COMMUNICABLE DISEASES

- In perfect balance there will be NO ISSUES
- If microorganisms are in WRONG place and TOO MANY it will cause problems
- Resistance and immunity DECREASES it will to INFECTION
    - Ecological model shows the imbalances
- Infectious disease: cause by a pathogen
- Communicable disease: transferred from one person to another

Contagious disease: HIGHLY communicable

Carrier: person who carries the pathogen but asymptomatic

Contact: close association with infected person

Sporadic: occasionally and irregular pattern (Measles, botulism, tetanus, dengue)

Endemic: constantly present in a population, country or community

Epidemic: sudden rise, short-period of time of increase number (dengue, measles, zika, ebola, cholera)

Pandemic: Worldwide

Acute diseases: develops rapidly, lasts a short time (measles, mumps, influenza)

Chronic diseases: blood-borne, slowly and last longer (Tb, leprosy)

Subacute: fast onset, takes a while (bacterial endocarditis)

Latent diseases: causative agent remain inactive. Becomes active to produce symptoms of the disease (chickenpox -> shingles (zoster); amoebiasis)

- Chickenpox -> dormant along the nerves -> herpes zoster (shingles) -> VERY painful

Local infection: small area of a body (one area)

Generalized (systemic) infection: whole body (lymphatic and blood) (measles)

Focal infection: Local infection that spread but is CONFINED to specific areas of the body

Primary infection: acute infection that causes initial illness

Secondary infection: opportunistic pathogens, when immunity is weakened

Subclinical (inapparent infection): does not cause any noticeable illness (low velorence pathogen or high immunity)

STAGES OF DISEASE

Incubation: initial spread (can be communicable on some [Measles])

Prodromal: early, mild appearance of symptoms

Period of illness: manifest usually s/s of the disease, WBC increase OR decrease

Period of decline: s/s goes down, can still be communicable (chickenpox)

- Only prodromal or incubation only if infection is mediated by IMMUNE SYSTEM

Incidence: NUMBER of cases / total number of immune population

Prevalence: TOTAL number of all cases (OLD and NEW)

INFECTION process:

- Nurses break the chain to avoid infection
- Pathogenicity: ability of pathogen to cause diseases
- Infective dose: certain number of pathogen to TRANSMIT it
- Virulence: SEVERITY of the pathogen
- Organism specificity/host preference
- Resistance of the HOST (first line, second line [inflammatory response]) (ABILITY TO PREVENT)
- Immunity of the HOST
    - Cycle of infection must be completed

CHAIN of Infection:

1. Pathogenic microorganisms
2. Reservoir (environmental sanitation)
3. Means of escape (mode of EXIT)
4. Mode of Transmission
5. Means of ENTRY
6. Host susceptibility

<u>HAND WASHING, BEST WAY TO BREAK THE CHAIN</u>

IMMUNITY:

- Primarily WBC (lymphocytes)

  Antigen:

- proteins or substances that attack foreign (memory T cells) B cells will be the res back

  Antibody: present in blood or tissues for a long time, protection against pathogens

Natural: from the body made

Acquired: from elsewhere

Active: Body itself made

Passive: already made

Natural-active: self makes antibodies (chickenpox)

Natural-passive: past down from maternal or genetical

Artificial-active: administering vaccine and body creates against the vaccine

Artificial-passive: antibodies are administered itself

PASSIVE are SHORT-LIVED (ex. Anti-venom)

Immunization: vaccines to susceptible or individual, GOAL is to produce antibodies

- BCG, Dtap, OPV/IVP, Hep B, MMR, Varicella, HiB, Pneumococcal, Influenza

Passive immunization:

<u>WATCH OUT FOR THE EXPIRATION!!!</u>

- Near or expired = potency are diminished

2 things that damage vaccine:

extreme HEAT: sunlight, warm temp

extreme COLD:

Cold chain: time created -> time administered = CANNOT BE EXPOSED ABOVE (0-8 or 2-8) 8 centigrade, it CANNOT be FROZEN

Immunization: EPI : PPD 966 -> RA 10152

- Mandatory immunization for all infants and children below 5 to be vaccinated

BCG = TB

Hepa B

Pentavalent vaccine: dTap, influenza, (

OPV: pneumococcal (6, 10, 14 weeks given)

IPV: inactivated polio vaccine (end of 14 weeks)

MMR: mumps, measles, rubella (9 months - 1 year)

Immunoglobulin: GAMED

IgG: Generalize, placenta, exposed before = POSITIVE, LATER in the immune response

IgA: Airway or mucosal secretion, saliva, tear, sweat

IgM: Immediate response to Antigens (dengue test)

IgE: Allergy

IgD: do not know specific function, surface of B cells

CONTRAINDICATION TO VACCINE

- Allergy (ASK if allergic to chicken or egg, SINCE vaccines are inoculated from Duck egg)
- Encephalopathy without known cause

