Investigation and Management of Vaginal Discharge in Adult Women

SUMMARY POINTS

- Candida infection is probably over-diagnosed whereas bacterial vaginosis is probably under-diagnosed.
- Trichomoniasis is uncommon in Oxfordshire but when found, is often associated with other sexually transmitted infections.
- Women with persistent or recurrent vaginal/vulval symptoms should be examined and investigated. Whilst vaginal discharge is not, in itself, an indication for chlamydia testing all sexually active women under the age of 25 should be offered a chlamydia screen.
- A high vaginal swab (HVS) cannot be used to diagnose gonococcal infection. A cervical swab is required but referral to a Sexual Health Clinic would be preferred.
- There is no evidence that oral treatment of candidosis is more effective than topical treatment.
- Pregnancy is not a contraindication to oral metronidazole 400mg bd for the treatment of bacterial vaginosis.

Introduction

Although GPs often diagnose and treat vaginal candidosis and bacterial vaginosis (BV) on clinical grounds there is evidence that clinical diagnoses based on signs and symptoms correlate poorly with laboratory findings. In particular candidosis is probably over diagnosed and BV under diagnosed.

These guidelines are intended to aid diagnosis and rationalise prescribing. The flow chart summarises the guidelines and is intended for stand-alone use.

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 contraceptives[1].

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 bleeding[1].

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

Version 3 - December 2014. Approved by APCO: January 2015. Review date: January 2017
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Causes of Abnormal Vaginal Discharge

Abnormal vaginal discharge is most commonly caused by infection; less commonly, abnormal vaginal discharge can have a non-infective cause[1].

***Infective cause*[1,2]:**

- Candida and bacterial vaginosis are the most common cause of discharge; diagnosis can be based on symptoms, pH and signs.
- Trichomoniasis is a less common cause of vaginal discharge in primary care but when found, is often associated with other sexually transmitted infections.
- Vaginal candidiasis caused by fungal infection with *Candida albicans*.
- Bacterial vaginosis caused by an overgrowth of anaerobic bacteria, particularly *Gardnerella vaginalis*.
- Trichomoniasis, a sexually transmitted infection caused by the protozoan *Trichomoniasis vaginalis* (TV).
- Endocervical infections caused by *Chlamydia trachomatis* and *Neisseria gonorrhoeae may cause* vaginal discharge or other symptoms such as; dysuria, post coital/intermenstrual bleeding, deep dyspareunia, pelvic pain and tenderness (if there is ascending pelvic infection), or reactive arthritis.
- *Herpes simplex* may rarely be associated with discharge.
- STIs are significantly more common in women <25 years and, in this age group, an STI screen for Chlamydia, Gonorrhoea, TV, Syphilis and HIV should always be considered. These patients may need referral to Sexual Health Clinic.
- Offer chlamydia screen to all sexually active, <25 year olds.
- *Strep. pyogenes, Haemophilus influenzae and Strep. pneumoniae* may cause vulvovaginitis in infants, young girls and occasionally adults.

Clinical features associated with the three most common causes of vaginal discharge during the reproductive years[3]

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 (external) 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	

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***Non-infective cause*[1]:**

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

When to send a swab[2]

GP submission of genital swabs for culture varies greatly from 5-40/1,000 population/year. Send high vaginal swab (HVS) if:

- postnatal
- pre & post termination of pregnancy
- pre & post operative gynae surgery
- persistent or recurrent (≥ 4 episodes/year) symptoms
- symptoms not characteristic of candida or bacterial vaginosis
- vaginitis without discharge
- Possible STI } Also send endocervical swabs
- Suspected PID }

Investigations

General Practice

Microscopy can identify candidosis and BV. BV is diagnosed when at least three out of four of the following are present:

- Homogenous white-grey non inflammatory discharge.
- pH of vaginal fluid >4.5 (Beware, the pH of normal cervical mucus is 7)
- Positive amine test (release of amine odour with 10% KOH)
- Clue cells

For practical reasons, few surgeries are able to perform microscopy or the amine test and a diagnosis of BV is usually made on the basis of symptoms +/- signs +/- pH.
Vaginal fluid pH >4.5 is a sensitive test for BV but has low specificity. A pH <= 4.5 can be useful in excluding BV in the absence of a suggestive discharge. Narrow range pH paper (pH4-6) can be obtained directly from Whatman International Ltd, Sales Department, St Leonard's Road, Maidstone, Kent, ME16 0LS, Catalogue No. 2600-102. http://www.whatman.com/PRODpHIndicatorsandTestPapers.aspx

Although clinical diagnoses correlate poorly with laboratory findings it is reasonable to treat first or occasional episodes of vaginal discharge according to clinical findings without sending specimens to the laboratory (see above and flow chart). It would be appropriate to submit occasional samples from "typical" cases of candidosis or BV to allow personal comparison of laboratory and clinical findings.

