

Investigation and Management of Vaginal Discharge in Adult Women

SUMMARY POINTS

- A detailed history, including sexual history, should be taken to explore potential causes and guide investigation and management.
- The commonest causes of altered discharge are BV and candida. Diagnosis at the first presentation can usually be made using a combination of symptoms and immediate pH testing of vaginal secretions.
- A high vaginal swab (HVS) has limited diagnostic value and should not be used as part of routine first line investigations for vaginal discharge. HVS should be reserved for investigating recurrent symptoms, unusual clinical presentations or new symptoms in pregnant women.
- Whilst vaginal discharge is not, in itself, an indication for sexually transmitted infection (STI) testing all **symptomatic** sexually active women with risk factors for STIs should be offered testing with a triple NAAT (nucleic acid amplification test) for Chlamydia, Gonorrhoea and Trichomonas vaginalis (TV). NAAT testing is the most sensitive and specific method for diagnosing the above three STIs.
- Women who present to primary care with persistent or recurrent vaginal/vulval symptoms should be examined and investigated.
- Chlamydia screening should be offered, annually, to asymptomatic women under the age of 25

OUTLINE AND SCOPE

This document provides advice for clinicians working in primary care who will be managing women presenting with vaginal discharge. It outlines the main causes of discharge, investigation methods and treatment regimes. These guidelines are intended to aid diagnosis and rationalise prescribing. The flow chart summarises the guidelines and is intended for stand-alone use.

This guideline updates the previous document (Version 3.0 Dec 2014). Updates include:

- Information on a **new diagnostic testing procedure for sexually transmitted infection (STI) screening** in primary care.
- A recommendation to **diagnose vaginal discharge by clinical examination in most cases**.
- New recommendations on the **specific indications for use of a HVS**.

VAGINAL DISCHARGE

Normal physiological discharge changes with the menstrual cycle. It is thick and sticky for most of the cycle, but becomes clearer, wetter, and stretchy for a short period around the time of ovulation. These changes do not occur in women using oral contraceptives¹.

The vagina is colonised with commensal bacteria (normal vaginal flora including lactobacilli) and the environment is normally acidic (pH < 4.5).

Only the patient can be aware of her own “normal” amount and type of discharge. The normal discharge may increase:

- Premenstrually
- At time of ovulation
- When commenced on HRT or hormonal contraception
- Pregnancy

CAUSES OF ABNORMAL VAGINAL DISCHARGE

Abnormal vaginal discharge is characterized by a change of colour, consistency, volume, or odour, and may be associated with symptoms such as itch, soreness, dysuria, pelvic pain, or intermenstrual or post-coital bleeding¹. It is most commonly caused by infection; less commonly, abnormal vaginal discharge can have a non-infective cause¹.

Table 1: Causes of altered vaginal discharge in women of reproductive age²

Infective (non-sexually transmitted)	Infective (sexually transmitted)	Non-infective
Candida	Chlamydia trachomatis	Foreign bodies (retained tampons, condoms, etc)
Bacterial vaginosis (BV)	Neisseria gonorrhoea	Cervical polyps and ectopy
	Trichomonas vaginalis (TV)	Genital tract malignancy
	Herpes simplex virus	Fistulae
		Allergic reactions and genital dermatoses

NON-SEXUALLY TRANSMITTED INFECTIONS

Candida²

- Vulvo-vaginal candidiasis is caused by overgrowth of yeasts, predominantly *Candida albicans* (70-90% of cases) and non-albicans species (mainly *Candida glabrata*) in the remainder.
- *Candida* thrives in oestrogenised environments thus is more common during the reproductive years and during pregnancy.
- It is more common in patients with background immunosuppression (e.g. Diabetes mellitus, steroid therapy, HIV, chemotherapy etc) or after a patient has received a recent antibiotic course. *Candida* is commonly found in individuals who are not sexually active.

Bacterial vaginosis^{2,3}

- BV is the most common cause of abnormal discharge in women of childbearing age. It may be asymptomatic or may exhibit classical clinical symptoms and signs (see table 2). The vaginal flora is dominated by many anaerobic and facultative anaerobic bacteria; concentrations may be up to a thousand-fold greater than normal. This overgrowth of anaerobic bacteria leads to an increase in vaginal pH. In BV, the pH of vaginal fluid is elevated above 4.5 and may be up to 6.0.
- There is a growing body of evidence suggesting that BV may be more common in women who are sexually active; thus it is considered 'sexually associated' rather than 'sexually transmitted'.

SEXUALLY TRANSMITTED INFECTIONS

Chlamydia trachomatis^{2,4}

- Chlamydia is caused by the obligate intracellular bacteria *Chlamydia trachomatis*.
- It is the most commonly reported curable bacterial STI in the UK, with approximately 70% of infections in people aged 16-25.
- The majority of cases in men and women are asymptomatic. However women may present with abnormal discharge due to cervicitis plus abnormal bleeding (postcoital or intermenstrual), dysuria or symptoms of pelvic inflammatory disease.

