% in intravenous drug users and gay men.

Transmission It is 10 – 100 times more infectious than HIV

- Sexual transmission occurs in unvaccinated gay men and correlates with multiple partners, unprotected anal sex and with oro-anal sex ("rimming"). Transmission may occur after heterosexual contact e.g. 18% infection rates for regular partners of patients with acute hepatitis B. Sex workers are at higher risk.
- parenteral (blood, blood products, drug-users sharing needles and syringes, needle-stick)
- vertical (infected mother to infant)
- Sporadic infection occurs in people without apparent risk factors, in institutions for learning difficulties and also in children in countries of high endemicity, but means of transmission is poorly understood.

Clinical presentation

Incubation period 1 to 6 months. Virtually all infants and children have asymptomatic acute infection. Asymptomatic infection is also found in 10-50% of adults in the acute phase and is especially likely in those with HIV co-infection. Women tend to have more severe disease than men.

Complications

Acute infection

- < 1% of patients with acute infectious hepatitis will develop fulminant hepatitis. Mortality is < 1%.
- 5–10% will develop chronic infection but the rate is higher in those with asymptomatic acute infection, immuno-compromised patients with HIV infection, chronic renal failure or those receiving immuno-suppressive drugs.
- Pregnancy - increased rate of miscarriage/premature labour in acute infection
- >90% of infants born to infectious (HBeAg +ve) mothers will become chronic carriers unless immunised. 20–30% of this group develop chronic hepatitis, cirrhosis or carcinoma of the liver.

Chronic infection

- Carriers with 'e' antigen have a higher risk of developing complications.
- Concurrent hepatitis C infection can lead to fulminant hepatitis, more aggressive chronic hepatitis and increased risk of liver cancer.
- Concurrent HIV infection may increase the risk of progression to cirrhosis.
- 10 – 50% of chronic carriers will develop cirrhosis leading to premature death in approximately 50%. About ten percent of cirrhotic patients will progress to liver cancer.

Diagnosis

This is made on serology. In acute infection blood tests are repeated over time to monitor liver dysfunction and to look for the development of antibodies.

Chronic infection - in most cases the only abnormality will be mildly abnormal amino-transferase levels and in many the liver function tests (LFT) will be normal. Only in severe late stage liver disease do the LFTs become grossly abnormal.

Treatment. Patients who present acutely in the primary care setting can be monitored and usually do not require hospital admission. In view of the possibility of chronic infection, serology should be repeated after six months even if the LFTs are normal. Patients who develop 'e' antibodies but remain HBsAg positive should have annual LFTs and referral considered if abnormality develops. Persistent HBeAg carriers should be referred to a specialist.

Pregnancy and Breastfeeding

Vertical transmission (mother to infant) of infection occurs in ninety percent of pregnancies where the mother is hepatitis B e antigen positive and in about ten percent of surface antigen positive, e antigen negative mothers. Most (>90%) of infected infants become chronic carriers.

Infants born to infectious mothers are vaccinated from birth, usually in combination with Hepatitis B specific immunoglobulin. This reduces vertical transmission by ninety percent.

Infected mothers should continue to breastfeed as there is no additional risk of transmission.

Contact tracing/partner notification

Contact tracing to include any sexual contact or needle-sharing partners during the period in which the index case is thought to have been infectious. The infectious period is from two weeks before the onset of jaundice until the patient becomes surface antigen negative.

In cases of chronic infection trace contacts as far back as any episode of jaundice or to the time when the infection is thought to have been acquired. This may be impractical for periods of longer than two or three years.

Arrange screening for hepatitis B of children who have been born to infectious women if the child was not vaccinated at birth.

- Specific hepatitis B immunoglobulin 500 i.u. i.m.(HBIG) may be administered to a non-immune contact after a single unprotected sexual exposure or parenteral exposure/needle-stick injury if the donor is known to be infectious. This works best within 48 hours and is of no use after more than seven days (arrange via local virology department).
- An accelerated course of recombinant vaccine should be offered to those given HBIG plus all sexual and household contacts (at 0, 1, 2 and 12 months). It is possible to given even more rapid courses.
- Avoid sexual contact, especially unprotected penetrative sex, until vaccination has been successful (anti-HBs titres >100i.u./l.)

Screening and Primary Prevention

Hepatitis B testing in asymptomatic patients should be considered in

- gay men
- sex workers (of either sex)
- intravenous drug users
- HIV-positive patients
- sexual assault victims
- Individuals from endemic areas
- needle-stick victims
- sexual partners of positive or high-risk patients.

