Vulvovaginal Candidiasis

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Make Your Selection

A  B

C  D
Your Diagnosis Is?

A. Candida albicans infection
B. Non albicans Candida infection
C. Gonorrhea
D. None of the above
The 2015 CDC STD Guidelines available!

CDC STD TREATMENT GUIDELINES
http://www.cdc.gov/std/tg2015/
Classification of VVC

Uncomplicated VVC
- Sporadic or infrequent vulvovaginal candidiasis
- Mild-to-moderate vulvovaginal candidiasis
- Likely to be *C. albicans*
- Vulvovaginal candidiasis in nonimmunocompromised women

Complicated VVC
- Recurrent vulvovaginal candidiasis (RVVC)
- Severe vulvovaginal candidiasis
- Non-albicans candidiasis
- Vulvovaginal candidiasis in women with uncontrolled diabetes, debilitation, or immunosuppression
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A 35 y.o. woman presents with curd-like vaginal discharge and itching.
What is the most likely cause of her problem?

A. Candida krusei

B. Candida glabrata

C. Candida albicans

D. Not a candida infection- she found a liking for Japanese pastry
Standard Therapy for Uncomplicated Infections

Majority Candida albicans

- **Consistent, good quality, patient oriented evidence for:**
  - Oral and vaginal imidazoles are equally effective (80-90%) for treatment of uncomplicated *Candida*

Oral Treatments

- **Fluconazole:** 150 mg PO X 1 dose (FDA approved)
- **Itraconazole:** 200 mg PO BID X 1 day or 200 mg PO QD X 3 days

Side effects of fluconazole: headache, nausea, abdominal pain, rare elevation of liver enzymes
Topical Treatments for Simple Candida

- Clotrimazole*
- Miconazole*
- Butoconazole
- Terconazole
- Tioconazole*
- Nystatin powder, cream, ointment to vulva

* = OTC

Candida albicans KOH

Torulopsis (Candida) glabrata on Cornmeal-Tween 80 agar: Small, compacted blastoconidia with no pseudohyphae formed
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What percent of women with vulvovaginal Candidiasis will have complicated VVC?

A. 10-20%
B. 21-30%
C. 31-40%
D. 41-50%
Factors Which Promote Recurrent Symptomatic Infection

- Uncontrolled diabetes mellitus (glucosuria)
- Topical or systemic corticosteroid use or other immunosuppression
- Postmenopausal vaginal estrogen use
- Antibiotic use (if already colonized)
- Frequent coitus, orogenital sex? Treat partner
- OCP and IUD use, contraceptive sponge, diaphragm with spermicide

*No clear risk factors in 50% of women with recurrent infections*

A 49y.o. G4P2 presents with chronic vulvar pruritus and irritation. Her vaginal pH is 4.0. She has had 4 other identical episodes this year (culture positive for Candida).
Culture Positive for Candida Glabrata

• Low vaginal virulence
• Rarely causes symptoms, even when identified by culture
  – 50% of the time non-albicans yeast is an innocent bystander and is not causing the patient’s symptoms
    Nyirjesy 2016
• Exclude other co-existent causes of symptoms and only then treat for C. glabrata
What do you recommend as her first line therapy?

A. Butoconazole

B. Tioconazole

C. Terconazole

D. Boric acid vaginal suppositories

Other Antifungals
Boric Acid

- Puratronic, 99.99995% (metals basic)
- Formula \( \text{H}_3\text{BO}_3 \)
- Formula Weight 61.83
- Form Crystalline Powder
- Melting Point 170.9°
- Merck Number 11,1336
Boric Acid Capsule or Suppository
PER VAGINA

Fill 0-gel capsule halfway (600 mg)
For treatment of acute infection; insert per vagina qhs x 14 days
For prevention of recurrence; insert per vagina twice weekly
KEEP AWAY FROM CHILDREN
CONTRAINDICATED IN PREGNANCY
Yeast/Candida iPhone App

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Yeast/Candida iPhone App

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Yeast Culture/Speciation Results

- Candida albicans
- Candida glabrata
- Candida parapsilosis
- Candida tropicalis
- Candida lusitaniae
- Trichosporon
- Saccharomyces cerevisiae
- Candida kefyr
- Candida dubliniensis

There are limited data on some of the treatment regimens. The compounded medications generally are suggestions to consider when other agents are not working. The compounded medications are generally used for resistant strains of Candida.
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Candida lusitaniae

Topical creams can be irritating; vaginal tablets or suppositories may be less irritating. One-day products may be more irritating than longer-use products.

Ketoconazole is not included in this list due to the availability of more efficacious and less toxic medications.

Use as directed by package labeling. All pharmacies may not carry all products. The creams and suppositories are often oil-based and might weaken latex condoms and diaphragms.

Oral

Fluconazole
Additional information on drug interactions with fluconazole can be obtained in the CDC Guidelines [http://www.cdc.gov/std/tg/2015/candidiasis.htm](http://www.cdc.gov/std/tg/2015/candidiasis.htm)

In pregnancy, fluconazole is not to be used, instead use topical creams for treatment.

Recurrence:
- 150 mg oral tablet every 3 days for three times, then 150 mg orally weekly for up to six months
- At times, other dosing may be required such as 100 mg oral tablet every 3 days for three times (day 1, 4, and 7), then 100 mg orally weekly for up to six months; or 200 mg oral tablet every 3 days for 3 times (day 1, 4, and 7) then 200 mg orally weekly for up to six months.

If fluconazole cannot be used, liver disease, Steven’s-Johnson syndrome, or side effects such as headaches or nausea consider:
- Boric acid
- Maintenance creams for recurrent yeast

Itraconazole

In pregnancy, itraconazole is not to be used, instead use topical creams for treatment.

100mg oral tablet daily for 2 weeks, then twice weekly for up to 6 months.

Topical

Clotrimazole

Clotrimazole 1% vaginal cream: 1 applicatorful per vagina nightly for 7 nights
Clotrimazole 2% vaginal cream: 1 applicatorful per vagina nightly for 3 nights
Clotrimazole 7 day suppository/insert (100 mg per dose): One suppository/insert per vagina nightly for 7 nights
An Unfortunate Patient

- 55 y.o. female admitted for nausea, vomiting, diarrhea, elevated bili
- Hospitalized for 3 wks bone marrow transplant complications (AML)
- Developed vulvar pain 3 days ago when lesions first developed. No significant change in size of lesions over 3 days. Afebrile.
Your Diagnosis Is?

A. Rhizopus infection
B. Candida albicans infection
C. Candida glabrata infection
D. No yeast infection. She is bruised and this is just an artifact.
Rhizopus

- Mucormycosis (sometimes called zygomycosis) is a serious but rare fungal infection caused by a group of molds called mucormycetes.
- Fungi live in soil and in association with decaying organic matter, such as leaves, compost piles, or rotten wood.
- Examples of the types of fungi that most commonly cause mucormycosis are: *Rhizopus* species, *Mucor* species, *Cunninghamella bertholletiae*, *Apophysomyces* species, and *Lichtheimia* (formerly *Absidia*) species.
Rhizopus

- 13/1500 transplant patients developed this infection in study from 1993
- Surgical resection for cure
- Antifungals-liposomal amphotericin B
- Dressing changes/amphotericin B
Great Job!