UNIVERSITATEA DE STAT DE MEDICINĂ ȘI FARMACIE
"NICOLAE TESTEMIȚANU" DIN REPUBLICA MOLDOVA

Differential diagnosis of diseases associated with lymphadenopathy

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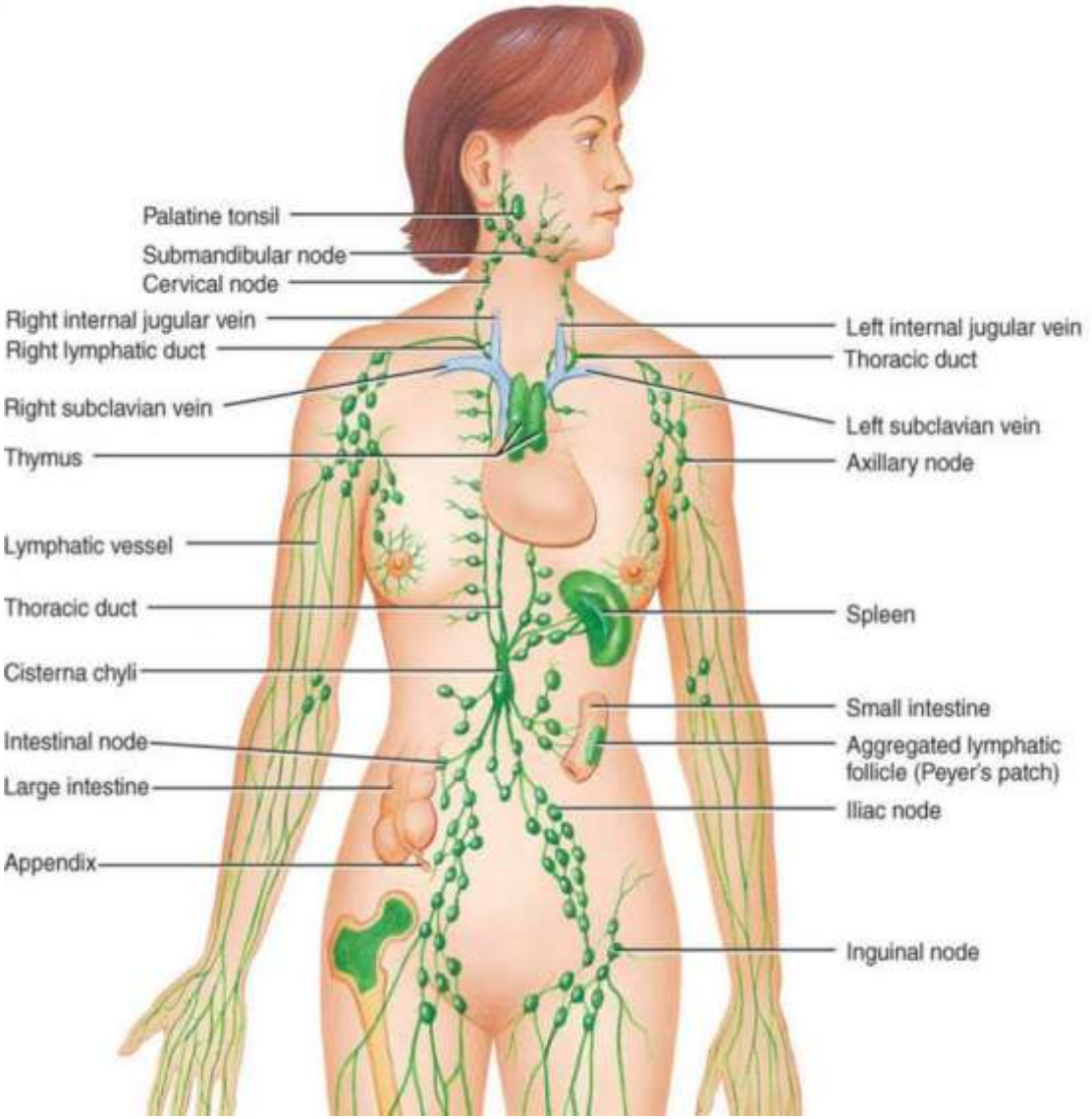


- Lymphadenopathy is the enlargement of lymph nodes, infectious or non-infectious cause
- The antigen enters through a skin or mucosal lesion and is transported by lymphatic vessels to the nearest lymph node.
- Lymphatic vessels are distributed throughout the body except the brain and bones.

Etiology of diseases associated with lymphadenopathy

***I*nfectious etiology**			***Non-i*nfectious etiology**
Viral diseases	***Bacterial diseases***	***Parasitic and fungal diseases***	***a) Autoimmune diseases***
Infectious mononucleosis CMV infection HIV infection HSV-1 and HSV-2, Varicella-zoster virus HHV-6, HHV-7, HHV-8 Rubella Measles Adenovirus HAV, HBV, HCV	Tularemia Plague Cat scratch disease Brucellosis Dyphtheria Tuberculosis Atypical mycobacterial infection Primary and secondary syphilis	Toxoplasmosis Leishmaniasis Trypanosomiasis Filariasis Rickettsioses Histoplasmosis Coccidiodomycosis	Rheumatoid arthritis Juvenile rheumatoid arthritis Connective tissue diseases Systemic lupus erythematosus Dermatomyositis Sjogren's syndrome **b) *Oncological diseases*** Acute or chronic lymphocytic leukemia Hodgkin‘s, non-Hodgkin's lymphoma

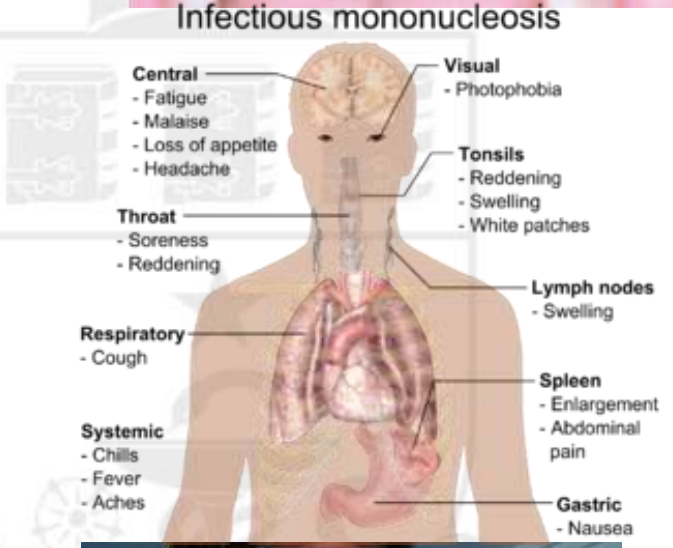
Infectious mononucleosis

Etiology and epidemiology

- The kissing diseaseis, is caused by the Epstein-Barr virus, also known as human Herpesvirus 4
- Causes some tumors: Burkitt's lymphoma, nasopharyngeal carcinoma, hairy leukoplakia of the tongue.
- Incubation period - 2-7 weeks after exposure
- It is primarily spread through saliva
- The source is the sick person and the asymptomatic carrier

