Fungi
Simple, plant-like, lack green pigment, like dark, damp environments

- Molds - fuzzy, filamentous (mushrooms, puffballs, bread mold)
- Feed on living plants and animals
- Only about half of all types of fungi are harmful.
- "Mycotic", "Mycoses" - disease caused by fungi
- Difficult to cure

Trichophyton species
FUNGI

- Fungi live in air, in soil, on plants and in water
- Person to person contact
- Most exposure is through inhalation of fungal spores or by handling contaminated soil.
- Grows slowly
They usually are not pathogenic & the body’s normal flora can handle them, as long as person is not immunocompromised.

Which conditions would make a person more at risk for contracting a fungal infection?

New drugs to fight fungal infections became necessary with the rise in AIDS patients.
Some Common SUPERFICIAL Fungal Infections

○ Candidiasis: skin, nails, oral cavity (thrush), vagina
○ Ring worm- (Not to be confused with Helminths) (tinea capitis)
○ Athlete’s foot (tinea pedis)
○ Nail fungus –

with a topical solution

Also may be treated orally allowing the med to accumulate as with nail infections.
Systemic Mycoses

- More serious
- Affects internal organs
- Can be fatal to the immunocompromised
- Immunocompromised patients at great risk for fungal infections, especially if on antibiotics and chemotherapy
Antifungal Drugs

Selection of the antifungal drug is based on the location of the infections and characteristics of the lesion for example:

• Miconazole- vaginal inserts----vulvovaginal candida infections

• Nystatin-oral swish or topical---candida of the vagina, skin or mouth
Antifungal Drugs

- Terbinafine (Lamisil)- p.o. or topical- nail bed infection-heals very slowly by accumulating in the nail bed and stays active even after the tx is stopped
NURSING CARE OF CLIENT TAKING AN ANTI-FUNGAL

• Same basic care as with all other medications
• Complete assessment prior to beginning; baseline c & s; periodic labs
• Avoid alcohol
• Taken entire course of med
• Prevent pregnancy while taking med; if using a vaginal preparation, avoid intercourse until RX completed
• Increase fluids- prevent renal toxicity, monitor I & O
• Monitor for hepatoxicity ant ototoxicity
• Don’t take any other meds without prescriber’s approval
• If no improvement in 7-10 days, re-contact prescriber
• In ring-worm explain to family to wash all clothing and do not share person items!!!!
Protozoa

- Animal like, single cell, larger than bacteria
- Ingested via contaminated food and water
- Causes severe diarrhea
- Found all over the world in soil and any body of water
- Usually affects US travelers to South America, Asia, Africa
- Various types of protozoa
Protozoa

- Usually affects US travelers to South America, Asia, Africa
- Usually more prominent where hygiene and sanitation are poor
- Also occur in immunocompromised patients
MALARIA

- DIFFICULT DISEASE TO TREAT
- Caused by the bite of an infected female mosquito (carrier for the protozoa plasmodium)
- Prevention is the best treatment
- TRAVEL- CDC RECOMMENDATIONS
  - Treated with an antimalarial drug prior to traveling to the country
  - Treated for entire time in that country
  - Treated for 1 week after returning home
- Chloroquine (Arlean) drug of choice
Non-malarial anti-protozoal drugs

• Antiprotozoal drugs come in liquid, tablet, and injectable forms
• A commonly used antiprotozoal drug is metronidazole (Flagyl)- which also has antibiotic properties.
NURSING CARE OF CLIENT TAKING AN ANTIPROTOZOAL

• Monitor VS and EKG (can cause cardiac complications)

• Monitor for signs of toxicity: tinnitus with quinine; seizures; blurred vision
CLIENT TEACHING

• Avoid alcohol (hepatotoxicity)
• Complete course of treatment
• Use contraception
• Sexual partner should be treated concurrently (to prevent reinfection)
• Urine may turn reddish-brown
PARASITIC HELMINTHS

WORMS!!!!!!!
PARASITIC HELMINTHS

- Helminths are multicellular organisms that are parasitic and pathogenic to humans.
- They like to select human hosts. Most worm infestations are transmitted by the fecal-oral route.
- The identification of most worm infestations requires microscopic examination of body sample (usually stool) which reveals the presence of the adult worms or the larval forms.
- Worms are classified as either **roundworms** or **flatworms**.
PARASITIC HELMINTHS cont’