Temporary contraindications

- Pregnant: no mmr
- Immunocompromised: NO live accumulated vaccines
- Very severe diseases:
- Previously received blood product/transfusion: in the LAST 3 MONTHS, plasma may inactive vaccine

Community acquired: outside the hospital OR incubating PRIOR to admission

Hospital acquired: inside the hospital

INFECTION CONTROL MEASURES

Isolation precautions

Standard precaution: ALL regardless of type of infection

Transmission based precautions: Airborne/droplet/contact

Hand hygiene: 20 secs minimum - 1 minute maximum

IF soiled = Hand washing, IF NOT = hand rub

PPE: gloves (bodily fluids & open membranes exposures)

Safe linens, Sharp safety (puncture proof container)

Transmission-based precautions:

Droplet: large respiratory droplets, 3-6 FEET!!!, Influenza, Meningitis, Pertussis, Normal Surgical Mask, can leave the room open

Airborne: transmitted to aerosols (MTV, measles, TB, varicella, COVID-19), NEGATIVE pressure room, Filter, N95 MASK!!!

Contact: Direct contact, skin-to-skin, sexual, (MRSA, C. Diff, Scabies, Impetigo), GOWN and GLOVES, Private room when possible, STRICT hand hygiene

IF SAME INFECTION = they can be in the SAME room

PPE: hand hygiene, gown, mask, face shield, N95 mask

Doffing: gloves, gown, hand hygiene, face shield, hand hygiene, mask

Donning done in the ante-room

ANTIBIOTIC RESISTANT ORGANISMS

Clostridioides difficile infection: GI symptoms, HAI, pseudomembranous colitis, Fecalysis, Culture

Contact precautions, USE bleach solution

Methicillin Resistant Staphylococcus aureus (MRSA)

- HA-MRSA, CA-MRSA, wound swab for culture, due to MISUSE of antibiotic

- Contact precautions, proper hygiene, patient education

Multidrug-resistant Enterobacteriaceae

- E. Coli, Klebsiella species, Gram-negative
- Mortality 50% in HA

Candida Auris

- Hard to determine = Hard to treat
- Blood stream infections, severe systemic diseases
- REPORTABLE DISEASE = IMMEDIATE REFERRAL
- Highly communicable

Vancomycin-resistant enterococcus (VRE)

- Blood stream, urinary, wounds
- Px not getting better CHECK for this

HEALTH EDUCATION for PREVENTION

- Sanitation practices, regulated health practices, immunization programs
- Identify frequent diseases and its reasons

Home-based care of infectious patients

- Appropriately apply transmission-based otherwise standard-precautions
- proper hygiene, safe handling of equipment, maintain home CLEAN through heat sanitation, bleach solutions

Protecting immunocompromised host:

- HIV infection/AIDS, immunosuppressants, cancer patients,
- REVERSE isolate the px

INFECTIOUS DISEASE CLASSIFICATIONS:

Blood/Vector borne:

DENGUE fever, H-fever, Dandy fever Breakbone fever, Phil Hemorrhagic fever

- Acute febrile disease, pathopneumonic signs HERMAN'S RASH
- Flavivirus, dengue virus 1,2,3,4
- Rainy season, urban areas

- Incubation: 3-10 days
- Mosquito lifespan is 4 months
- Bite an infected person first then transferred to the mosquito and within 8-12 days transfer to another person
- **Vector**: Aedes aegypti: day biting (2 hours after sunrise and 2 hours before sunset), low flying, CLEAR STAGNANT water breeding
- Bone, muscle pain, rashes, anorexia, etc,
- Can be relieved after experiencing the Prodromal phase
- Capillaries will become permeable if it progresses
- Low platelet = capillaries damage = petichae
- Increase Hematocrit levels
- Thrombocytopenia
- SEVERE -> massive bleeding, circulatory failure
- TOURNIQUET TEST (Rumpel leedes test): Keep cuff inflate for 8-10 minutes (child), 10-15 min (adult), After, count petechiae formation 1 square inch (20 petechiae/sq.in) = POSITIVE

Lab Test:

- Platelet count, NS1 antigen test, RT-PCR, IgM/IgG serology, PT/APTT, prolonged INR

Dengue (w/o warning signs): travelled to endemic dengue places within the last 14 days, leukopenia

Dengue (with warning signs): abdominal pain, persistent vomiting, pleural effusion

➔ **IMMEDIATE HOSPITALIZATION**

SEVERE Dengue:

- fluids will leak -> shock or respiratory distress, can involve the liver -> signs of hepatitis

PURELY SYMPTOMATIC management:

- Fluid management (oral), Platelet and hematocrit monitoring, paracetamol for headache (never give ASPIRIN due to impaired platelet function)

SEVERE CASES:

- Plasma replacement, IVF hydration, BT for severe bleeding, O2 therapy, Packed RBC with platelets IF RBC count is low

- >30000 platelet NO INVASIVE
- Nasal packing with epinephrine for epistaxis
- Gastric lavage -> cold saline til clear
- Cytoprotectors

PREVENTIVE control: 4-S against DENGUE

1. Search

2. Self-protection (long sleeves or long pants, mosquito repellent)

3. Seek early consultation

4. Say NO to indiscriminate fogging

CLEAN Technique:

- Chemical mosquito net, Larvae eating fish, Environmental sanitation, Anti-mosquito soap (lansones), Natural mosquito (mint, oregano, citrus)

MALARIA

- Plasmodium: falciparum (most common and deadly), vivax (VERY young/old), malariae, ovale (rare)
- 9pm-3am
- **Vector**: Female anopheles mosquito (NIGHTIME biting), bigger than usual, streams, river
- **Incubation**: 12-14 days, 12 days for falciparum, 14 days vivax and ovale, 30 days malariae
- **Communicable:** up to 3 years (malariae), no more than 1 year (falciparum)
- LIVER -> merozoids -> RBC -> Anemia -> gametes -> 1-3 years -> communicable
- Fibrosis in liver -> hypertrophy liver & spleen
- Uncomplicated: fever, chills, sweating
- **Complicated:** rupture of RBC (anemia), Liver failure, Cerebral edema (Cerebral malaria; lethargy, dementia, seizure)

Cold: Chilling sensation (10-15 mins),

Hot: (3-4 hours) recurring high grade fever

Wet: Sweating profusely

GET BLOOD DURING PEAK!! OF FEVER

- Chloroquine CONTRAINDICATED for g-6-p deficiency
- Malaria drugs can lead to hemolytic
- TAKE prophylaxis (chloroquine) on endemic areas for malaria 1-2 weeks PRIOR, Palawan
- Prevent spread of mosquito
- Biopond fish for larvae
- FILARIASIS, ELEPHANTIASIS LYMPHATIC FILARIASIS
- Most common bancrofti, parasitic worms, they block lymph nodes
- Person-person mosquito bite by CULEX, MANSONIA, ANOPHELES, AEDES
- Camarines, Palawan, eastern samar
- When matured -> they released something that mosquito can get when you are bitten
- MULTIPLE blood meal -> which is why they are LESS COMMON than dengue and malaria
- Lymph nodes -> edema
- Elephantiasis -> extremities, edema, and hardening
- Conjunctival Filariasis -> blindness (oncoceriasis)

Manifestations: Chills fever recurrent usually 3 months - 1 year before lymph edema

LAB test: Filariasis blood smear (10 PM - 2 AM)

Treatment: Ivermectin, albendazole, DIETHYLCARBAMAZINE (ANTIHEMLETIC)

Excision of subcutaneous nodule

Compression stockings for lymph edema

LEPTOSPIROSIS

- Spirochete: L. Manillae, L. Carnicula, L. Pyogens
- Incubation: 6-15 days
- Vector: Most common rodents, other animals
- MOT: urine or other body fluids contact with any wound or open skin
- DIAGNOSIS: culture
    - Blood: during 1st week
    - Urine: after 1st week until convalescent period
    - CSF: 5th -12th day
    - LAAT
- **Treatment:** penicillin 50000 units/kg/day, tetracycline 20-40 mg/kg/day
- **Prevention:** RUBBER boots,
- Easily treatable, and short lived

Enteric diseases:

TYPHOID FEVER

- Salmonella typhosa, gram negative
- Carried only by HUMANS
- Transmitted in fecal-oral mouth (contaminate water, milk, shellfish)
- Most SEVERE form of salmonellosis caused by salmonella typhi
- Affects: GI (small intestines), Lymph nodes

Incubation: 1-2 weeks

Prodrominal: 1st week (step ladder fever 40-41)

ROSE SPOTS

- Splenomegaly during 1st week with step ladder

2nd week: high fever with hallucinations, delirium, confusions

3rd week: Small intestine will ulcerate and vomit or eliminate -> peritonitis -> bleeding

4th week: no symptoms

5th week: convalescence (recovery)

Lab test: 1st week blood culture typhi dot, 2nd week stool and urine culture, widal Test

- Azithromycin
- PRECAUTION until 3 CONSECUTIVE negative culture

SCHISTOSOMIASIS/ SMALL FEVER/ BILHARZIASIS/ KATAYAMA

- S. Japonicum (affects intestinal tract)
- S. Hematobium (urinary tract)
- S. Mansoni (intestinal tract)

Incubation: 2 months

- Feces of infected person

Vector: Snails

- Liver -> mesenteric small intestine -> eggs -> inflammation hepatic -> portal hypertension

Assessment:

- Swimmer's itch (cercarial dermatitis) itching within 24 hrs after penetration in the skin and lasts 2-3 days

Migratory phase: systemic reactions

Acute phase: hepatosplenomegaly, 2-3 weeks and lasts 1-2 months

Lab Test:

- Fecalysis, culture (eggs), kato katz techinique, Liver and rectal biopsy, ELISA, COPT

Management: 6 months, prazi something

Preventive:

- Wear KNEE rubber boots, avoiding washing clothes or bathing in stream, Snail control (niclosamide-molluscicides), Scotch tape test (anus), proper waste disposal

VIRAL HEPATITIS

- Affects liver (enlargement) and jaundice

HEPA A (fecal/oral) HAV

- 15-50 days
- Maintain enteric isolation (standard), feces handling

HEPA B (bloodborne) HBV

- 6 months (180 days)
- Infective or transmitted even in incubation period
- Standard precautions, blood

HEPA C (percutaneous exposure and blood) non-a & b

- 6 months (180 days)

HEBA D (contact with body fluid; WITH. Hepa B) HDV

- 2 weeks to 70 days

HEPA E (water and fecal route) HEV

        - 15 - 64 days
- ❖ Interlobar infiltration in liver
- ❖ Liver necrosis -> blocks flow of bile -> jaundice
- ❖ Urine is DARK (tea colored), stool is GREY
- ❖ In skin = peritus

SWARM: URTI, weight loss, anorexia, chills, fever, RUQ pain, malaise

JAB: Jaundice, acholic tool, bile colored urine

Ascites -> pressure build up -> esophageal veins -> rupture -> vomit blood

-> pressure -> rectal veins -> hemorrhoids

Diagnostics: surface antigens (Hepa A & B; checks exposure to virus)

- IgG (either immunity or previous exposure)
- Anti-hepa B value (+ = immunity to immunization)

No specific management for Hepatitis

- High carb, low fat, low protein, Vitamin B complex

Nursing Management:

- observe for melema
- Optimum oral care
- Prevention and control (depending on Hepa specificity)

Eruptive fever:

MEASLES, RUBEOLA, MORBILI, 7 DAY FEVER, HARD RED MEASLES

- Tigdas
- RNA, Paramyxoviridae
- Rapidly inactivated by heat, UV light, extreme acidity and alkalinity

Incubation: 8-12 days

- Droplet-airborne
- Infection from blood or secretions

Diagnostics: Nasal/throat swab (RT-PCR), Urinalysis, CBC, leukopenia, leukocytosis

maculopapular RASH (less than 1 cm in size)

- In HAIR LINE, behind, ear, trunk, limbs
- excessive mucous secretions

Koptiks signs (mouth)

Pre-eruptive 2-4 days

Eruptive stage: 4th day

Convalescence: (pneumonia)

Diagnostics: NASAL SWAB

Management:

- hygiene, hydration, paracetamol, antibiotics, prevention, vitamin A, vaccinate 9 months - 1 year (MMR)

GERMAN MEASLES, RUBELA, ROTHELN DISEASES, 3 DAY MEASLES

- Tigdas-hangin
- CA -RNA, Rubella virus (Montaviridae)

Incubation period: longer (2-3 weeks)

- HIGHLY contagious

MOT: droplet

- Maculopapular rash more than measles, more pin point and spreads to face downwards
- Forchheimer spots (petechial lesions on buccal cavity or soft palate)

EXTREMELY teratogenic (genetical issues, abortion, bleeding, prematurity)

- Low grade fever

Management: supportive (hydration, fever management)

Post-exposure prophylaxis - 72 hours after exposure (Immunoglobulins)

CHICKEN POX / VARICELLA

- Bulutong
- Varicella, herpes virus

Incubation: 10-21 days

MOT: Droplet (can be airborne)

Prodromal phase: headache, papulovesicular rash -> face and trunk, centrifugal

Macules -> papules -> vesciles -> crusting and scar formation

Communicable til last day of Crusting

Complications: meningoencephalitis, pneumonia, furunculosis

Dormant: ganglionic roots -> shingles -> VERY painful

Treatment:

- oral or topical Acyclovir
- Tepid sponge bath, wet compresses for pruritis
- Potassium permanganate
- Isolation for a week
- Return to community IF ALL VESICLES HAVE CRUSTED

Nursing considerations: DO NOT scratch, oral anti-histamine, keep nail short
heat treatment or expose direct sunlight (linens)

Respiratory diseases:

MENINGOCOCCEMIA

- Same with bacterial meningitis as CAUSATIVE agents but different area
- Can also be S. Pneumoniae and H. Influenza

DROPLET (URTI) to blood stream to CNS

- It stays in the blood stream

Incubation: 1-2 days (or faster)