Clinical manifestations

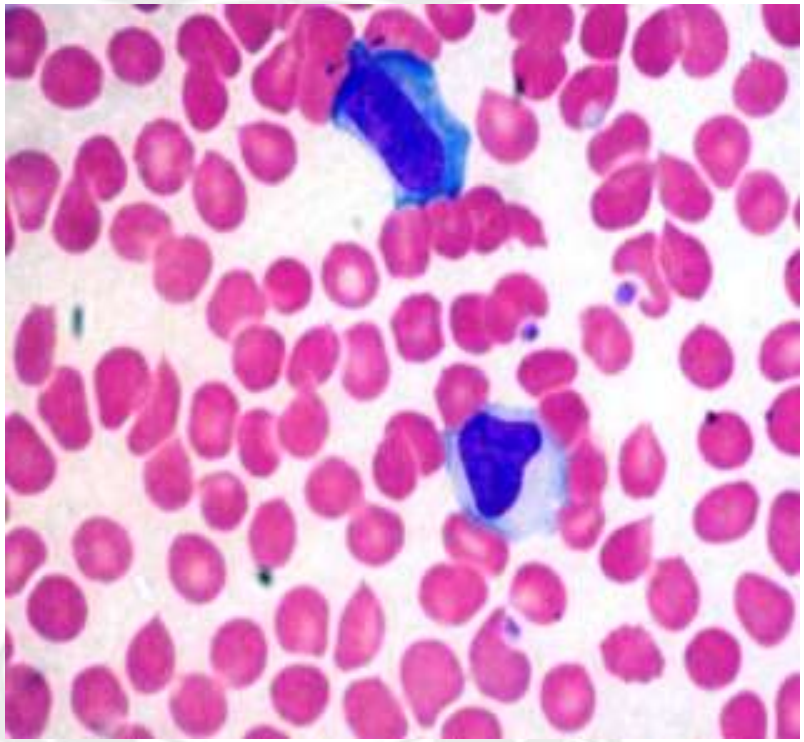
- Intoxication syndrome - irregular fever 38-40ºC, usually lasting 1-3 weeks
- Symmetrical anterior, posterior, submandibular and occipital cervical **polyadenopathy**
- Follicular, pseudo-membranous tonsillitis, with edema of the uvula and pharynx
- Hepato-splenomegaly in 50-60% of cases
- Urticarial, erythematous, petechial rash in 5-10% of cases
- All people given amoxicillin or ampicillin develop a generalized, itchy maculopapular rash



Infectious mononucleosis

Laboratory data

- Leukocytosis with lymphomonocytosis about 70-80%,
- appearance of atypical lymphocytes,
- hyperbasophils in more than 10-15% of cases
- Thrombocytopenia – in 50% of cases
- Moderate hepatic cytolysis – in 80-90% of cases
- Rare hyperbilirubinemia in patients over 40 years of age



Serological confirmation of EBV

- Antibodies IgM EBV- VCA (*Viral Capsid Antigen*) – in 90-100% acute cases and persists for 1-3 months
- Antibodies IgG anti-EBNA (Epstein Barr Nuclear Antigen) – it is positive 3-4 weeks after the onset of the disease, it persists throughout life

Complications of infectious mononucleosis

Neurological complications :

- Encephalitis (potentially fatal)
- Seizures
- Meningitis
- Cranial nerve palsies
- Transverse myelitis
- Ataxia
- CNS lymphoma

Hematological complications :

- Hemolytic anemia
- Thrombocytopenia
- Thrombocytopenic purpura
- Agranulocytosis

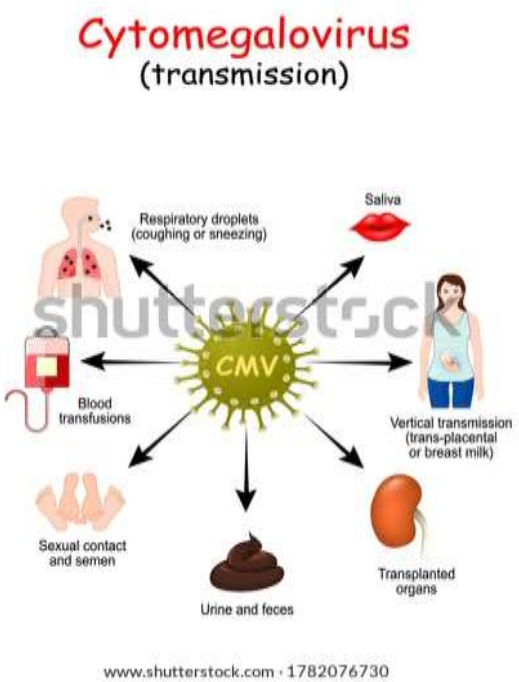
Other complications:

- Spleen rupture
- Respiratory complications (interstitial pneumonia and pleurisy)
- Hepatic complications – acute liver failure

