Candidiasis

- Also known as moniliasis, thrush, yeast infection, candidosis, diaper rash
- Etiologic Agent is Candida
  - A fungus, Candida, usually Candida Albicans

Candida Classification
- Kingdom: Fungi
- Phylum: Ascomycota
- Class: Saccharomycetes
- Order: Saccharomycerales
- Family: Saccharomycetaceae
- Genus: Candida

Worldwide in distribution, Candida
- Life cycle is dimorphic, includes two stages
  - yeast
  - hyphae
- Alternates between yeast and hyphal phases dependent on environmental conditions
- Lives on 40-80% of normal humans-normal flora keeps it from becoming pathogenic
- found on skin, in gut, mouth, intestines, vagina, respiratory system

Candida Epidemiology
- Candida is presented to humans through food, and various other forms
- Becomes pathogenic by invading mucosa
- Can be due to prolonged hospital stays, and prior antimicrobial use
- Causes damage when yeast population multiplies, escaping control from resident bacteria competition
- More studies are being conducted to find the mode of transfer and prevention

Majority of fungal infections in US caused by Candida
- Difficult to rid of, penetrates into tissues in pursuit of blood
- Commonly infects pregnant women, infants, diabetics
Candida Pathogenesis

- Few virulence attributes
- Virulence factors are specific for each kind of infection
  - also for the mode of transfer and measures for preventing
    the spread of
- Not a single predominant factor, a panel of virulence factors used
- Secreted lipase is a major factor, still being studied

Diagnostics that may be preformed:
- Microscopy
- Urinalysis
- Blood test
- Different assays

Histopathology

- Opportunistic pathogen that utilizes environmental
  disruptions to cause infection.
- Virulence factors include:
  - Surface molecules that adhere to
    the organism
  - Acid proteases that are used in
    penetration of cell
  - Ability of Candida to transform
    from yeast to hyphal state allow the
    fungus to invade its host under the
    proper circumstances

Clinical Manifestations:

- Symptoms vary with type of Candida infection, but may include:
  - Skin rash
  - Itching
  - Diaper rash
  - Athlete’s foot
  - Sores in or around mouth
  - Pain or burning in the mouth
  - White patchy lesions on tongue, throat or gums
  - Vaginal discharge, soreness, burning or irritation
  - Halitosis
  - Constipation or diarrhea

Treatment:

- Clotrimazole
- Nystatin
- Fluconazole
- Itraconazole
- Miconazole
- Ketoconazole
- Terbinafine
- Terconazole

Prevention:

- Prophylactic antifungal drug therapy
- Proper diabetes care
- Limited and careful use of antibiotics
- Limited use of steroids
- Basic hygiene
Candidiasis Case Reports

- 64 HIV-infected women and 76 HIV-uninfected women
- Patients were at least 18 years old, sexually active, and positive serology for HIV

Candidiasis Case Reports

- Symptoms include vaginal itching, burning, and or discharge

Candidiasis Case Reports

- **Candida** was identified in 24 samples
  - 17 from HIV-infected and 7 from uninfected patients

Candidiasis Case Reports

- HIV-infected and uninfected patients

<table>
<thead>
<tr>
<th>Isolated species</th>
<th>HIV-infected</th>
<th>HIV-uninfected</th>
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</thead>
<tbody>
<tr>
<td>Candida albicans</td>
<td>6 (37.5%)</td>
<td>0 (0.0%)</td>
</tr>
<tr>
<td>Other species</td>
<td>1 (6.2%)</td>
<td>0 (0.0%)</td>
</tr>
</tbody>
</table>

Candidiasis Case Reports

- Treatment rendered for *C. albicans* include
  - Flucytosine, Fluconazole, Caspofungin, and Amphotericin B

Candidiasis Case Reports

- Treatment for non *C. albicans* include
  - Non-azole therapy, Flucytosine, or Amphotericin B

References