*Neisseria Gonorrhoea*⁵

- Gonorrhoea is caused by a Gram negative intracellular diplococci, *Neisseria gonorrhoea*.
- Up to 50% of women are asymptomatic but some may present with abnormal vaginal discharge, pelvic pain or dysuria.

Trichomonas vaginalis⁶

- Trichomonas vaginalis is a flagellated protozoan which is sexually transmitted.
- The organism is found in the vagina, urethra and paraurethral glands.
- 10-50% of women may be asymptomatic and the remainder may present with abnormal discharge, vulvitis and malodour (see table 2)

Herpes simplex virus⁷

- Herpes simplex virus (HSV) types 1 and 2 usually present with external genital ulceration. Occasionally, ulceration of the cervix may cause abnormal and increased vaginal discharge. This may occur in the absence of genital lesions.

NON-INFECTIVE CAUSES

- ❑ A retained foreign body such as a tampon, condom, or vaginal sponge.
- ❑ Cervical ectopy or polyps
- ❑ Tumours of the vulva, vagina, cervix, and endometrium
- ❑ Atrophic vaginitis in post-menopausal women.
- ❑ Inflammation due to allergy or irritation caused by substances such as deodorants, lubricants, and disinfectants.

Table 2: Clinical features associated with the three most common causes of vaginal discharge during the reproductive years⁸

Feature	Vulvovaginal candidiasis	Bacterial vaginosis	Trichomoniasis
Symptoms	Thick white discharge	Thin discharge	Scanty to profuse or frothy yellow discharge
	Non-offensive odour	Offensive or fishy odour	Offensive odour
	Vulval itch Superficial dyspareunia Dysuria	No discomfort or itch	Vulval itch or soreness Dysuria Low abdominal pain Dyspareunia
Signs	Vulval erythema, oedema, fissuring, satellite lesions	Discharge coating vagina and vestibule No inflammation of vulva	Vulvitis and vaginitis 'Strawberry' cervix
pH of vaginal fluid	Vaginal pH < 4.5	Vaginal pH > 4.5	Vaginal pH > 4.5
Microscopy	Yeasts and pseudo-hyphae	"Clue" cells	

MANAGEMENT OF WOMEN PRESENTING WITH VAGINAL DISCHARGE**Medical and sexual history**

It is paramount to take a history to ascertain the underlying cause of the altered vaginal discharge. The key points to be explored are documented in table 3 (see below).

Table 3: Key history points for a woman presenting with vaginal discharge

Area	Questions
Discharge	"How does it differ from your normal discharge?" <ul style="list-style-type: none">• Colour• Consistency• Volume• Malodour
Symptoms associated with the altered discharge	<ul style="list-style-type: none">• Vulval discomfort or irritation• Vulval itch• Abnormal bleeding (post-coital or intermenstrual)• Pelvic pain• Dyspareunia (deep or superficial)• Dysuria or urinary symptoms• Genital ulceration• Systemic symptoms
Sexual history	"Are you sexually active at the moment?" <ul style="list-style-type: none">• Date of last sexual contact• Regular v casual partner (s), male or female• Number of partners in past 6 months• Condom use
Medical history	<ul style="list-style-type: none">• Significant co-morbidities• ? underlying immunosuppression• Vaginal douching or excessive cleaning• Menstrual and gynaecological history• Pre-existing skin conditions or atopy
Drug history	<ul style="list-style-type: none">• Current drug history and allergies• Current contraception• ? recent antibiotic course• ? tried any home treatments for discharge

Physical examination

It should be standard practice to offer all patients with vaginal discharge a genital examination, but especially those with persistent or recurrent symptoms⁹. A chaperone should be offered for all intimate examinations¹⁰.

Genital examination should include:

- **Examination of the vulva** (erythema, swelling, fissures, dermatoses, ulcers)
- **Speculum examination** (inspection of vaginal walls, cervix, look for foreign body, discharge)
- **Abdominal palpation and bimanual examination** (only if history suggestive of pelvic inflammatory disease or upper genital tract pathology).

INVESTIGATIONS

Point of care testing for pH

The pH of vaginal discharge can be very helpful in making a diagnosis during examination (as discussed in Table 2). ***This guideline recommends that most patients should have bedside pH testing of vaginal discharge in preference to taking a HVS (see next section for details and exceptions).***

Vaginal secretions should be collected from the lateral vaginal walls using a swab or small loop. The sample should be applied to narrow range pH paper (pH 4-7). Vaginal pH testing can be used to assess the likelihood of Candida (pH < 4.5) or of BV or TV (pH >4.5) but it cannot distinguish between BV and TV². Thus a bedside diagnosis can be made on the basis of history plus clinical signs and the pH of the discharge.