Cytomegalovirus infection

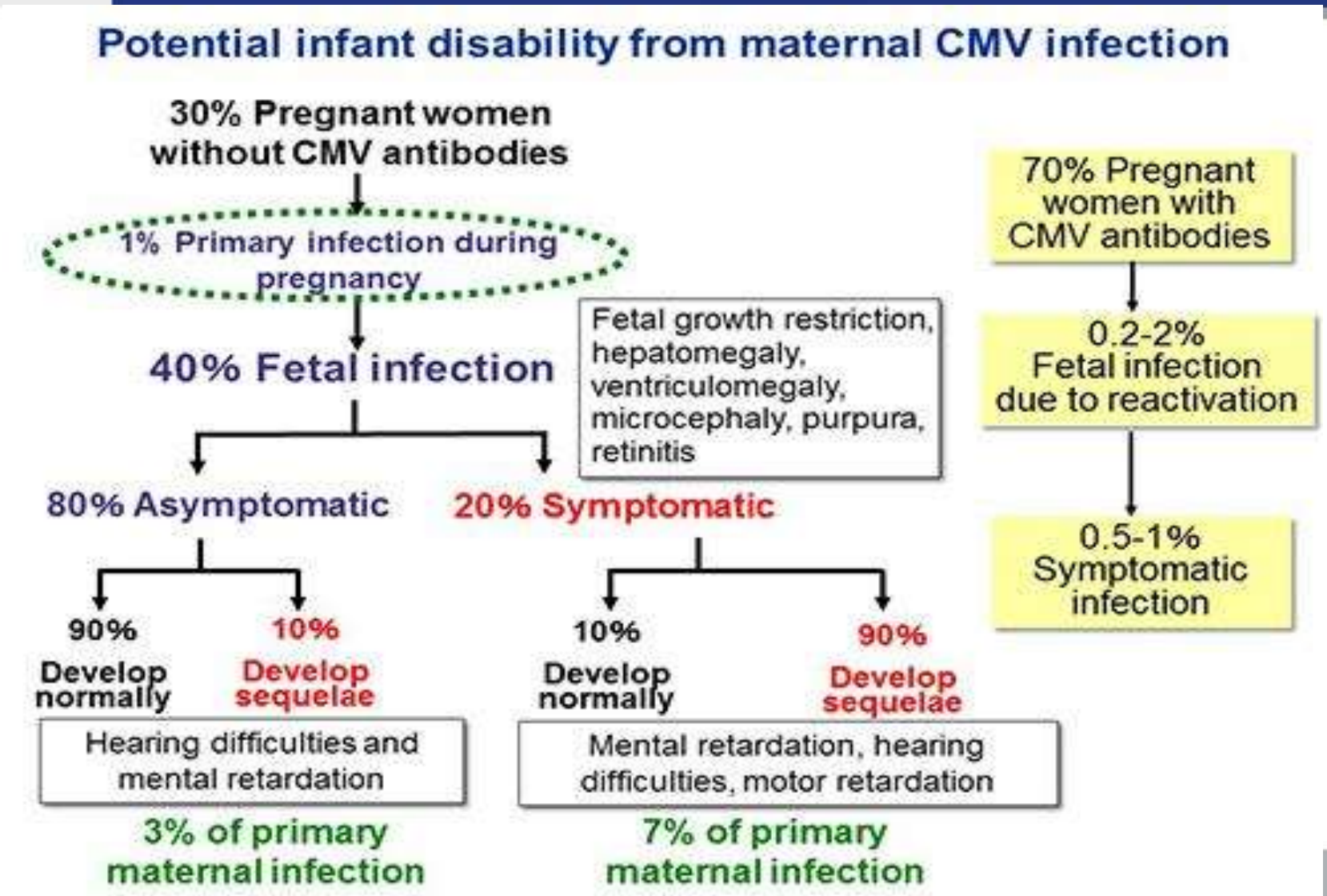
Etiological and epidemiological data:

- CMV is human betaherpesvirus 5
- Often causes perinatal and childhood infections
- Virus is present in milk, saliva, feces and urine
- CMV – vertical transmission and through sexual contacts
- Latent CMV infection persists throughout life, reactivates in immunocompromised patients



Nou născut cu infecție CMV – erupție petesială

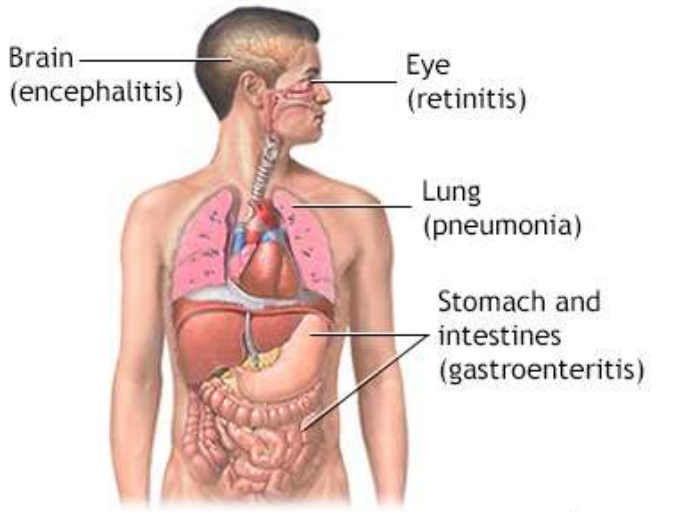
Congenital CMV infection



Acute CMV infection

CMV mononucleosis syndrome

- incubation period - 20-60 days,
- the acute phase - 2-6 weeks
- in children - often asymptomatic
- in adults - febrile syndrome (2-4 weeks), chills, asthenia,
- Loss of appetite, weight loss, general malaise
- Muscular aches and fatigue, headaches
- Fever and sore throat
- **Enlarged lymph nodes (in the neck region)**
- Behavioral changes
- Epileptic seizures
- Diarrhea
- Pneumonia
- Specific organs may be affected:
  - Eye - leading to blindness, light sensitivity
  - GI tract - causing bleeding ulcers
  - Liver - inflammation and hepatitis
  - Brain - meningitis



Laboratory modification in CMV primary infection

CBC

- Leukocytosis with lymphomonocytosis
- Thrombocytopenia
- Hemolytic anemia

Biochemical tests

- Mild Cytolytic Syndrome – in ≈ 90% of cases
- In 10% ALAT >10 N

Confirmation of CMV infection

- Anti-CMV IgM positives persist 6-9 months after infection and can become positive during CMV reactivations
- In pregnant women with Anti-CMV IgM, the IgG antibody avidity test is recommended
- Investigation of pp65 antigen and CMV DNA by PCR in blood and urine are used to diagnose reactivations in immunocompromised patients
- Identification of DNA-CMV in the amniotic fluid of the pregnant woman, confirms CMV infection of the fetus in utero