Laboratory investigation usually requires a high vaginal swab in transport medium.

Laboratory

The laboratory examines HVS specimens for clue cells, Candida and Trichomonas. Endocervical swabs are also cultured for *N. gonorrhoeae*, Chlamydia can be detected using nucleic acid amplification tests (NAAT) using special Chlamydia detection kits.

Candida is commonly present in the vagina and small numbers may not be clinically important.

Sampling[2]

- High vaginal swabs for microbiology: Obtain discharge present in vagina, place swab in charcoal - based transport medium and transport to the laboratory as soon as possible. Refrigerate at 4°C if any delay. Low vaginal swabs are to be avoided as they may be contaminated with perineal flora.
- An HVS cannot be used to diagnose Gonococcal or Chlamydia infection. Investigation of patients with risk factors for sexually transmitted infection or with mucopurulent cervicitis should preferably be carried out in the Sexual Health clinic.
- If STI considered or patient <25 years:
  - In addition to taking an HVS, sample discharge from endocervix for *Neisseria gonorrhoeae* culture; place in charcoal-based transport medium and transport immediately to the laboratory.
  - Also send endocervical swab (or vaginal swab which can be self-taken) for Chlamydia by nucleic acid amplification test (NAAT). Use Chlamydia NAAT swab kit provided by local laboratory. (Oxford = Fax order to 01865 221778 at Specimen Reception Level 4 JRH, Horton = Fax order to 01295 229225 at HGH Pathology Reception). Do NOT put Chlamydia swab in charcoal medium.

Sexual Health Clinic

Women with risk factors for sexually transmitted infections should be considered for referral to a Sexual Health Clinic, especially if they have recurrent symptoms. The main risk factors are:

- Age <25
- New partner in last 3 months
- Two or more partners in last 6 months
- Non-use of barrier contraceptives
- Symptoms or STI in partner

Sexual Health Oxfordshire

Information about contraception choices, treatment and testing for STIs, unplanned pregnancy, emergency contraception and sexual assault support in Oxfordshire can be found on; www.sexualhealthoxfordshire.nhs.uk. The website is aimed at everyone who is sexually active, not just young people.

Treatment

Treatment should be in line with the local approved antimicrobial guidelines. A summary of the current recommendations (March 2014) are given in Table 1 below. Table 2 lists the current costs of the recommended treatments.

Table 1- Treatment of vaginal candidiasis, bacterial vaginosis and trichomoniasis

INFECTION	COMMENTS	DRUG	DOSE	DURATION OF TX
Vaginal Candidiasis BASHH PHE CKS	All topical and oral azoles give 75% cure. [1A+]	**clotrimazole** [1A+] *or* oral fluconazole [1A+]	500mg pessary or 10% cream 150mg orally	stat stat
	In pregnancy: avoid oral azole [2B-] and use intravaginal treatment for 7 days. [3A+, 2,4B-]	*Pregnant or breastfeeding:* **clotrimazole** [3A+] *or* miconazole 2% cream [3A+]	100mg pessary at night 5g intra-vaginally BD	6 nights [5C] 7 days
	Failed vaginal candidiasis treatment.	Examine and investigate.		
	Recurrent proven candida – patients experiencing cyclical relapse that requires suppressive therapy.	**clotrimazole** *or* fluconazole *or* itraconazole	500mg pessary once weekly 100mg oral once weekly 400mg oral once monthly at the expected time of symptom	for 3-6 months for 3-6 months for 3-6 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 applica-torful at night 5g applica-torful 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-]. Consider clotrimazole for symptom relief (not cure) if metronidazole declined [3B+]	**metronidazole** [4A+] clotrimazole [3B+]	400mg BD or 2 g 100mg pessary at night	5-7 days [4A+] stat [4A+] 6 nights [3B+]

Table 2- Costs of recommended treatments

DRUG	DOSE	DURATION OF TX	COST
Vaginal candidiasis			
clotrimazole	500 mg pessary	stat	£3.45[a]
	10% 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% cream	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]

(green) = most cost effective option

(orange) = pregnancy

a - Drug Tariff. December 2014
b - Chemist & Druggist. Dec 2014

References

1. Clinical Knowledge Summary: Vaginal discharge. Last revised May 2013.
2. Health Protection Agency. Management of Abnormal Vaginal Discharge in Women. Quick Reference Guide for Primary Care. For Consultation and Local Adaptation. Last updated Sept 2014
3. Clinical Knowledge Summary: Candida - female genital. Last revised December 2013
4. Public Health England. Management of common Infections Guidance for Primary Care for Consultation and Local Adaptation. Produced 2010. Latest review November 2014.

