SEXUALLY TRANSMITTED INFECTIONS

VAGINAL DISCHARGES

Keywords: STI, sexually transmitted infection, vaginitis, vaginal discharge, elevated vaginal pH

AIM

- To guide the correct diagnosis, testing and treatment of vaginal discharges and vaginitis.

BACKGROUND

The keystones to diagnosing and treating vaginal discharges are:

- Taking a medical and sexual history
- Physical / genital examination
- Vaginal pH testing (normal pH is <4.5)
- Providing an air dried smear of the discharge for gram stain
- Excluding gonorrhoea and Chlamydia infection
- Cultures of vaginal discharge.

A vaginal discharge may have originated from the vagina, cervix or upper genital tract. In women under the age of 25, chlamydia should always be considered as a concomitant infection even if the presumptive diagnosis is candidiasis. As clinical tests do not always reflect the severity of the condition, it is useful to have objective measurements of:

- The amount, consistency, odour and colour of the vaginal discharge
- Documentation of:
  - Vulval erythema
  - Vaginal erythema
- Bimanual examination for forniceal or uterine tenderness should also be done.

TESTING OF VAGINAL DISCHARGE

1. See relevant Clinical Guidelines for investigations and the procedure for collecting specimens.
2. Urethral, vaginal and endocervical microscopy and culture should be taken as well as a urine and endocervical PCR test for Chlamydia trachomatis.
3. Smears of secretion from the urethra, vagina and endocervix should be placed on the slide appropriately labelled and air dried.
4. Both urethral and endocervical samples should be taken to improve the likelihood of detecting gonorrhoea or chlamydia.
5. Testing of pH can be performed with a pH meter or narrow range pH paper (pH 4-6). The vaginal secretion is taken from the entrance of the vagina, placed on the paper or meter and then read after 30 seconds (samples taken further up the vagina may contain cervical secretions that may lead to a falsely raised pH reading). Use either a loop or swab to obtain vaginal secretions or press the pH paper against the vaginal wall. Litmus paper must not be used. Holding the paper with a bright light behind can assist in identifying any colour change.
6. Patients with an elevated pH can be presumptively treated with Metronidazole rather than inappropriately being given anti fungal agents.
CAUSES OF AN ELEVATED VAGINAL PH (>4.5)

Pathological
- Bacterial vaginosis
- Trichomoniasis
- Gram negative or faecal bacteria overgrowth
- Miscellaneous discharges including desquamative inflammatory vaginitis
- Absent lactobacillus syndrome
- Atrophic vaginitis.

Physiological or other cause
- Patient is menstruating
- Post menopause (and not on hormone therapy)
- Unprotected sexual intercourse within 24 hours of examination
- Sampling of cervical rather than vaginal secretion
- Contamination by the examiners glove touching the pH strip.

Note: An elevated vaginal pH may contribute to HIV susceptibility.

THE VALUE OF MICROSCOPY AND A GRAM STAIN SMEAR
The laboratory should ideally comment on white cells, red cells, vaginal epithelial cells, clue cells, lactobacilli, other bacteria and yeasts. For urethral and endocervical smears the presence or absence of Gram negative intracellular diplococci (GNID) should be included.

Interpretation of a Report
- Note whether lactobacilli are present of not. If the laboratory has not provided this information, it is imperative that you request this information from them. The normal vaginal flora seen on a gram stain consists of 95% lactobacilli; therefore if they are not present, significant vaginal pathology is present and warrants investigation and treatment.
- Normal white cell count on vaginal smears is < 5/hpf. If the count is > 30hpf, a severe inflammatory vaginitis is present.
- Clue cells with an altered bacterial flora usually indicate bacterial vaginosis.
- Yeasts indicate a Candida infection and the presence of hyphae indicates active infection.
- Immature epithelial cells indicate a severe vaginitis unless the woman is post menopausal.
- If Desquamative Inflammatory Vaginitis is suspected, perform vaginal cytology and request a cellular maturation index.
**INTERPRETING THE WOMAN’S GRAM STAIN REPORT**