HIV/AIDS

HIV is transmitted

use of non-sterile syringes and tools

pregnancy breastfeeding

blood transfusion

organ transplant

unprotected sex

HIV is not transmitted

food, drink, utensils

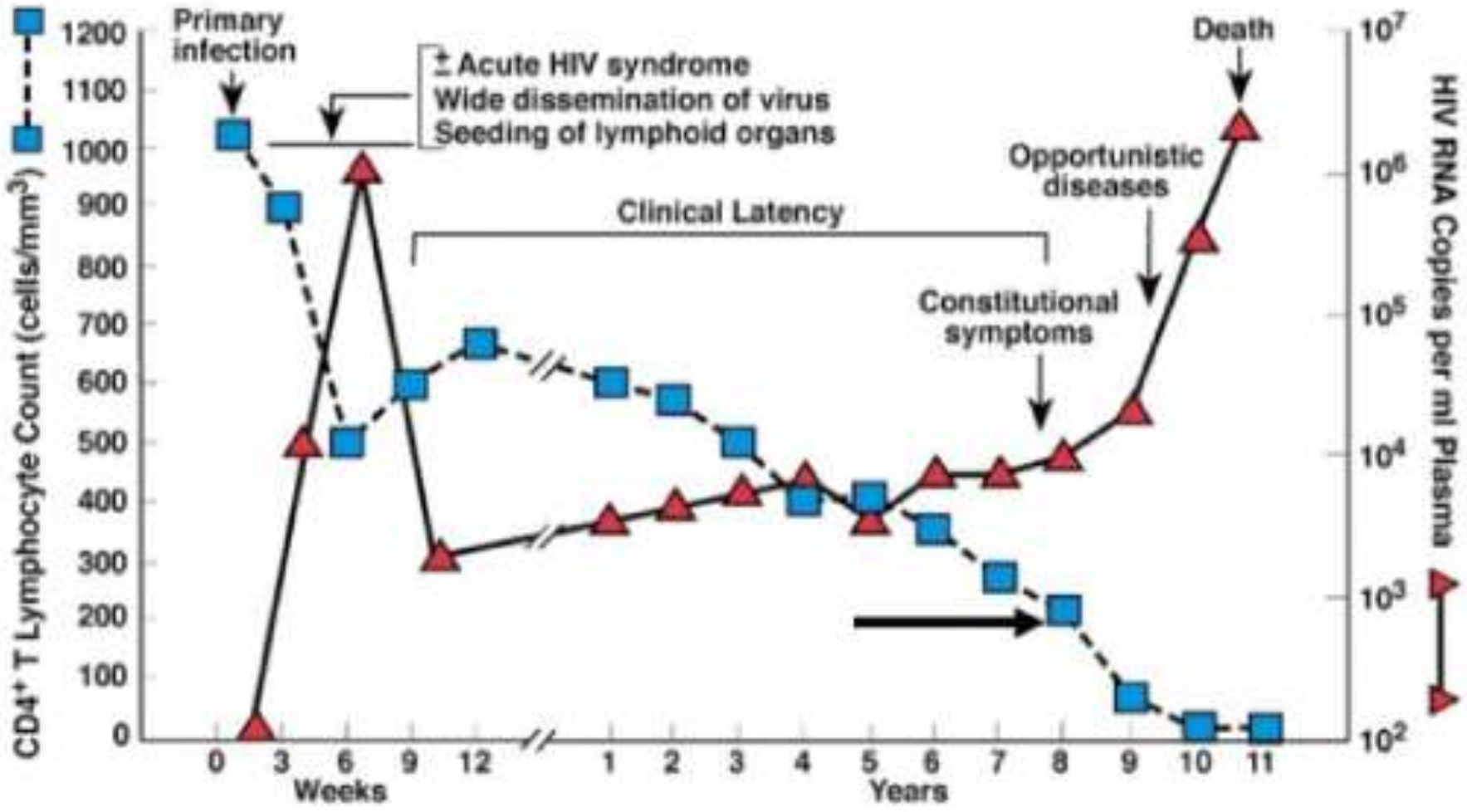
insect bites

kiss, touch

clothes, towels

toilet, shower

Typical Course of HIV Infection



Modified From: Fauci, A.S., et al, *Ann. Intern. Med.*, 124:654, 1996

HIV/AIDS infection

HIV primary infection

- Symptomatic in 50-70% of cases
- Appears 3-6 weeks (maximum 6 months) after infection
- Polymorphic, non-specific, "Mononucleosis-like" or "Flu-like" simptoms
- Fever/asthenia – in 80% of cases
- **Symmetrical, painless polyadenopathy**
- Erythematous tonsillitis
- Maculopapular or urticarial rash – in 50-70% of cases
- Myalgias/arthralgias – in 50% of cases
- Oral and/or genital ulcers – in 40% of cases
- Weight loss > 2.5 kg – in 30% of cases

Persistent generalized lymphadenopathy

- Present in 50-70% of patients
- Increase two or more groups of lymph nodes, except extrainguinal
- Size > 1 cm, painless, mobile
- Persists for > 3 months

Lymphadenitis in opportunistic diseases in stage AIDS

- Tuberculosis (cervical, axillary, mesenteric, mediastinal nodes)
- Hodgkin's lymphoma (cervical, axillary and inguinal nodes)
- L. non-Hodgkin (mediastinal, retroperitoneal, paraaortic or pelvic nodes)

Laboratory modification in HIV/AIDS infection

In acute retroviral syndrome (HIV)

- Leukocytosis with lymphomonocytosis
- atypical lymphocytes in blood smear Lymphopenia with ↓ CD4 lymphocytes, ↑ CD8 and ↓ CD4/CD8 ratio < 1
- Thrombocytopenia-in 25% of cases
- Mild cytolytic sindrom – in 30% of cases

Confirmation of HIV infection

- In first 12 weeks after infection

2 Rapid IV generation tests (Anti-HIV+Ag p24) – positive

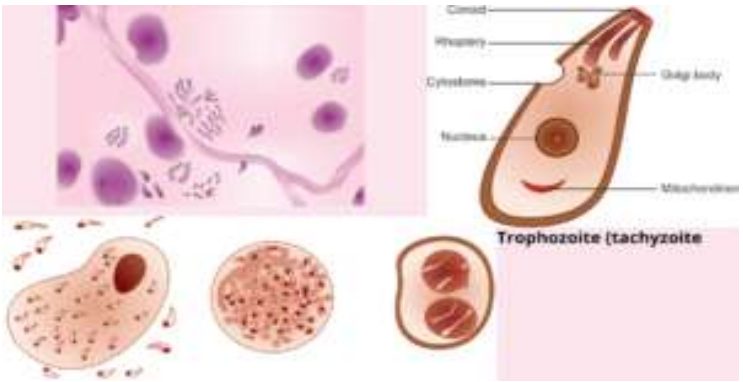
- HIV-RNA (PCR) positive
- level of CD4 lymphocytes

12 weeks after infection

- 2 Rapid III generation tests (Anti-HIV)- poz
- HIV RNA (PCR) - poz
- CD4 lymphocyte level

