Vaginal Discharge: Causes and Management

For MIMS Clinical update conference
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Introducing myself

• GP at Leeds Student Medical Practice since Sept 2008, Partner since November 2014
• Clinical Lead for the RCGP Introductory Certificate in Sexual Health since December 2011
• GP (with specialist role in Sexual and Reproductive Health) since 2012 for COMPASS Reach North Yorkshire
• From 4th June 2015, Vice President (for Training) of the Faculty of Sexual and Reproductive Health
• Previously worked full time in GUM services, part time in SRH services in London before becoming a GP in 2007, also worked sessions at the Leeds Centre for Sexual Health 2011-2013
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Potential conflicts of interest

• Sessional role at the **RCGP**-employed
• Role at the **FSRH**-voluntary

• **BAYER HealthCare**
  • to attend conferences- ESC 2010, ESG 2011, ESC 2014
  • financial support to my Practice to undertake investigator-sponsored study 2010
  • Published in Journal of FP&RHC 2012
  • payment to give a talk at the Primary Care Womens Health forum meeting in Sheffield 2012

• **PFIZER**
  • Payment to give a talk on contraceptive choice 2014

• **MSD**
  • Financial support to my Practice to undertake investigator-sponsored study 2012, awaiting publication
Vaginal discharge causes and management

- Asking the right questions
- Identifying causes/differential diagnoses
- Managing causes
- Red flags
- When to refer?
Commonest causes

- Physiological
- Infective
  - STI and non-STI
- Non-infective
Physiological discharge

- Is normal and healthy for women of reproductive age to have some degree of vaginal discharge
- Quality/type of cervical mucus changes through the menstrual cycle
- Before ovulation, estrogen rises, altering mucus from thick/sticky (non-fertile) to clearer/wetter/stretchy (fertile)
- After ovulation, progesterone levels increase, mucus becomes thick/sticky/hostile to sperm once more
- Can be diagnosis of exclusion
Physiological discharge

• During fertile part of menstrual cycle
Normal vaginal flora

• At puberty, vagina becomes colonised with lactobacilli which produce lactic acid
• Normal vaginal pH is \( \leq 4.5 \) ie acidic
• other commensals present can give a change in discharge if ‘overgrow’
  • Candida albicans
  • Staphylococcus aureus
  • Group B Streptococci
Non-infective causes

- Foreign bodies (tampons and condoms)
- Cervical polyps and ectopy
- *no evidence that treatment of ectopy with silver nitrate/cautery of any value*
- Genital tract malignancy
- Fistulae
- Allergic reactions
Infective causes

- **Non STI**
  - Bacterial Vaginosis (BV)
  - Candida

- **STI**
  - *Chlamydia trachomatis*
  - *Neisseria gonorrhoeae*
  - *Trichomonas vaginalis*
  - Herpes simplex virus (HSV)
Bacterial Vaginosis

Normal vaginal cells seen under a microscope.

"Clue Cells", vaginal cells with bacteria stuck to them.
Bacterial Vaginosis background

- Commonest cause of abnormal vaginal discharge in women of reproductive age
- Can occur and remit spontaneously
- Characterised by overgrowth of mixed anaerobic organisms that replace normal lactobacilli, leading to increase in pH
- ‘if the pH is over 5, BV is alive!’
- BV is not proven as an STI but has some links with sexual behaviour
Bacterial Vaginosis associations

- Recent change in sexual partner
- Presence of an STI, has been found in chlamydia/herpes/pelvic inflammatory disease
- Women who have sex with women
- Ethnicity
- Presence of an IUCD
- 2nd trimester pregnancy loss
- Pre-term delivery
- Pre-term premature rupture of membranes
- Post-partum endometritis
- Post-TOP endometritis
Bacterial Vaginosis presentation

- **Symptoms**
  - Malodorous discharge
  - NOT associated with-
  - Soreness
  - Itch
  - irritation

- **Signs**
  - Thin white discharge
  - Coating walls of the vestibule and vagina
  - NOT associated with inflammation
  - pH>4.5
Bacterial Vaginosis diagnosis

- In GUM settings
- Three different possible approaches
  - Amsels criteria
  - Hay/Ison criteria
    *BASHH recommends*
  - Nugent criteria
- all involve the use of light microscope