Vaccination should be offered to non-immune patients in most of the above groups. The main exception is those who have been sexually assaulted and people born in countries of high endemicity but not at continuing risk who are being screened primarily to detect chronic carriage.

- HIV positive patients show a reduced response rate to the vaccine (approximately 40%).
- The standard vaccination schedule is 0, 1, and 6 months. Test for response (anti-HBs >100i.u./l) 8 - 12 weeks after the last dose.
- Non - or poor responders usually respond to further doses (up to three injections at normal or double dose), ideally as a repeat course, and show response rates up to 100%.
- Booster doses are given every five years. There is no need for a further antibody check.

HIV infection awareness in Primary Care

Natural history

As the CD4 count declines (and the HIV viral load increases – although it may be constant) during the course of infection there is an increased risk of developing infections. The severity of these illnesses and the risks of an AIDS diagnosis is greater the lower the CD4 count. Most AIDS diagnoses occur with a CD4 count of less than 200.

Acute infection – seroconversion

↘ Asymptomatic

↘ HIV related illnesses

↘ AIDS defining illness

↘ Death

Primary HIV infection / seroconversion

This is the time when an individual first contracts the virus. Be aware that serological tests for HIV antibodies may be negative or show an indeterminate response during the acute seroconversion illness. Approximately 30 - 60% of patients have a seroconversion illness with an abrupt onset 2 – 4 weeks post exposure, self limiting 1 – 2 weeks

The symptoms are generally non-specific and the differential diagnosis includes a wide range of common conditions.

Symptoms include:

- Flu-like illness,
- Fever,
- Malaise and lethargy,
- Pharyngitis,
- Lymphadenopathy,
- Toxic exanthema.

The symptoms and signs are not unique to primary HIV infection and the diagnosis can be difficult in the primary care setting. An HIV risk history approached sensitively and in an appropriate manner may help identify those at greatest risk.

These may be temporary but significant damage to the immune system at seroconversion may result in one or more of the HIV related illnesses which are seen later on in the progression of the disease (e.g. oro-pharyngeal candida, zoster etc, see following paragraph).

Benefits of early diagnosis of HIV infection

- Early medical intervention with HAART (it is more effective when started with a CD4 count > 200)
- Prophylaxis against opportunistic infections can be offered if appropriate
- Avoidance of inappropriate investigation for symptoms if HIV not considered
- Education about minimising the risk of infecting others
- Partner notification
- Treatment of pregnant women, delivery method and avoidance of breastfeeding (in UK) can dramatically reduce perinatal transmission
- Ability to inform important life decisions
- Relief of anxiety about knowing HIV status
- Access to help from social services, drug services etc

HIV associated conditions

Most of these conditions are commonly seen in the general population. You may need to think of HIV if the presentation is atypical, a recurrent problem or the symptoms severe e.g. multidermatomal herpes zoster or oral candida without an identified cause.

The suspicion may also be increased if the individual is possibly at risk of HIV infection.

Dermatological manifestations

- Psoriasis (newly presenting or worsening)
- Dermatophytosis – tinea pedis, corporis, capitis, cruris, onychomycosis
- Herpes infections– recurrent, disseminated, atypical severe
- Zoster infections – recurrent chicken pox, shingles, multidermatomal shingles
- Acne
- Itchy folliculitis
- Recalcitrant or mucosal warts
- Drug reactions
- Seborrhoeic dermatitis
- Xeroderma
- Crusted scabies
- Thrush – recurrent, severe,
- Molluscum contagiosum
- syphilis

The following should suggest HIV infection unless proven otherwise

- Kaposi's sarcoma
- Oral hairy leukoplakia
- oro-pharyngeal candida esp pseudomembranous
- CMV ulcers

Other manifestations

Recurrent respiratory tract infections without a known predisposing cause
Tuberculosis
Weight loss
Persistent extra inguinal lymphadenopathy

Common AIDS presentations

- **Pneumocystis carinii pneumonia (PCP) – 80% of untreated HIV +ve patients, may present with insidious onset of increasing shortness of breath (especially on exertion), increasing dry cough, pyrexia, malaise, CXR normal in early disease, rapidly progressive and fatal**
- **Cerebral abscess(es) – often caused by Toxoplasma. Can be difficult to differentiate from a cerebral lymphoma**
- **Non Hodgkin's lymphoma is 60 times more common in HIV disease than in the seronegative population**
- **Cryptococcal meningitis**
- **Mycobacterium avium complex**
- **CMV retinitis**