Toxolplasmosis

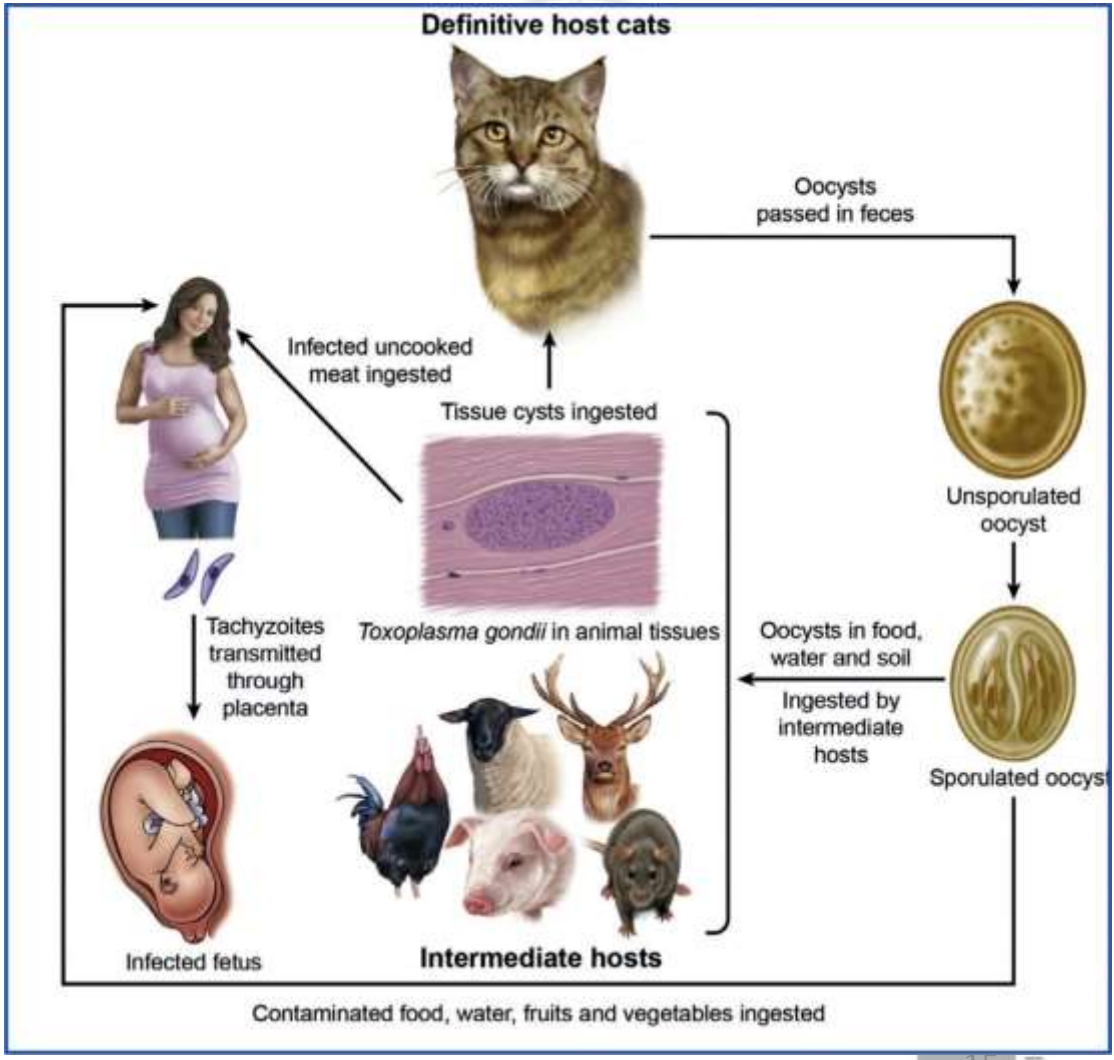
Toxoplasma gondii



Primary infection – at any age, more common in children and young adults
Incubation between 5 days – 3 weeks

Clinical forms:

- Acute acquired toxoplasmosis in immunocompetent and immunocompromised patients
- Chronic acquired toxoplasmosis (reactivation)
- Congenital toxoplasmosis

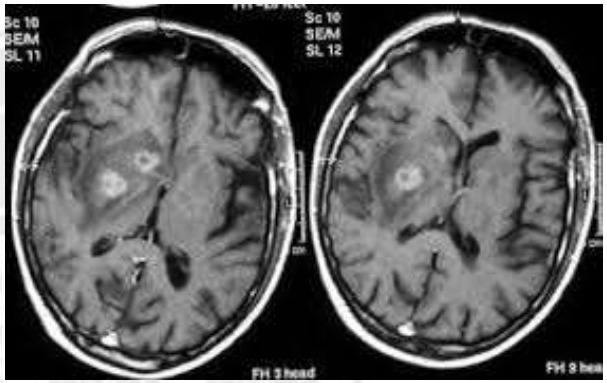


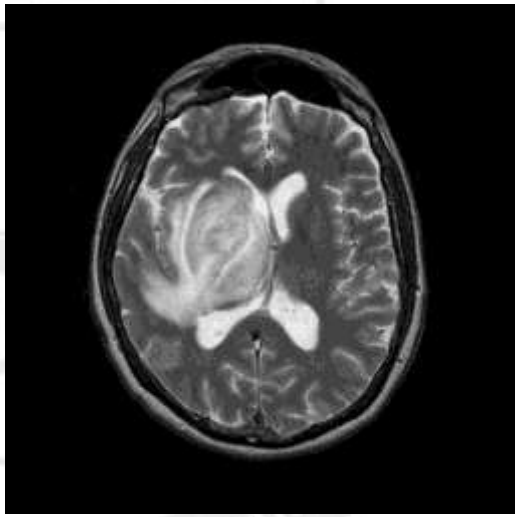
Clinical Features

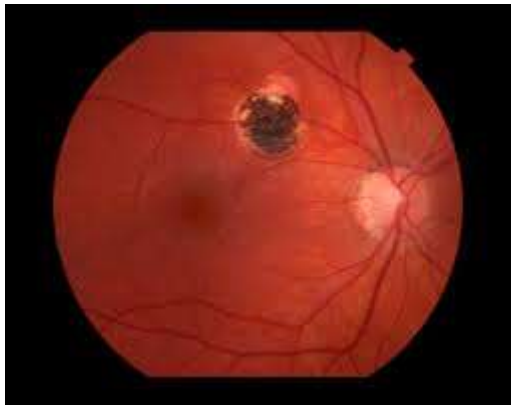
- Infection with *Toxoplasma* in immuno-competent persons is generally an **asymptomatic** infection.
- However, 10% to 20% of patients with acute infection may develop:
  - **A flu-like illness.**
  - **Cervical lymphadenopathy.**
  - **Atypical pneumonia.**
  - **Acute encephalitis.**
  - **Chorioretinitis.**
- Symptoms usually resolve within a few months to a year.

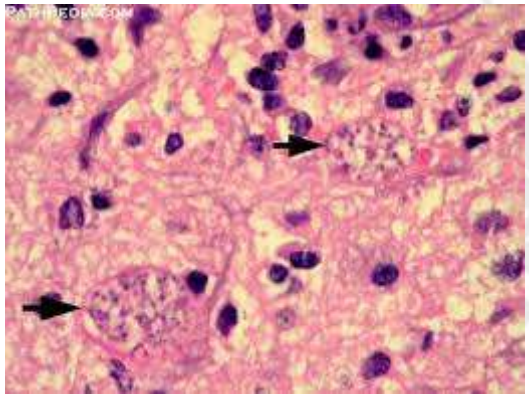
Toxoplasmosis in immunocompromised patients

- HIV/AIDS (CD4< 100/mm3)
- Posttransplantation
- Oncohematological diseases with chemotherapy
- AIDS associated toxoplasma encephalitis results from reactivation of chronic latent infection in more than 95%
- The risk for cerebral toxoplasmosis approaches 30%.
- In the CNS affected grey and white matter of brain, retina, lungs, heart and skeletal muscles.
- Changes in mental status (75%)
- Fever (10-72%)
- Epileptic seizures (33%)
- Headache (56%)
- Focal neurological deficits(60%)