- Outside GUM settings
- High vaginal swab??
  - Limited use as organisms as commensals
  - How is a HVS reported in your lab?
- Narrow range pH paper
Bacterial Vaginosis management

- General vulval advice
- Avoid vaginal douching
- Avoid perfumed products
- Avoid antiseptics in the bath
- Stop smoking
- Treatment indicated for
- Symptomatic women
- Women undergoing some surgical procedures

- Advise can recur
- Advise is NOT STI
- Though test for other STIs if not done already
Bacterial Vaginosis management

- Metronidazole 400mg bd 5-7d
- Metronidazole 2g stat dose
- Intravaginal metronidazole gel (0.75%) od 5d
- Intravaginal clindamycin cream (2%) od 7d

- Alternatives
  - Tinidazole 2g stat dose
  - Clindamycin 300mg bd 7d

All these treatments have achieved cure rates of 70-80% after 4 weeks, 2g metronidazole may be slightly less effective at 4wk compared to longer course
Allergy to metronidazole uncommon
Bacterial Vaginosis management

- Avoid concomitant use of alcohol with metronidazole due to risk of disulfiram-like reaction
- Pseudomembranous colitis has been reported with both oral and intravaginal clindamycin
- * in BASHH guideline 2012, no proven efficacy for non-antibiotic based treatment with probiotic lactobacilli or lactic acid preparations*
Recurrent bacterial vaginosis

- No formal definition!
- In trials
- 0.75% MTZ gel twice weekly for 16 weeks
- Application of probiotic lactobacilli days 1-7, 15-21
- Both had lower recurrence rates compared to placebo
- Acigel (acetic acid gel) no longer available in the UK
- Lactic acid gel (eg BalancActiv) not evaluated adequately in RCTs
Candida
Candida background

- Common in women of reproductive age
- In 70-90% cases is *Candida albicans*
- Non-albicans types
  - *Candida glabrata*
  - *Candida krusei*
  - *Candida tropicalis*
- Presence of candida vulvo-vaginally does NOT necessarily require treatment unless symptomatic, as up to 20% women will have colonisation
Candida associations

- Estrogenised state
- Reproductive years/pregnancy
- Diabetes mellitus
- Immunosuppressed host including HIV

- Some links to allergy in recurrent candida - see later slides
Candida presentation

- **Symptoms**
  - Itch
  - Soreness
  - Discharge-white/thick/‘cottage cheese’like
  - Superficial dyspareunia
  - Dysuria

- **Signs**
  - Erythema
  - Fissuring
  - Non-offensive discharge
  - Oedema
  - Satellite lesions
  - Excoriation

- None of these findings are pathognomonic and testing should support diagnosis
Candida diagnosis

• In GUM settings
  • Test taken from SYMPTOMATIC women only
  • On examination
  • Gram stain/microscopy
  • Culture, plated on to fungal media

• In non-GUM settings
  • High vaginal swab
  • How is it reported in your lab?
  • In Leeds, ‘yeasts’ 1, 2 or 3 +
Candida management

• Routine use of emollient as soap substitute/skin conditioner (NOT internal use)
• Avoid tight fitting synthetic clothing
• Avoid local irritants, such as perfumed products

• WRITTEN INFORMATION
• IS NOT AN STI
• Though offer tests for STI
• HIV testing
• May recur

• Variety of treatment options listed in BASHH guideline
• All giving clinical/mycological cure rate of over 80%
• Choice is matter of personal preference, availability and affordability
Candida management

- **Topical-eg**
  - Clotrimazole 500mg stat pessary
  - Clotrimazole 200mg x 3 nights pessary
- **Nystatin vaginal cream** 4g x14 nights
- **Nystatin pessary** 1-2 x14 nights

- **Oral-eg**
  - Fluconazole 150mg capsule stat
  - Oral treatments NOT SAFE IN PREGNANCY
  - Topical treatments can damage latex condoms and diaphragms
Recurrent candida

- **Definition**
  - At least 4 documented episodes of symptomatic vulvovaginal candida annually, with at least partial resolution of symptoms between episodes
  - Positive microscopy OR a moderate/heavy growth of *C. albicans* should be documented on at least 2 occasions
  - Approximately 5% of women with primary episode of candida will develop as recurrent condition
  - So many women suspected to have recurrent candida may have allergy or vulval dermatosis eg contact dermatitis/eczema/psoriasis/lichen sclerosus
Recurrent candida