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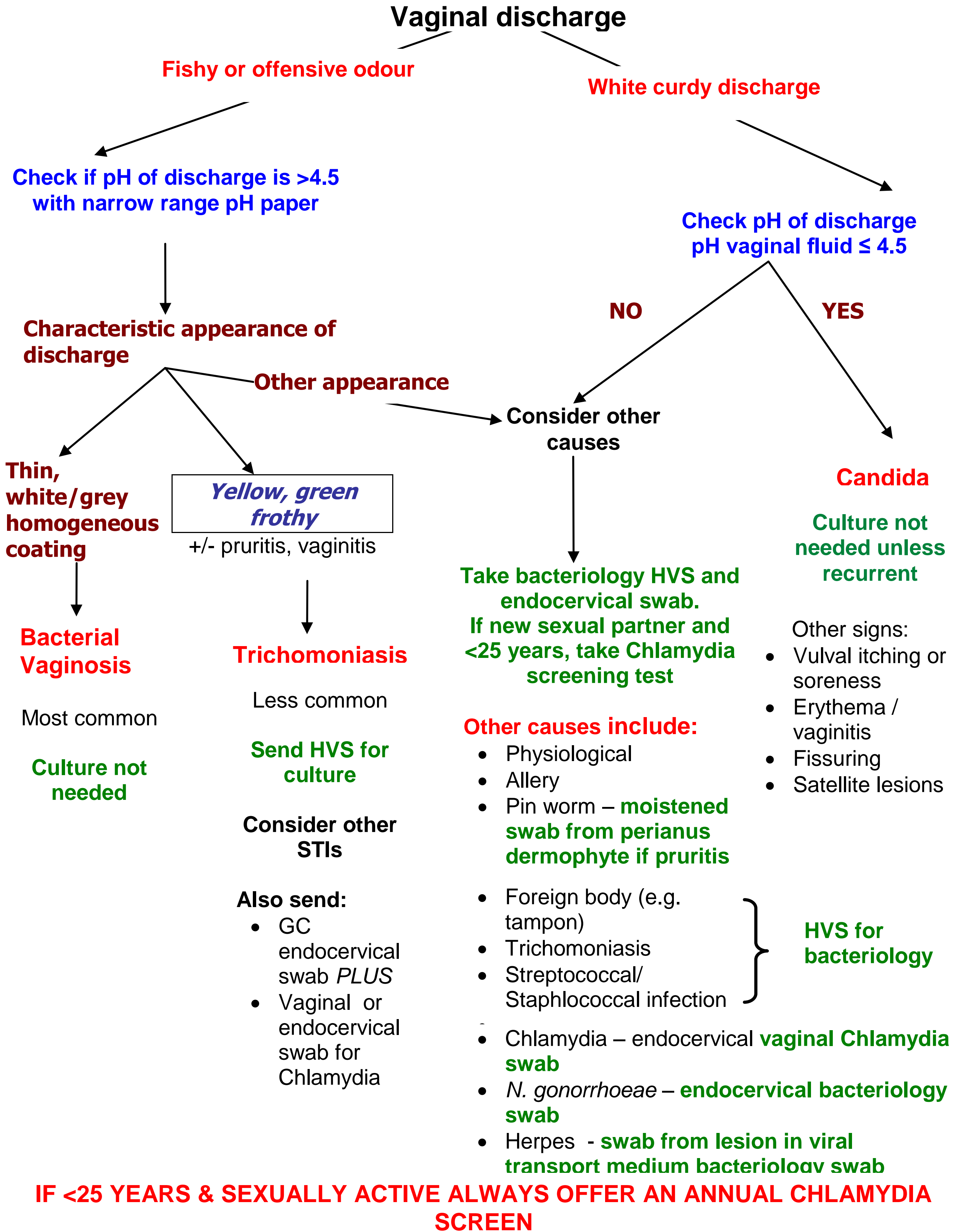
DIAGNOSIS OF CANDIDA, BACTERIAL VAGINOSIS AND TRICHOMONIASIS BY SYMPTOMS AND SIGNS IN ADULT WOMEN[2]



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