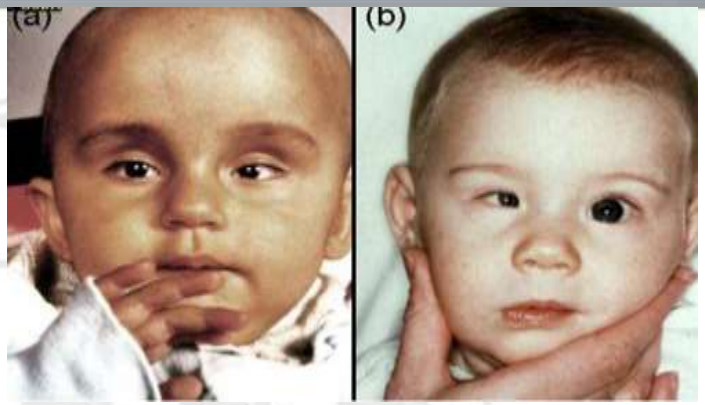




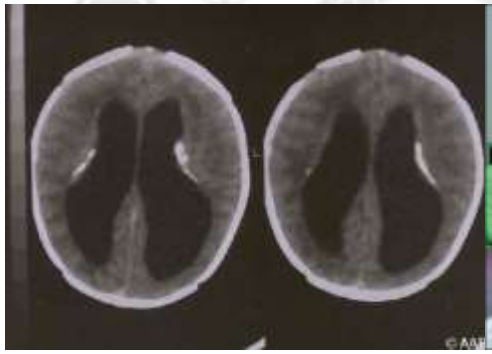


Congenital toxoplasmosis

- Hydrocephalus, microcephaly, ventriculitis
- Intracranial calcifications
- Cerebral palsy, deafness
- Epilepsy, psychomotor or mental retardation
- Maculopapular rash
- Generalized lymphadenopathy
- Hepatomegaly, splenomegaly, hyperbilirubinemia
- Petechiae associated with thrombocytopenia,anemia
- >80% of children present ocular sequelae : chorioretinitis, uveitis, optic nerve atrophy



a) bulging forehead b) microphthalmia



Toxoplasmosis. Diagnosis and treatment

Etiological diagnosis

✓Anti-Toxo IgM (+), Anti-Toxo IgG (-) – acute infection
✓Anti-Toxo IgM (+), Anti-Toxo IgG (+) - reactivation of chronic infection
✓In pregnant women with Anti-Toxo IgM (+), Anti-Toxo IgG (-) – acute infection is suspected and repeated Anti-Toxo IgG in 2 weeks;
✓Anti-Toxo IgM (+), Anti-Toxo IgG (+) – Ab avidity test (reactivation of chronic infection)
✓DNA Toxo- by PCR from amniotic fluid, serum

Treatment
✓Pirimetamina + Sulfadiazina
✓Pirimetamina +Dapsona or
✓Trimetoprim-sulfametaxozol 1 tab daily

Congenital infection
Pirimetamina (1mg/kg) + Sulfadiazina (100 mg/kg) + Acid folic, **daily, 1 year**

Ocular toxoplasmosis
Pirimetamina + Sulfadiazina or Clindamicina, 30 day

Herpetic viruses

Human viruses	Common name	Subfamily	The target cell	The transmission
Human herpes virus 1	Herpes simplex type 1	Alpha	Mucoepithelium	Close contact
Human herpes virus 2	Herpes simplex type 2	Alpha	Mucoepithelium	Close contact, the sexual way
Human herpes virus 3	Varicella-Zoster	Alpha	Mucoepithelium	Respiratory tract By contact
Human herpes virus 4	Epstein-Barr	Gamma	B-lymphocytes, epithelium	Saliva
Human herpes virus 5	Citomegalovirus	Beta	Epithelium, lymphocytes, monocytes	Transplacentar Blood transfusions Transplant
Human herpes virus 6	Measles/Roseola infantum	Beta	T-lymphocytes	Respiratory tract By contact
Human herpes virus 7	Exanthema Subitum	Beta	T-lymphocytes	Unknown
Human herpes virus 8	Kaposi's sarcoma	Gamma	Endothelial cells	Body fluids

HSV-1 infection

- The primary infection appears in the first 1-3 years, in 90% of cases - asymptomatic.

Clinical manifestations:

- **herpes labialis** - gingivostomatitis (vesicular and ulcerative rash, ***cervical adenopathy***, fever)
- **kerato-conjunctivitis** (presents the risk of corneal ulceration and blindness)
- **eczema herpeticum** (in patients with chronic eczema, as a generalized vesicular dermatitis)
- **herpetic panaritium** (in healthcare worker, in children – self-inoculation)
- **meningitis, meningo-encephalitis**, damage to the trigeminal or olfactory nerves (lethality 70%).



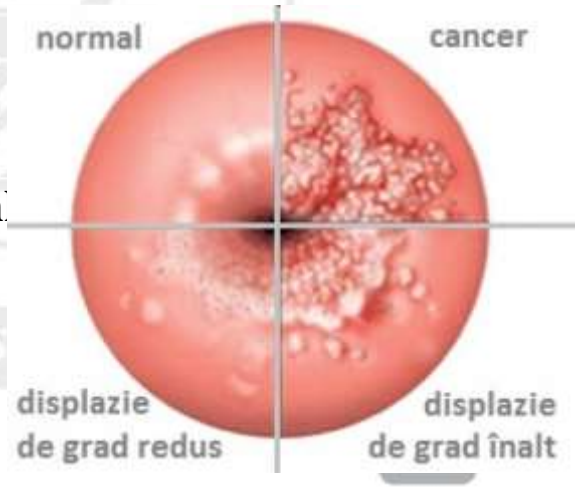



HSV-2 infection

- It mainly causes genital infections.
- Primary infection - in people aged 15-25 (first sexual contact) or in newborns (congenital herpes, neonatal).
- In 75% of cases the primary infection is asymptomatic.

Clinical manifestations:

- ***Genital herpes*** (vesicular-ulcerative lesions of the penis, vulva, vagina, cervix, perineum, buttocks, herpetic proctitis). After the primary infection, the virus remains latent in the lumbar and sacral nodes, causing recurrences, with the same localization, less severe.
- ***Neonatal herpes*** Contracted by a newborn at birth or from healthcare worker with oral herpes or herpes panaritium. It is manifested by septicemia or conjunctivitis. Untreated, it progresses with visceral dissemination and death (65%). The infection can be asymptomatic.
- ***Congenital infection*** Transplacental transmission causes congenital malformations, heart defects.
- ***Cervical and vulvar cancer***



HSV-3 infection

Primary infection – chicken pox

- The source of the virus is man
- Transmission - airborne, through nasopharyngeal secretions or through contact with vesicular fluid.
- It usually affects children aged 2-6 years, and non-immune adults in the winter-spring season.
- Maximum contagiousness 1-2 days before the rash and one week after the last eruptive pustule.
- Incubation period – 14 days
- In the first 5 days - damage to the respiratory system and local lymph nodes.
- After 5 days, fever and pruritic rash appear, then it spreads independently over the whole body, including the scalp (macule - papule - blisters with clear liquid, then crusts).