HIGH RISK: Immunocompromised

In blood -> release of endotoxins -> symptoms of URTI (fever, chills, runny nose, cough) -> enough endotoxins = release of cytokines -> inflammation (SRIS) = RR increase, PR increase/decrease -> will promote massive vasoconstriction both large and small capillaries -> rupture = petechiae, echomotic hemorrhages, echymosis -> Body will compensate by clotting -> clotting factors will run out -> DIC

- Fuliminant meningococcemia (waterhouse-friderichsen syndrome)
- Bleeding in adrenal medala -> adrenal insufficiencies -> further vasodilation -> rebound hypotension -> rebound septic shock

Treatment:

- antimicrobial (cephalosprins)
- Benzyl penicilin (alternative)

Nursing management:

- STRICT ASEPTIC TECHNIQUE
- Oxygenation
- TSB or antipyretics
- Monitor increase intracranial pressure
- Immobile = turn q2
- Protect eyes due to photophobia
- Maintain Normal fluid intake
- Prophylaxis for those in contact with infected
- Droplet, IF with wounds Droplet-Contact

DIPHTHERIA

- Cornynebactirium diphtheriae, gram (+), Klebs loeffier's bacillus

Incubation: 2-5 days

Communicable: 2-4 weeks if untreated, 1-2 days IF treated

Source: Respiratory discharges

MOT: droplet-airborne transmission

- pathogen -> EXOTOXIN

Nasal: LEAST severe case

Tonsillar: LOW vitality rate

Nasopharyngeal type:

➔ MOST severe, pseudomembranes (gray exudates around the throat)

- WILL CAUSE airway obstruction
- Cervical lymphadenopathy -> bull neck
- Increased hoarseness until aphonia
- Wheezing on expiration
- Dyspnea

Cutaneous diphtheria

Clinical manifestation:

- Sore throat, fever, bull-neck, foul breath, tonsillar & uvular swelling, thick/muffled speech, neck swelling

Diagnostic/Lab test:

- Throat Swab
- **Schick test:** susceptibility to diphtheria toxins
- **Moloney:** sensitivity to diphtheria toxoids

Treatment:

- Neutralize toxins: Diphtheria anti-toxins (EXPENSIVE)
- Penicillin, erythromycin, rifempicin, clindamycin
- Cured after 3 consecutive throat swab negative results
- Monitor airway obstructions, tracheostomy
- CBR up to 2 weeks to prevent myocarditis (most difficult to treat and dangerous)
- Reduce excessive stress to the heart
- STRICT isolation

Pre exposure prophylaxis

- DPT: 0.5 IM
    - 1 - 1/2 months old
    - 2 - after 4 weeks
    - 3 - after 4 weeks
    - 1st booster - 18 months, 2nd - 4-6 yrs. Old

PERTUSSIS/WHOOPING COUGH

- Bordetella pertussis, B. Parapertussis, B. Bronchiseptics, gram (-)
- Common in infants & young children, FATAL

Incubation: 5-21 days

MOT: droplet/airborne, contact with secretions

Catarrhal stage: 1-2 weeks, MOST communicable, tearing, low-grade fever

Paroxysmal stage: 2-4 weeks, clusters of cough end with whoop, vomiting,

Convalescent stage: 2-3 weeks: less frequent coughs

Complications: bronchopneumonia, pneumonia

Diagnostics/Lab test: Throat culture w/ Bordet gengou agar

Management:

- liquefy secretion: Ferrous Iodide
- CBR
- Warm fresh air is BETTER
- Hydration and nutrition
- Vitamin C for resistance
- Oxygen (1-2L.min)
- Erythromycin or ampicillin
- ISOLATION for 4 weeks or til convalescent period, after coughing begins & continued for 7 days after onset of antibiotic therapy

TUBERCULOSIS

- Acid fast bacilli, Mycobacterium tuberculosis
- SENSITIVE to direct sunlight and UV light
- Sputum of persons MOST COMMON SOURCE
- Potts disease

Military TB

Pulmonary Tuberculosis

Chronic and Acute

IP: 2-10 weeks

MOT: droplet

Dormant Tb can cause fibrotic scars seen in X-ray

Classification:

- Minimal - slight lesions
- Moderately advanced - one or both lungs may be involved
- Far advanced - coughing blood

1. **Inactive TB:** symptoms absent, sputum negative, CXR-no evidence
2. **active TB:** tuberculin test positive, CXR-progressive, + symptoms, Sputum +
3. **Activity not determined**

Clinical M.:

- Afternoon rise of temp for 1 month or more
- Night sweating
- Body malaise, weight loss
- Hemoptysis - pathognomonic
- Cough, dry to productive
- Dyspnea, hoarseness
- Occasional chest pain
- AFB sputum + (collect sputum for 3 CONSECUTIVE days; In the morning NO breakfast, toothbrush, gargling; fluid excretion exercises)

Etiologic Factors:

- Poverty/Overcrowding
- Vit A, D, C deficiency

X-ray -> AFB -> Sputum culture & sensitivy -> Tuberculin Test

Tuberculin test:

- Presence of induration (inflammation and redness in an area)
- More than 10 mm induration, 5 mm for immunocompromised (AIDS)
- DONT DO in PHILIPPINES because most have antibodies for TB

Categories of TB:

1. (+) sputum and x-ray
2. Relapse
3. active PTB cases with (-) sputum, but x-ray regression
4. compliance to meds
5. PTB suspect, (+) skin test, exposed to family with T

Drug components:

- OLD Regimen (6 months)
- 2HRZE / 4HR
    - Intensive phase for 2 months
    - Continuation phase for 4 months
    - TOTAL: 6 MONTHS
- Some meds may be given the simultaneously
- 1. Shorter Treatment for Drug-Susceptible TB in adults
    - 4 months instead of 6 months
- Recommended regimen = age 12 or older
- 2HP2M/2HPM
- IF age 3 months - 16 years SAME WITH OLD REGIMEN but 4 months instead of 6 months
- all-oral regimen given from 15 moths to about 6 months
- BPaLM regimen (preferred)
- 14 years old or older with rifampin-resistant, fluoro something

Primary Anti-TB drugs:

- Rifampicin
- SE =. Orange color urine, GI upset, Jaundice, Renal failure, thrombocytopenia

Isoniazid (INH)

- VITAMIN B6 or B complex NEEDED
- Hepatotoxic

Pyraznamide (PZA)

- increase fluid intake, due to possible renal stone
- Ethambutol - 15/20 mg/day
    - Vit B6/B complex
    - Optic neuritis

Streptomycin

- Aminoglycosides
- -mycin
- Kidney and ear complications (cranial nerve 8)

Moxifloxacin

- Prolonged QT (dangerous arrhythmia)
- Monitor ECG

NURSING MANAGEMENT:

- Maintain respiratory isolation
- Stop smoking
- ALWAYS check sputum for blood or purulent expectoration
- DIRECT sunlight for sanitation
- FOLLOW-UP x-ray and AFB

MUMPS (EPIDEMIC PAROTITIS), INFECTIOUS PAROTITIS

- Acute viral disorder by paromyxovirus of the varicella virus
- Leads to infertility
- Mumps vaccine -> 1 year old
- MMR - 15 months
- Lifetime immunity

Incubation: 14-25 days, usually 18 days

- More common in male, less likely on adults
- PAIN under the JAW
- Can migrate to testicles or ovaries
- cannot be infertile when affected before puberty

Communicable: 6 days before and after the swelling appears

<u>DO</u> supportive management:

- analgesic, antipyretic, cold compress, steroids
- NO sour food, since it will trigger salivation

Diagnostics: ELISA

CNS infection:

MENINGITIS (CEREBRAL FEVER)

- Viral or Bacterial infection (h. Influenza, s. Pneumoniae)

Incubation: varies from 1-10 day

Respiratory droplets

- Direct invasion in the Otitis media
- AFTER skull fracture, vasselar structure
- ANY access to brain -> Meningitis

Manifestations: Headache, irritability, fever, neck stiffness, kernig's and brudzinki's sign

Dx:

- lumbar puncture/tap for CSF analysis (sugar, proteins, WBC) There should be NO WBC in CSF, Low protein and sugar due to bacteria using them if HIGH it is viral
- Blood culture, urine culture

Mx:

- Antibiotics (Cephalox, Penicillin)
- Antipyretics, treat ICP (bradycardia/pnea), Control seizures, adequate nutrition

POLIOMYLEITIS/INFANTILE PARALYSIS/HEINE MEDIN DISEASES

- Acute infection, changes in CNS -> pathologic reflexes, muscle spasms, and paralysis
- Lower neuron problems
- 3 Strains: Legio Brumhilde, Lansing, Leon (rare)
- Fiterable Virus (Legio Debiltrans)
- Fecal-oral route
- Direct contact: fecal contact, sharing utensils

Dx: culture of CSF (increased CHON), stool culture

ISOLATION

Incubation: 7-21 days

Communicable: 3 days of onset up to months (3), HIGHLY on the first few days

Abortive/inapparent: DOES NOT invade CNS recovers within 72 hrs

Non-paralysis: abortive signs w/ meningeal infection BUT no paralysis

Paralytic: Changes in muscle systems

Bulbar: Involves brainstem, weaken muscle, 9th Cranial nerve, Facial, pharyngeal, ocular paralysis

- POLIO px -> Muscle disfigurement -> mobility problems

❖ **NOT HEREDITARY**
❖ Under 10 years old
❖ Male more prone; 3:2

Mx: analgesic (NO morphine), CBR, warm compress for spasms, Rehab for paralysis, braces