- Due to host factors rather than more virulent strain
- Uncontrolled diabetes mellitus
- Hyperoestrogenaemia
- 30-40% women colonised in pregnancy
- Immunosuppression
- Disturbance of vaginal flora eg broad spec antibiotics
- Link to allergy
Recurrent candida further investigation

- Speciation for candida types
- As non-albicans can be resistant to azoles
- Nystatin pessaries/boric acid PV/amphotericin B PV/flucytosine PV

- FBC
- Random blood glucose

- No link with low ferritin or low zinc
- Insufficient evidence to make any dietary recommendations
- No evidence of use of lactobacilli
- No evidence to recommend tea tree oil
Recurrent candida management

• First line regimen recommended
  • Induction
  • Fluconazole caps 150mg every 72hrs x3 doses

• Maintenance
  • Fluconazole caps 150mg once a week 6mths

• About 90% of women will remain disease-free at 6 months and 40% at one year
• Could add cetirizine 10mg od if relapses during treatment (6 months)
• Zafirlukast 20mg bd 6 months may induce remission
Trichomonas vaginalis
Trichomonas vaginalis background

- Flagellated protozoan that causes vaginitis
- Always sexually transmitted
- 10-50% women are asymptomatic
Trichomonas vaginalis associations

- Detrimental outcome in pregnancy
- Associated with pre term delivery
- Associated with low birth weight
- May predispose to post partum maternal sepsis

- Growing evidence that TV infection may enhance HIV transmission
Trichomonas vaginalis presentation

- **Symptoms**
  - Vaginal discharge, often offensive
  - Itch
  - Dysuria
  - Lower abdominal pain (can give a PID picture)

- **Signs**
  - Discharge
  - Text book ‘yellow frothy’ in only 10-30% of women with TV
  - Vulvitis
  - Vaginitis
  - Cervicitis
  - Textbook ‘strawberry cervix’ in 2% of affected women
  - pH>4.5
Trichomonas vaginalis diagnosis

- In GUM setting
  - Wet preparation slide
  - Drop of saline
  - Examine within 10 mins of collection—see organisms swimming about

- TV culture
- Molecular detection tests may be increasing used in future

- In non-GUM setting
  - High vaginal swab
  - Take from posterior fornix (discharge pooling there)
  - How can you request from your lab?
  - Eg Leeds, must specifically request TV
Trichomonas vaginalis management

- Advise is an STI
- Test for other STIs if not done so already, including HIV
- Written information
- Partner notification
- ABSTAIN FROM SI until completion of treatment period
- TEST and TREATMENT OF SEXUAL PARTNERS simultaneously
- Follow up at 2 weeks- TEST OF CURE ONLY IF REMAINS SYMPTOMATIC
Trichomonas vaginalis management

- Metronidazole 2g stat dose
- Metronidazole 400mg-500mg bd 5-7d—may be more effective

- alternative
- Tinidazole 2g stat dose

- No effective alternative!
- Desensitisation to metronidazole would be indicated in case of allergy
Trichomonas vaginalis management

- ‘Treatment failure’
- Usually due to inadequate therapy
- Or re-infection
- Or resistance

- Check sexual history
- BASHH TV guidelines gives protocol for non-response to standard therapy
Other infective causes of vaginal discharge

- Chlamydia trachomatis
  - ASYMPTOMATIC in up to 70% women
  - Treatment of lower genital tract infection with azithromicin 1g stat

- Gonorrhoea
  - ASYMPTOMATIC in >>>>>>>% women
  - Refer all positives to GUM for treatment due to increasing antibiotic resistance

- So presence of discharge is not a sensitive indicator of an STI

- Both can give similar symptoms to candida/BV/TV
- **Herpes simplex virus**-cervical/vaginal sores can give vaginal discharge
Holistic management of woman presenting with vaginal discharge

- **History**
- Concerns/expectations
- **Sexual history**
- Assessment of symptoms, including characteristics of discharge and presence of associated symptoms
  - *beware past history candida/BV, as studies suggest women with previous confirmed episodes not good at self diagnosis*
- Past medical history, including dermatoses
- Drug history including OTC use, contraceptive use
- Give consideration to non-infective causes during history taking
- Vulval care routine
Holistic management of woman presenting with vaginal discharge