High vaginal swab

A HVS is not recommended in routine cases as it is unlikely to be of significant diagnostic value¹¹.

The situations where an HVS is indicated are:

- Postnatal infection
- Pre & post termination of pregnancy
- Pre & post-operative gynaecological surgery
- Persistent or recurrent (≥ 4 episodes/year) symptoms
- Symptoms not characteristic of candida or BV



LEFT: ESwab™ liquid-based collection and transport system (new) or

RIGHT: Charcoal swab

NAATs for Chlamydia, Gonorrhoea and TV

A **symptomatic** patient with risk factors for STI should have a triple NAAT swab (either self-taken vulvo-vaginal swab or a clinician taken endocervical swab) for Chlamydia, Gonorrhoea and TV. Patients should also be offered serology for HIV and Syphilis to complete a routine sexual health screen.



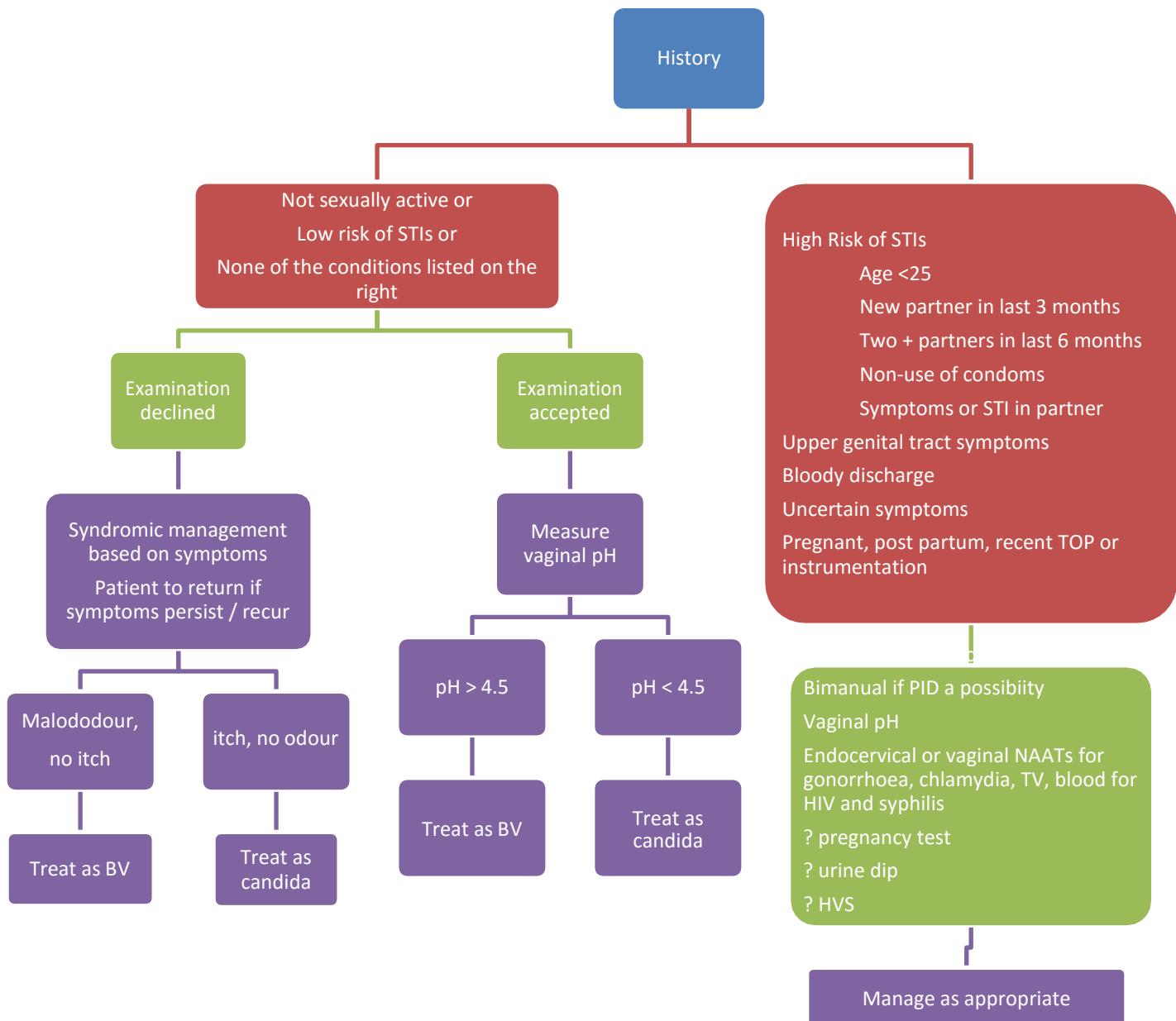
Swab for patient taken sample



Swab for clinician taken sample

Herpes simplex viral swab

- If HSV is suspected, a clinician taken swab from genital lesions is recommended.
- This will confirm HSV infection and also specify between Type 1 and Type 2 infection.
- A **black lid BD swab** should be used (same swab as cervical triple NAAT – see above).
- A **separate** swab should be taken for triple NAAT testing (see above).

