Vaginitis: Diagnosis and Management

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Presenter Disclosure Information

The following relationships exist related to this presentation:
► Martin A. Quan, MD: No financial relationships to disclose.

Off-Label/Investigational Discussion
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Learning Objectives

- Generate the differential diagnosis of a vaginal discharge
- Discuss the role of the office laboratory in diagnosing vaginitis
- Prescribe effective treatment for infectious vaginitis

Vaginitis

- one of the most common gynecologic disorders
- 10 million office visits/year and 7% visits to gynecologists
- 1% antibiotics prescribed in ambulatory setting

Vaginitis: Differential Diagnosis

- Infectious vaginitis - 60%
  - Bacterial vaginosis
  - Candida vaginitis
  - Trichomonas vaginitis
- Cervicitis - 20%
- Normal discharge - 10%
- Atrophic vaginitis
Differential Diagnosis (con’t)
- Psychosomatic vaginitis
- Iatrogenic vaginitis
  - Foreign body vaginitis
  - Allergic / irritant vaginitis
- Miscellaneous
  - Cervical polyps/ neoplasms
  - Vulvar and vaginal neoplasms
  - Macerated condylomata

Useful historical items
- age
- menstrual status
- characteristics:
  - onset
  - color
  - consistency
  - viscosity

Associated symptoms
- pruritis
- burning
- malodor
- dysuria
- dyspareunia

Historical items
- Past medical history
  - diabetes
  - recent infection
  - medications
  - method of contraception
- Sexual history
- Hygienic practices

Physical examination
- careful gynecologic exam
- inspection of discharge
- close examination of vulvovaginal area
- careful inspection of cervix

Office Laboratory Methods
- vaginal pool wet mount
- saline prep (0.9 % saline)
- KOH prep (10% )
- “whiff” test: (+) in BV
- vaginal pH: normal 3.5 to 4.5
- “Q-tip” test: (+) in cervicitis
“Q-tip” test:
Mucopurulent cervicitis

Office Laboratory (con’t)
- vaginal cultures- used on selective basis
  - Trichomonas:
    - modified Diamond’s, Trichosel, InPouchTV
  - Candida:
    - Sabouraud’s, Nickerson’s media

Physiologic discharge
- responsible for 10 percent of cases of vaginal discharge
- composed of vaginal squamous cells suspended in fluid medium
- clinical characteristics:
  - clear to slightly cloudy
  - non-homogeneous
  - highly viscous

Normal vaginal discharge
- not associated with:
  - itching
  - burning
  - malodor
- normal increase in volume
  - ovulation
  - following coitus
  - after menses
  - during pregnancy

Vaginal pH
- normal: pH of 3.5 to 4.5
- pH over 4.5 is abnormal:
  - 81 to 97% of bacterial vaginosis
  - 60% of Trichomonas vaginitis
- invalid if specimen contaminated with semen, blood, douche preps, cervical secretions
- obtain from lateral fornix

Bacterial vaginosis
Diagnostic criteria (requires 3 of the 4):
- 1. thin, homogeneous discharge
- 2. vaginal pH over 4.5
- 3. positive “whiff” test
- 4. clue cells on wet mount
Vaginal pool wet mount

Increased number of white cells:
- > 10 wbc/hpf
- > 1 wbc per epithelial cell
- increase in cervicitis, trichomonas
- variable in candida
- reduced number in B. vaginosis

Mgmt of Bacterial vaginosis

- Metronidazole - 1st generation nitroimidazole regarded by many as “drug of choice”
- 500 mg BID x 7 days still “gold standard” (Phieffer, NEJM 1978)

Mgmt of Bacterial vaginosis

ORAL:
- clindamycin 300 mg BID x 7 days

TOPICAL:
- vaginal metronidazole gel 0.75%: 1 applicatorful qd or bid x 5 d
- vaginal clindamycin cream 2%: 5 g q d x 7 d
- vaginal clindamycin ovules: 100 mg qhs x 3 days

Mgmt of Bacterial vaginosis

Worst-case efficacy

<table>
<thead>
<tr>
<th>DOSE</th>
<th>relapse after 4 wk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metronidazole 500 mg BID x 7 d</td>
<td>20 %</td>
</tr>
<tr>
<td>Metronidazole 2 g x 1 dose</td>
<td>50 %</td>
</tr>
<tr>
<td>Metronidazole vaginal gel</td>
<td>34 %</td>
</tr>
<tr>
<td>Clindamycin vaginal cream</td>
<td>42 %</td>
</tr>
<tr>
<td>Clindamycin vaginal ovules</td>
<td>49 %</td>
</tr>
</tbody>
</table>


Mgmt of Bacterial vaginosis

Tinidazole (2nd generation)

- FDA approval in 2007 for treatment of BV
- 2 grams (4 tabs) once daily x 2 d* or 1 gram (2 tabs) once daily x 5 d