<table>
<thead>
<tr>
<th>DISEASE/GRAM STAIN</th>
<th>CANDIDIASIS</th>
<th>GONORRHOEA</th>
<th>CHLAMYDIA</th>
<th>NON-SPECIFIC VAGINITIS*</th>
<th>BACTERIAL VAGINOSIS</th>
<th>TRICHOMONIASIS</th>
<th>GRAM NEGATIVE BACTERIAL OVERGROWTH</th>
<th>ATROPHIC VAGINITIS</th>
<th>DESQUAMATIVE INFLAMMATORY VAGINITIS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sample site</strong></td>
<td>Vagina</td>
<td>Urine/urethra/cervix</td>
<td>Urine/urethra/cervix</td>
<td>Vagina</td>
<td>Vagina</td>
<td>Vagina</td>
<td>Vagina</td>
<td>Vagina</td>
<td>Vagina</td>
</tr>
<tr>
<td><strong>White cell count</strong></td>
<td>Normal or increased</td>
<td>Normal or increased</td>
<td>Normal or increased</td>
<td>Increased</td>
<td>Normal/occasionally increased</td>
<td>Increased</td>
<td>Few/normal/increased</td>
<td>Increased</td>
<td>Increased</td>
</tr>
<tr>
<td><strong>Red cells</strong></td>
<td>Absent</td>
<td>Absent</td>
<td>May be present</td>
<td>Absent</td>
<td>May be present</td>
<td>Absent</td>
<td>May be present</td>
<td>Absent</td>
<td>Absent</td>
</tr>
<tr>
<td><strong>Clue cells</strong></td>
<td>Absent</td>
<td>Absent</td>
<td>Absent</td>
<td>Absent</td>
<td>Present</td>
<td>Absent</td>
<td>Absent</td>
<td>Absent</td>
<td>Absent</td>
</tr>
<tr>
<td><strong>Lactobacilli</strong></td>
<td>Moderate or many</td>
<td>Present/ or not seen</td>
<td>Present/ or not seen</td>
<td>Present</td>
<td>Absent or few</td>
<td>Absent or few</td>
<td>Few/normal</td>
<td>Absent</td>
<td>Absent</td>
</tr>
<tr>
<td><strong>Bacterial flora</strong></td>
<td>Normal</td>
<td>Normal except GNID</td>
<td>Normal</td>
<td>May be increased numbers of gram positive cocci</td>
<td>Many Gram-variable coccobacilli</td>
<td>Many Gram positive and negative bacteria</td>
<td>Many Gram negative rods</td>
<td>May be incr. no's Gram pos cocci, diphtheroids &amp; nonacidophilic coliforms</td>
<td>Many Gram positive cocci</td>
</tr>
<tr>
<td><strong>GNID</strong></td>
<td>Absent</td>
<td>Present</td>
<td>Absent</td>
<td>Absent</td>
<td>Absent</td>
<td>Absent</td>
<td>Absent</td>
<td>Absent</td>
<td>Absent</td>
</tr>
<tr>
<td><strong>Yeasts</strong></td>
<td>Present - hyphae</td>
<td>Absent</td>
<td>Absent</td>
<td>Absent</td>
<td>Absent</td>
<td>Absent</td>
<td>Absent</td>
<td>Absent</td>
<td>Absent</td>
</tr>
</tbody>
</table>

**Treatment (adults)**

Alternate treatments may be available (e.g. child, pregnancy, resistance). See specific guidelines

1, 3, 7 day courses of antifungal creams or pessaries* i.e. clotrimazole, miconazole, econazole. Fluconazole 150mg1 po is as effective as above treatments but cannot be used in pregnancy. See Candida protocol for more information

Ceftriaxone 500mg IM AND Azithromycin 1g (oral) stat*1, 2

Also treat for Chlamydia Contact tracing4. See gonorrhoea protocol for more information

Azithromycin 1 gm stat OR Doxycycline oral 100mg bd 7 days1 Contact tracing4. Test of cure in 4 weeks (it takes 3 weeks for the PCR test to become negative) and 3 months. See Chlamydia protocol for more information

200mg povidone-iodine vaginal pessaries Available through TGA as no longer commercially available in Australia

Metronidazole 400mg bd for 5 days OR Tinidazole 2g stat OR Tinidamycin 2g stat OR Clindamycin 2% PV cream for 7 days.4 See Bacterial Vaginosis protocol for further details

Tinidazole 2g stat OR Metronidazole 2 gm stat1 Avoid alcohol while on treatment.1 See Trichomoniasis protocol for further details

Clindamycin 2% Vaginal cream for 1-2 weeks

Metronidazole 2 g stat

Clindamycin 2% vaginal cream for 2 weeks.