Figure 1: Diagnosis of Candida, BV and TV by signs and symptoms in adult women

Indications for referral to the sexual health clinic:

- A positive gonorrhoea NAATs – ALL should be referred as due to high levels of resistance to antimicrobials and Gonorrhoea cultures are required pre-treatment
- Trichomonas infection suspected
- Failure to respond to treatment
- Diagnostic uncertainty
- Recurrent symptoms not responding to first line treatment
- Suspicion of pelvic inflammatory disease
- Partner notification

TREATMENT

Treatment should be in line with the local approved antimicrobial guidelines. A summary of the current recommendations (December 2015) are given in Table 4 below. Table 5 lists the current costs of the recommended treatments.

Table 4: Treatment of vaginal candidiasis, BV and TV

INFECTION	COMMENTS	DRUG	DOSE	DURATION OF TX
Vaginal Candidiasis BASHH PHE CKS	All topical and oral azoles give 75% cure. ^{1A+}	Oral Fluconazole ^{1A+} or Clotrimazole ^{1A+}	150mg orally 500mg pessary or 10% PV cream	stat stat
	In pregnancy: avoid oral azole ^{2B-} and use intravaginal treatment for 7 days. ^{3A+, 2,4B-}	<i>Pregnant or breastfeeding:</i> Clotrimazole ^{3A+} or Miconazole 2% cream ^{3A+}	100mg pessary at night 200mg pessary at night 5g intra-vaginally BD	6 nights ^{5C} 3 nights 7 days
	Failed vaginal candidiasis treatment.	Examine and investigate.		
	Recurrent proven candida – patients experiencing cyclical relapse that requires suppressive therapy.	Clotrimazole or Fluconazole	500mg pessary once weekly 150 mg orally For three doses Then 150 mg weekly For 6 months	for 3-6 months for 6 months

Bacterial Vaginosis BASHH PHE CKS	Oral metronidazole is as effective as topical treatment ^{1A+} but is cheaper. Less relapse with 5-7 day than 2g stat at 4 wks. ^{3A+} Pregnant ^{2A+} /breastfeeding: avoid 2g stat. ^{3A+, 4B-} Treating partners does not reduce relapse ^{5B+}	Metronidazole ^{1,3A+} or Metronidazole 0.75% vaginal gel ^{1A+} or Clindamycin 2% cream ^{1A+}	400mg BD or 2g 5g applicatorful at night 5g applicatorful at night	5 - 7 days ^{1A+} stat ^{3A+} 5 nights ^{1A+} 7 nights ^{1A+}
	Failed bacterial vaginosis treatment	Examine and investigate.		
Trichomoniasis BASHH PHE, CKS	Treat partners and refer to sexual health service ^{1B+} In pregnancy or breastfeeding: avoid 2g single dose metronidazole ^{2B-} .	Metronidazole ^{4A+}	400mg BD or 2 g	5-7 days ^{4A+} stat ^{4A+}

Table 5: Costs of recommended treatments

DRUG	DOSE	DURATION OF TX	COST
Vaginal candidiasis			
Clotrimazole	500 mg pessary	stat	£3.45 ^a
	10% PV cream	stat	£6.23 ^a
	100 mg pessary at night	6 nights	£3.50 ^a
Fluconazole	150 mg orally	stat	£1.02 ^a
Miconazole 2% cream	5 g intravaginally BD	7 days	£4.33 ^b
Recurrent vaginal candidiasis			
Clotrimazole	500mg pessary once weekly	3-6 months	£41.40-£82.80 ^a
Fluconazole	100mg oral once weekly	3-6 months	£3.63-£7.27 ^a
Itraconazole	400mg oral once monthly at the expected time of symptoms	3-6 months	£3.66 - £7.33 ^a
Bacterial vaginosis			
Metronidazole	400mg BD	7 days	£0.89 ^a
Metronidazole	2g	stat	£0.32 ^a
Metronidazole 0.75% vaginal gel	5 g applicator at night	5 nights	£4.31 ^b
Clindamycin 2%	5 g applicator at night	7nights	£10.86 ^a
Trichomoniasis			
Metronidazole	400mg BD	5-7 days	£0.89 ^a
Metronidazole	2g	stat	£0.32 ^a

= most cost effective option

= pregnancy

a - Drug Tariff. December 2014

b - Chemist & Druggist. Dec 2014

References

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