Preventive: Active-OPV (sabin) and IPV (salk)

Complication: respi, cardio, electrolyte imbalance

TETANUS/LOCKJAW/TRISMUS

- Clostridium tetani (gram +), anaerobic

Incubation: 4-21 days

- Produces potent exotoxin
- Tetanus spores are introduced thru open wound
- Tetanus neonatorum - umbilical cord

<u>MAIN EFFECTIVE MUSCLE SPASM</u>

- attack PNS and CNS -> inhibit GABA and Glycine -> Tetanic Muscle spasm

Manifestation:

- Difficulty opening mouth (Lockjaw), sneering grin (risus sardonicus), Dysphagia, generalized muscle rigidity, Opisthotonus (severe arching of the back), Localized or general spasms, Respiratory paralysis

Dx: history, leukocytosis, serum antitoxin levels

Mx: Active - Tetanus toxoid, Pre-exposure = DPT, antibiotic and wound cleaning and debridement

Passive - Tetanus immunoglobulin and TAT, placental immunity

Seizure: benzodiazepine, chlorpromazine

RABIES

- Genus Lyssavirus, Family Rhabdoviridae (RNA virus)
- Undomesticated animals
- Bite/wound setting
- Acute viral encephalomyelitis

Incubation: 4 days up to 19 years

Risk of development: face bite 60%, upper extremities 15-40%, lower extremities 10%

100% fatal

- ANS -> salivary glands, adrenal medulla, kidney, lungs, skeletal muscles, skin, heart

Manifestations: Pain/numbness, fear of water, fear of air

4 stages:

Prodrome: fever, headache, paresthesia

Encephalitis: hypersensitivity

Brainstem dysfunction: hydrophobia

Death

Dx: history, virus isolation from saliva and CSF, serial serum Ab sample

Staining of brain tissue (dog) - Negri bodies

3 Classes:

1. Intact skin
2. Mucosal, non-bleeding
3. Bleeding bites

Mx: POST-exposure

- Immediate - wash wound 15 mins + antiseptic
    - Day 0,3,7,14,28 (IM deltoid)

Exposure

1. No vaccine
2. Vaccine only
3. Vaccine + RIG
    a. RIG: for class 3, infiltrate around wound (IM/SQ)

PRE-exposure

- Day 0,7,21/28
- No RIG
- IF exposed give vaccine

Diarrheal diseases:

CHOLERA/EL TOR

- Vibrio coma (Inaba, ogawa, hikojima), vibrio cholera, vibrio el tor; gram negative
- Prolonged in cooler temperature
- Fecal/oral route transmission

Incubation: few hours to 5 days

Habitat: small intestine

<u>Rice water characteristics</u>

fishy odor smell

manifestations: dehydration, massive diarrhea, abdominal cramps, greyish-greenish

mucoid stools, washer's hand

Diagnostic/Lab Test: Stool culture

Treatment:

- Tetracycline and doxycycline (extremely teratogenic)
- Quionolones (-tromycin)

Nursing Mx:

- IVF and electrolytes imbalance (hypokalemia)
- Metabolic acidosis
- Proper cooking (destroys cholera causing pathogens)

    - 15 mins boiled before consumption
- Flies management

BACILLARY DYSENTERY SHIGELLOSIS

- Shiga bacillus: dysenteries (fatal), flexneri (Philippines), Boydii, somnei; gram (-)
- Shiga toxin destroys intestinal mucosa
- Humans are the ONLY host
- Fecal-oral route

Incubation: 1-7 days

Toxins invade large intestine -> invade mucosa -> replicate -> ulcerations -> bloody

stools; inflammatory responses -> continuous diarrhea -> Blood spec with mucous stool

Manifestations:

- Tenesmus, fever, colicky abdominal pain, diarrhea watery

Dx: Stool culture

Mx: Oresol, Ampicillin, trimethoprim-sulfamethoxazole

Same with cholera managements

AMOEBIASIS (AMOEBIC DYSENTERY)

- Entamoeba Hystolitica, protozoa
- Common in warm climate
- Acquired through swallowing contaminated water
- Cyst survives a few days after outside of the body
- To large intestine & hatch into trophozoites -> mesenteric veins -> portal veins
- Trophozoites/vegetative form
    - Invade tissues -> become cyst -> cyst rupture -> cyst in the stool -> communicable feces

Cyst survives in colder environments for more than 12 days (7 days normally outside a human host)

- In water they can survive for 30 days
- Destroyed by drying and extreme temp: below 5 C and Above 40 C

MOT: fecal-oral, or oral-anal sexually practices

- Extraintestinal amoebiasis: outside large intestine

Dx: stool culture

Treatment: metronidazole

Nursing Mx:

- Boil water/purified water
- Avoid washing in open water
- Cover leftover food
- Avoid ground vegetables (IF high cases in the area)
- Hand hygiene