- The rash disappears without a scar after 2-3 weeks
- In immunocompromised persons – hemorrhagic lesions, bacterial superinfection, encephalitis, pneumonia, disseminated chickenpox, lethal.
- In pregnant women in the first 20 weeks of pregnancy, chicken pox can cause an embryofetopathy

HSV-3 infection

Reactivation (Zona-Zoster)

- Characteristic for adults with compromised immunity
- During the primary infection, through sensitive or hematogenous nerves, VZV spreads to the spinal ganglia or cranial nerves, where it remains latent.
- In case of reactivation, the virus multiplies and moves via the centrifugal nerve to the corresponding skin sector, causing Zona-Zoster.
- The infection begins with severe neuralgia, hyperesthesia and vesicular, unilaterally rash, located in the dermatome of the affected nerve.
- It may be associated with meningitis or paralysis.
- Clinical forms: ophthalmic zoster, motor zoster, encephalomyelitis.
- The rash persist until the appearance of the immune response (humoral, cellular).



Measles

Incubation period – 10 days

Prodromal phase 4-5 days

- Fever 38-40ºC
- Fatigue, weakness, anorexia
- Cough, coryza, conjunctivitis

Specific symptomatic phase

- Erythematous, non-pruritic, maculo-papular rash spreads for 3 days gradually head-trunk and abdomen -limbs, palms and soles, becoming confluent. On the 4th day it begins to disappear in the order in which it appeared
- Koplic spots - on the oral mucosa

Complications of measles

- Pneumonia
- Otitis media
- Encephalitis

Acquired rubella

Incubation period – 14 days

Prodromal phase (1-5 days)

- General malaise
- Subfebrile temperature
- Upper respiratory tract simptoms

Specific symptomatic phase

- Generalized maculo-papular rash for ≤3 days
- ***Occipital and/or posterior auricular lymphadenopathy***
- Arthralgias and arthritis – common in adults

Congenital rubella – congenital malformations

- Eye (cataract)
- Hearing (deafness)
- Cardiac (pulmonary artery stenosis)

HSV7 and HSV8 infection

HSV7 - Over 95% of adults have been infected and are immune to HHV-7

- Primary infection of HHV-7 among children between the ages of 2 and 5
- In adults - develops with mononucleosis syndrome, in immunocompromised - with pneumonia, encephalitis, retinitis, hepatitis
- It has been associated with cases of exanthem subitum, pityriasis rosea, neurological manifestations and transplant complications.

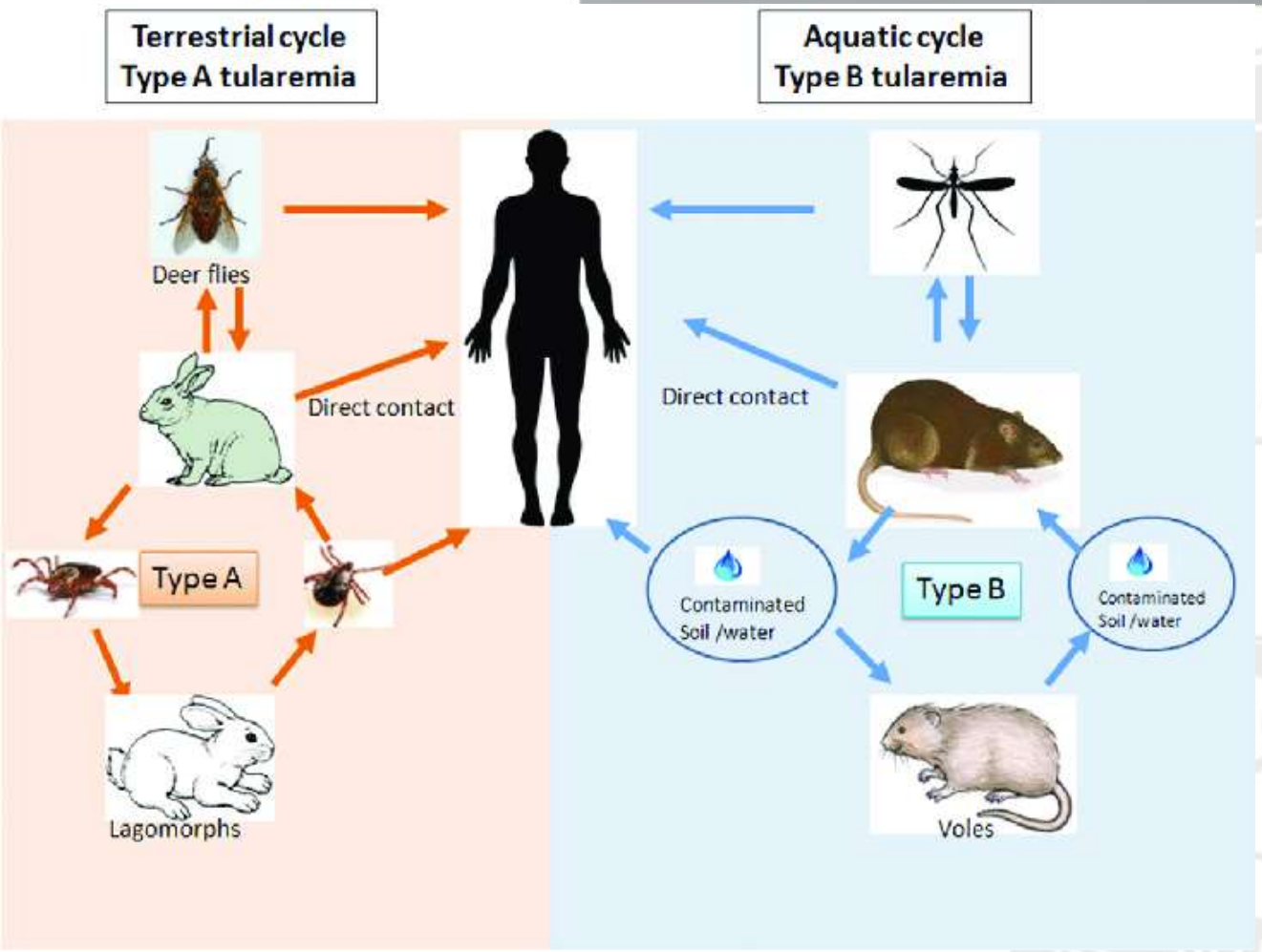
HSV 8 - in 95% develops Kaposi's sarcoma, is transmitted sexually, through saliva, transplanted organs.