- Examination/point of care investigation/STI testing
- Should be standard practice to examine all attending with genital symptoms
- STI testing should be offered to ALL sexually active women (as identified in sexual history taken)

- Inspection of external genitalia
- Speculum examination
- HVS
- Candida/BV/TV
- Vaginal walls/under cervix
- pH
- Endocervical/clinician taken vulvo-vaginal swab (sampling around urethra in addition)
- For gonorrhoea and chlamydia
- Eg in Leeds, can be done on one swab-HOW DOES IT WORK IN YOUR LAB?
- Testing for syphilis and HIV
Holistic management of woman presenting with vaginal discharge

- Declines examination
- Syndromic treatment based on clinical and sexual history
- Safety net regarding follow up

- Accepts examination
- treatment based on clinical history/sexual history/macroscopic findings on examination/pH
- Discuss access to results/follow up
Other aspects of management

- Explanation and written information
- Leaflets from the FPA
- BASHH are also producing, on their website
- Condom use
- Opportunity for discussion on contraception
- Partner notification if appropriate
- Information on risk reduction based on sexual history
Vaginal discharge in pregnancy

- Candida more common
- Oral candida treatments contraindicated in pregnancy
- May need longer treatment regimens
- BV associated with adverse pregnancy outcomes
- Avoid larger/stat dose in pregnancy/breastfeeding
- TV associated with adverse pregnancy outcomes
- Follow treatment advice as for BV
- Inform obstetrician of testing/treatment
- Hand held notes?
Sexual history taking
core components

• Last sexual intercourse (LSI)
• **Partner gender/sites of exposure*/condom use**
• Previous sexual partner (PSP) as for LSI
• Women: LMP/contraception/cytology
• HIV risk history
• Hep B and C risk assessment
• Any child protection concerns?
• Access to results
• * most practitioners worry about asking this
Sexual history taking core components

- Current/past use of injecting drugs, personal history or that of partners
- SI with anyone from abroad
- SI with men/bisexual partner
- Medical treatment abroad inc. transfusions
- SI with HIV positive partner
- Sex work

- History of HIV testing
- *tattoos
Are there any **red flags**?

- Low threshold for examination
- Will not miss foreign bodies which typically give BV
- Self reported ‘thrush’ has been found to be Herpes simplex infection
- Low threshold for repeat testing
- Bimanual pelvic examination may not be indicated at first assessment if no abdominal pain, but reassess in persisting symptoms
- Undertake tests as ‘package’ with BV/candida/TV/chlamydia/gonorrhoea so if excluded, consider other causes
When to refer?

- What can you do in your practice/within your competencies?
- May need to refer when
- Unable to undertake partner notification
- Gonorrhoea culture needed in case of positive NAAT test or contact of gonorrhoea
- Failure to respond to treatment
- Diagnostic uncertainty
- Suspected Pelvic Inflammatory disease

- Referral to GUM with a letter
- As more likely to get letter in return

- Is there anyone in your local GUM clinic with interest in recurring BV/Candida?

- What does gynaecological referral offer??
Vaginal discharge causes and management

Key messages

- Physiological and infective (Non-STI) are most common causes
- Self diagnosis not reliable
- Don’t forget TV
- Narrow range pH paper really useful

- Low threshold for examining
- Test for ‘package’ of tests
- Low threshold for repeat testing
- Caution with label of recurrent BV/candida
- Vaginal treatments can affect latex condoms/diaphragms

- SEXUAL HISTORY MUST BE PART OF ASSESSMENT
- Much can be managed in primary care
- Little need to refer onwards, refer to GUM in first instance
Vaginal discharge causes and management

- Asking the right questions
- Identifying causes/differential diagnoses
- Managing causes
- Red flags
- When to refer?
References

• FSRH clinical guidance-Management of vaginal discharge in non-genitourinary medicine settings, CEU February 2012
• RCGP/BASHH STIs in Primary Care 2013
• BASHH guidelines
• Bacterial vaginosis 2012
• Vulvo-vaginal candidiasis 2007
• Trichomonas vaginalis 2014
• Vulval conditions 2014
• Consultations requiring sexual history taking 2013
• Standards for the management of STIs 2014

• All freely available on respective websites
THANK YOU

5 minutes for questions