SALMONELLA INFECTION (SALMONELLOSIS)

- Contaminated food; drinks; meat and poultry product
- Fecal-oral route
- Communicable: all through out fecal excretion

Incubation: 6-72 hours (<24 hours)

Manifestations:

- Abrupt onset of nausea, vomiting, diarrhea, abdominal tenderness and pain, signs of dehydration

Dx: stool culture

Treatment:

- Correct dehydration
- Antibiotics: Ampicillin

RED TIDE POISONING/PARALYTIC SHELLFISH POISONING

- Pyromidium Bahamense (algae), Dinoflagellates Plankton
- Ingestion of Saxitoxin in contaminated bi-valves shellfish

Incubation: 15 mins - 12 hrs

Dx: History

Manifestation: Paralysis and Numbness, Nausea, vomiting, headache, respiratory arrest, difficulty speaking

Treatment: emesis/gastric lavage -> activated charcoal, supportive

Preventive: NO shellfish during red tide season (summer, warm climate season)

BOTULISM/FOOD POISONING

- Clostridium Botulinum

MOT: Food borne/Contaminated wound

<u>CANNED GOODS</u>

Incubation: 12-38 hrs after eating improperly canned foods

Manifestations: toxication, dysphagia, dry mouth, paralysis (descending symmetrical), vomiting, constipation, diarrhea, double vision

Dx: Stool culture, blood test (for + botulin toxins)

Treatment: Anti-toxins (trivalent botulinum antitoxin thru IV or IM), IV fluids and electrolytes, Care and manage respiratory complications

INTESTINAL PARASITISM:

MOT: through eggs from contaminated food or feces

HIGH RISK: highly urbanized areas, poor sanitation, poor hygiene, children,

Manifestation: asymptomatic at first, rash or itching, gas or bloating, anemia, fatigue, weight loss,

Dx: stool or vomit the worms

A. Helminths

Tapeworms (FLATWORMS)

- Taenia Saglinate (cattle), Taenia Sollum (pigs)
- Fecal-oral route

Incubation: 2-3 months to years

Dx: stool exam

Mx: Praziquantel, Niclosamide

ISOLATION and standard precaution

Pinworms

- Enterobius Vernicularis
- Fecal-oral route
- VERY itchy anus AT night

Incubation: upon ingestion 1-2 months

Dx: scotch tape test AT night time

Mx: Pyrantel Pamoate, Mabendizole

Roundworms (ASCARIASIS)

- Ascaris Lumbricoides

Incubation: weeks to months

- Contaminated fingers
- 4-12 years old

Dx: stool for ova

- In small intestines -> larvae -> bloodstream -> lungs = to mature -> some will cough the matured larvae or swallow it -> intestine (replicate) -> eggs in feces

Treatment:

- mebendazole/albendazole/pyrantel pamoate
- Isolation is NOT needed
- Wash ALL fruits and vegetables thoroughly
- Availability of toilet facilities must be ensured
- Complications: ears, mouth, nose; Loeffers pneumonia

SKIN diseases:

LEPROSY/HANSEN'S DISEASE

- Chronic communicable disease
- Mycobacterium leprae, acid fast bacilli

MOT: prolonged skin-skin contact or droplet

Incubation: years to decades

- Active immunization (BCG)

TYPES:

- Paucibacillary: Rifampicin and dapsone
    - Early/intermediate:
    - Tuberculloid: skin lesion (macules, papules)
- Multibacillary: (Rifam, dapsone, clofazimine
    - Lepromaltious: inability to close eyelids, ceptal collapse, multiple lesions, clawing fingers, digits may fall off
    - Borderline: between tuberculloids and lepromaltious

Domiciliary home treatment (RA 4073)

Multidrug therapy

PEDICULOSIS

- Impetigo to AGN, RHD
- Blood sucking lice
- skin contact, sharing of grooming instruments

HIGHLY communicable

Mx: disinfect implements, lindane (kwell), topical permethrin (Nix), topical

HIGHLY treatable

Treat **NOT** just the px but also all the things that comes in contact

SCABIES

- Sarcoptes scarbiel
- Pruritus (excrete of mites)
- Mites come-out from burrows to mate at night
- Skin-contact

Manifestations: Itching worse at night and after hot shower

Dx: biopsy, scraping of lesions

Mx: Permathrin (Nix), crotamiton cream, sulfur soap, antihistamine, SINGLE dose of ivermactine

- TREAT everyone involved in the contacted person

EMERGING diseases:

SARS - China

Antibiotics are ineffective

Antipyretics, oxygenation, ventilatory

Preventive: ISOLATED, masks, face shield, hand hygiene, immune system good

MERS-CoV -

COVID-19 -

IMMUNITY become hyper stimulated and destroys OWN organs -> ARDs