Avoid alcohol while on treatment.

Clindamycin 2% Vaginal cream for 1-2 weeks

See maintenance therapy as required6

DPMS 7449

All guidelines should be read in conjunction with the Disclaimer at the beginning of this manual
**VAGINITIS**¹

Symptoms include odour (e.g. in bacterial vaginosis or trichomoniasis), itch (candidiasis), Vulval swelling or soreness (trichomoniasis or candidiasis), and increased (noticeable to the woman) vaginal discharge.¹ Signs include increased discharge pooling at the posterior fornix or adhered to the vaginal walls (speculum examination). Note the colour, consistency, odour and any vaginal wall inflammation.¹

**Atrophic Vaginitis**

- Symptomatic atrophic vaginitis is uncommon however some women have vaginal dryness, spotting, discharge, burning, pruritus or dyspareunia.³ Some women can have severe inflammation with very few symptoms. Screening of postmenopausal women is important as atrophic vaginitis is a common finding in 10-50% of postmenopausal women.³
- Symptomatic lack of oestrogen results in thinning of the genital skin and absence of glycogenation, erythema, some discharge and contact bleeding.³ The vaginal pH is high >5.³
- Treatment is individualised to the woman, with non-hormonal lubricants and either local oestrogen³ - Vagifem 25mcg PV² or oestriol cream 0.5g PV twice weekly for at least 6 months to reduce the risk of relapse, however symptomatic improvement occurs usually within 4 weeks. Women with breast, endometrial or ovarian cancer should discuss hormonal treatments with their oncologist prior to use.³

**Desquamative Inflammatory Vaginitis**

- This is an uncommon, chronic, purulent vaginitis and the aetiology is not understood.⁶ Symptoms can be nonspecific and have often been ongoing for over 12 months as the diagnosis is difficult except in experienced hands. Diagnosis requires first excluding other causes of purulent vaginitis.⁶
- Main symptoms include dyspareunia and discharge that is characteristically purulent, without an odour. There is often intense vestibulo-vaginal irritation / erythema, however these findings often resolve with just one course of therapy making diagnosis difficult if treatment had been given prior to the patient being referred in for treatment.
- The classical laboratory features are an increase in inflammatory cells and the presence of parabasal cells, leukocytosis, elevated vaginal pH (>4.5), many gram positive cocci and a lack of lactobacilli.
- Relapse is common (in around 30%), so long term observation for several months is recommended, using maintenance treatment as required.⁶

**CERVICITIS**¹

Visualised inflammation (red, swollen, contact bleed, discharge) and >30 white blood cells (WBC/HPF).¹ The woman may be asymptomatic with minimal discharge, or may observe yellow discharge, dysuria, or spotting after intercourse.⁷
REFERENCES (STANDARDS)


National Standards – 1.8, 3.11, 3.13 & 4.
Legislation - Health Act 1911; Privacy Act 1988
Related Policies -
Other related documents –
- Dept of Health WA: Fact Sheets: Bacterial Vaginosis; Chlamydia; Gonorrhoea; Thrush (Candidiasis); Trichomoniasis; Silverbook 4.7; Toolbox: Fact Sheets
- KEMH Clinical Guidelines Section: Chlamydia in pregnancy; Sexually Transmitted Infections
- KEMH/PMH Pathwest Laboratory Medicine WA Pathology Handbook (2012)
- Let Them Know website (for advice/ fact sheets and ways of informing sex partners, including anonymous)
- http://www.couldihaveit.com.au (Community resource from DoH WA)
- WA STI Education Project (ECU / DoH WA: Online learning package for health professionals)

RESPONSIBILITY
Policy Sponsor Nursing & Midwifery Director OGCCU
Initial Endorsement August 2010
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Do not keep printed versions of guidelines as currency of information cannot be guaranteed.
Access the current version from the WNHS website.