- Generally related to poor hygiene, poor sanitation, poverty
- Common in children who play in common playgrounds, sandboxes, swimming pools that allow diapers, etc.
Pinworms

- **Roundworm**
- Most common helminth
- Usually affects children
- 1/2” long, live in digestive system,
- **Can be found on many different surfaces**
- Hard to control and eliminate
- biggest issue is client education, so re-infestation can be prevented
OTHER TYPE OF WORMS

• **Roundworms**

  **Intestinal roundworms** – (ascaris/ascarides) large, long, yellow-white, pointed at both ends. May infest the lungs or intestines, can cause intestinal obstruction.
HOOKWORMS

- **Roundworm**
- People who walk bare feet at risk
- Penetrate intact skin, and enter into blood stream
- Live in small intestine, suck blood, may cause severe anemia
- Itching and rash at site of entry
Filariasis/Elephantiasis -

• Transmitted by flies and mosquitoes
• Lymphatic filariasis affects more than 90 million people worldwide
• Rarely fatal,
Tapeworms

- A PARASITE
- Live inside the host
- Resemble long ribbons
- Can grow 50 feet long in the intestinal tract
- Contaminated water and food, uncooked foods
- Person usually asymptomatic
MEDICATIONS TO TREAT HELMINTHS

• Mebendazole (vermox) is prototype
• Medications are not always necessary unless disease is severe or client develops complications. Often the adult parasite will die.
• One of biggest problems with using medications is preventing re-infestation—all close contacts must also be treated
• Client will expel worms for about 3 days after treatment
Viruses
Viruses

• Strange things that straddle the fence between living and non-living.
• --On the one hand, if they're floating around in the air or sitting on a doorknob,
• --They're about as alive as a rock. But if they come into contact with a suitable plant, animal or bacterial cell, they spring into action.
• -- They infect and take over the cell like pirates hijacking a ship.
• Virus from the Latin term means poison.
VIRUSES

- Tiny, smallest known infectious agent
- Can only be seen with electron microscope
- Contain genetic material
- Main purpose is to reproduce
- Have no cellular structure
- Are obligate parasites (need living cells)
- Not susceptible to antibiotics
Common VIRAL INFECTIONS

• VIRUSES cause many infections
• Such as Measles, Mumps, Influenza Poliomyelitis HIV-AIDS, Hepatitis, Herpes
HIV-AIDS

• Only a few viruses such as HIV are able to construct DNA from RNA.

• Progression of dz leads to immune system destruction.

• CD4 lymphocyte count falls - and the client begins to experience opportunistic bacterial, fungal and viral diseases and certain malignancies.

• Very difficult to treat because of its rapid mutation rate.
The 2 most important laboratory tests

- **CD4 count** – indicator of immune function &
- **RNA count**

  RNA count is more effective indicator of the viral load and thus a better indicator of clinical outcome
ANTIRETROVIRAL DRUGS

• Many newly developed antiretroviral drugs however, at Present there is still No cure available
• The drugs are classified according to action
• PROTOTYPES
  – VIRAMUNE; RETROVIR; INVIRASE
• Many drugs have lengthen life span
Nurse/Patient Concerns

• Using standard precautions will greatly minimize the risk of contracting HIV from a pt

• **Reasons for noncompliance with med. regimen**
  – Drugs are costly and must be maintained for lifetime
  – Side Effects are often unpleasant
  – More resistant strains of HIV
  – Genetic variability among the clients
HERPES

• Blister-like lesions appear on skin, genitals, eye, mouth, any other mucosal surface
• Usually contracted from an infected person, by direct contact
• Both chicken pox & shingles are herpes, & are caused by same organism, but are not like genital herpes.
• Herpes cannot be cured, but outbreaks can be controlled
• Outbreak often triggered by immunosuppression, physical challenges and emotional stress
MEDICATION USE

• ACYCLOVIR (ZOVIRAX) IS PROTOTYPE; VERY EFFECTIVE TO TREAT GENITAL HERPES
• DOCOSANOL (ABREVA)
• Others
• Tell the patient that these meds will not cure the herpes- They aid in relieving acute symptoms and prevent recurrences
THAT’S ALL SHE WROTE!
HAVE A GOOD DAY!