* 2010 STD Guidelines rec. 3 days
Mgmt of male in B. vaginosis

- No benefit:
  - Eschenbach, Scand J Inf Dis 1983
  - Swedberg, JAMA 1985
  - Vejtorp, Brit J Ob Gyn 1988
  - Moi, Genitourin Med 1989
  - Vutyavanich, Ob Gyn 1993
  - Colli, Genitourin Med 1997
- Benefit:
  - Mengel, J Fam Pract 1989

Mgmt of Recurrent B.V.
(Sobel et al, Am J Ob Gyn 2006;194:1283)

Prospective RCT of 112 women with recurrent BV following 10-day course of metronidazole gel
- 0.75% metronidazole gel BIW vs placebo x 16 weeks with 12-week post-Rx F/U
- RR = 0.43 (CI = 0.25-0.73) during Rx
- RR = 0.70 at end of 28 wk study period
- Adverse side effect: Candida vaginitis

Mgmt of Topical imidazole agents

- Single-day regimens:
  - clotrimazole 500 mg vaginal tab
  - tioconazole 3%-300 mg/d x 1 d
- 3-day regimens:
  - butoconazole 2%-120 mg/d x 3 d
  - clotrimazole 1%-200 mg/d x 3 d
- 7-day regimens:
  - miconazole 2%-100 mg/d x 7 d
  - clotrimazole 1%-100 mg/d x 7 d

Mgmt of Candida vaginitis

- Polyene antifungal agent:
  - nystatin 100,000 units/d x 7 to 14 d
- Triazole antifungal agents
  - vaginal terconazole (Terazol®) cream 0.4%-20 mg/d x 7 d
  - cream 0.8%-40 mg/d x 3 d
  - suppository-80 mg/d x 3 d
  - oral fluconazole (Diflucan®) single dose 150 mg. MR in 72 hrs

Mgmt of Recurrent Candida

- Identify predisposing factors
- Diabetes, antibiotics, medications, candida in partner, HIV infection
- Fungal cultures

Mgmt of Recurrent C. albicans
Options from 2010 CDC Guidelines

Extended course of therapy
- Topical therapy for 7 to 14 days
- Fluconazole 100-200 mg PO on days 1, 4, and 7

Maintenance 6 mo regimens:
- Fluconazole 100-150 mg PO q week
- Clotrimazole 500 mg vaginal suppository q week
- Topical clotrimazole 200 mg BIW

* Preferred
Vaginal pool wet mount
KOH prep: “budding spores and the absence of pseudohyphae”

- Candida glabrata
- Saccharomyces cerevisiae

Mgmt of Candida glabrata
- Topical imidazole agent x 7-14 days
- Topical nystatin x 7-14 days
- Boric acid vaginal capsules 600 mg vaginal q d x 7-14 d

Vaginal pool wet mount
Trichomonas vaginalis:
- motile trichomonads: 49 to 70 %
- pear-shaped, larger than WBC
- examine immediately, use fresh saline
- round up when inactive or die

Diagnosis of Trichomonas
- Definitive diagnosis:
  - trichomonads on wet mount
  - OSOM Trichomonas Rapid Test
  - culture: Diamond’s, InPouch TV, Trichosel
  - nucleic acid tests
    - Affirm III
    - PCR: APTIMA®, Amplicor® *

Mgmt of Trichomoniasis
- Metronidazole- 1st generation nitroimidazole long regarded as “treatment of choice”
- Two regimens prescribed:
  - 2 grams as single dose
  - 500 mg BID x 7 days
- Single dose regimen preferred

Mgmt of Trichomoniasis
Alternative to Metronidazole
- Tinidazole (“Tindamax®”)
- FDA approval 5/04
- antiprotozoal agent (nitroimidazole)
- dose: 2 grams as single dose with food
- longer half-life
- less GI side effects
Mgmt of Trichomonas vaginitis
- adverse reactions: side effects including antabuse reaction (24 hr for metronidazole, 72 hr for tinidazole)
- use during pregnancy
- use in patient who is breastfeeding
- Trichomonas is a STD requiring STD measures

Mgmt of Trichomonas
STD measures:
- partner(s) require Rx
- evaluation for other STDs
- counseling re HIV testing and need for safer sexual practices

Trichomonas on Pap smear
- sensitivity: 60 percent
- specificity: 92 percent (standard Pap); 96 percent (liquid-based)
- Bayes theorem

PREVALENCE
- 20 % - 1 in 2 is false (+)
- 1 % - 19 in 20 is false (+)
  (9 in 10 if liquid-based*)

Trichomonas on Pap smear
- sexual transmission
- recent acquisition
- remote acquisition (dormant)
- non-venereal transmission ?
  - ? rare
  - isolation from fomites (i.e. toilet seat)

Vaginitis: Meeting the Clinical Challenge
- common gynecologic problem
- key to management is accurate diagnosis
  - history and examination
  - office lab: wet mount, pH, “whiff test”, Q-tip test
- specific dx allows for effective Rx