Cutaneous KS – nodules, 0.5-2 cm in size, violet, pink, brown, red-brown or purple-red on the face, neck, nose, oral cavity, lower extremities

KS with visceral localization – is frequently found in patients with HIV infection in any organ or system: lymph nodes, lungs, intestine, liver and spleen

Herpetic infection	Diagnosis of herpes infection	Treatment
HSV1 and HSV2	DNA-HSV1, HSV2 by PCR from vesicles, ulcerative lesions, CSFAnti-HSV1 and Anti-HSV2 IgM, IgG – in primary infections	Aciclovir, Valaciclovir, Famciclovir, Foscarnet, Penciclovir
HSV3 (Varicela-Zoster)	Clinically, to assess response of the host - Anti VZV IgG by ELISA or FAMA	Aciclovir, Valaciclovir, Famciclovir
HSV4 (EBV)	EBV-VCA IgM antibodiesIgG anti-EBNA antibodies EBV-DNA	-
HSV5 (CMV)	Anti-CMV IgM – acute phase/ CMV reactivationsAnti-CMV IgG - avidity testpp65 antigen and CMV DNA by PCR from blood and urine	Ganciclovir, Valganciclovir, Valaciclovir Cidofovir, Foscarnet
HSV6 (Measles, Roseola infantum)	-	-
HSV7 (Exantema subitum)	-	-
HSV8 (Kaposi's sarcoma)	BiopsyEndoscopy with biopsy	HAART therapy cryosurgery, intralesional vinblastine, excision, radiotherapy, systemic chemotherapy

Tularemia – rabbit fever



Infection caused by ***Francisella tularensis*** can occur from the bite of an infected tick, deer fly, other blood-feeding insects, or contact with an infected animal.

Infection can also occur after ingesting or inhaling the bacteria or after exposure to laboratory accidents. In nature, infections occur most frequently in hares, house rabbits and rodents

TULAREMIA

Francisella tularensis
Aerobic fastidious gram-negative Coccobacillus (>100 species)

Zoonotic infection

Vectors

"Rabbit Fever"
-Rabbits -Muskrats
-Rodents -Beavers

-Tick -Mosquitoes
-Horse flies – Fleas
-Lice

Used for Bioterrorism

Ulceroglandular

Fever
+
Erythematous papulo-ulcerative lesion

Tender lymphadenopathy

Suppuration+/-

Glandular

Regional lymphadenopathy single or multiple nodes (Suppurative)

Most common presentation among children

NO evident lesion at the site of inoculation

Oculoglandular

Splashing infected material into the eye

Unilateral Symptoms

- Pain
- Photophobia
- Increased tearing

Parinaud's Oculoglandular Sx.
Conjunctivitis +lymph nodes on the same side

Pharyngeal

Ingestion of contaminated food /water

Small percentage in the United States

- Exudative pharyngitis
- Tonsillitis
- cervical lymphadenopathy

Pneumonic

Direct inhalation of the organism into the lungs.

More common in adults. Farmers, sheep shearers, landscapers

- Fever
- Myalgias
- Nausea
- Chest pain, and cough

Typhoidal

Systemic febrile illness without prominent regional adenopathy

Affected patients often have chronic underlying conditions

- Fever
- Nausea
- Abdominal pain
- Diarrhea
- Sepsis/Shock

Treatment

Severe Disease
Gentamicin (IV,IM)
Streptomycin (IM)

Moderate Disease
1 Ciprofloxacin /Levofloxacin
2 Doxycycline

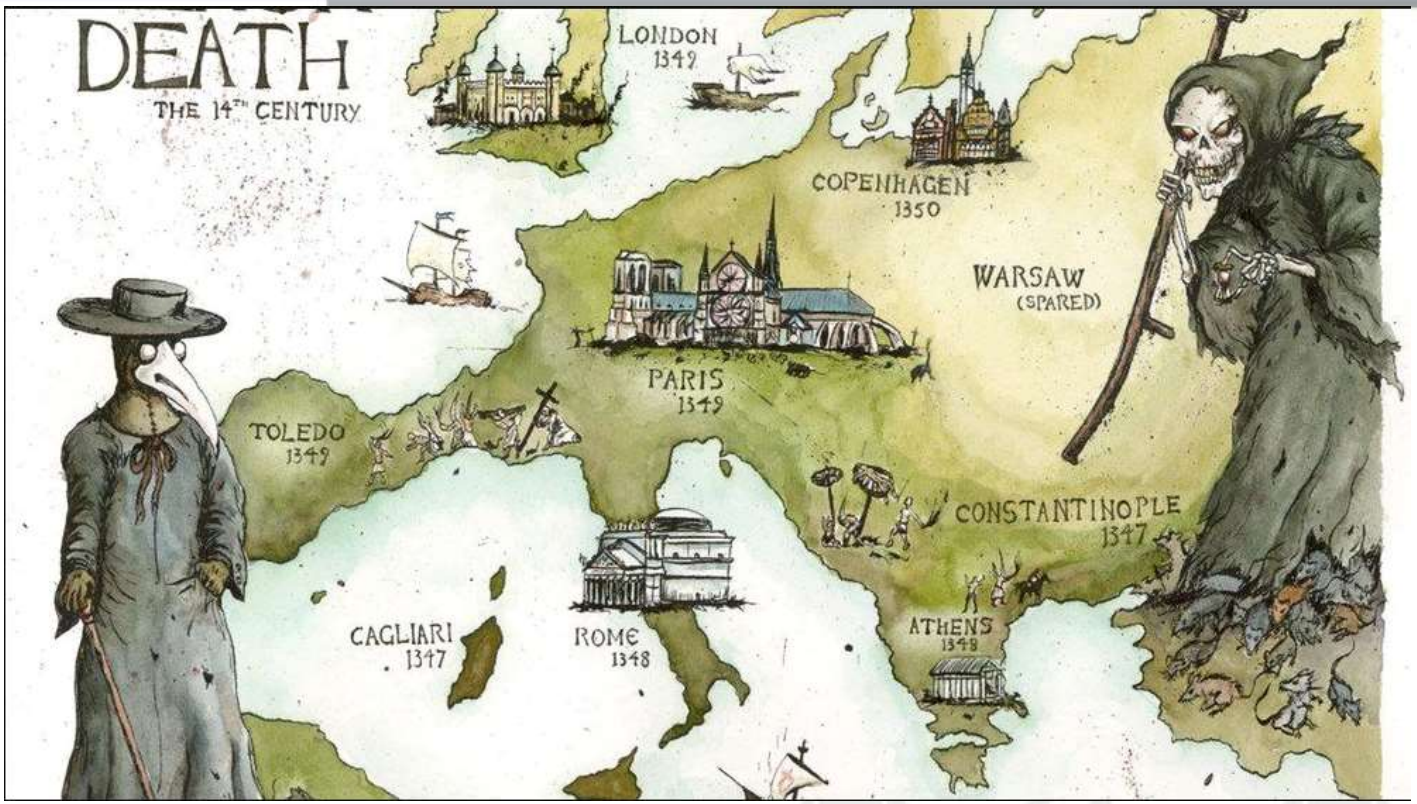
Diagnosis

Clinical syndrome + epidemiologic risk factors

Serology *(preferred)*	Culture & GS	PCR
Agglutination>1:116	Rarely positive	Not widely available

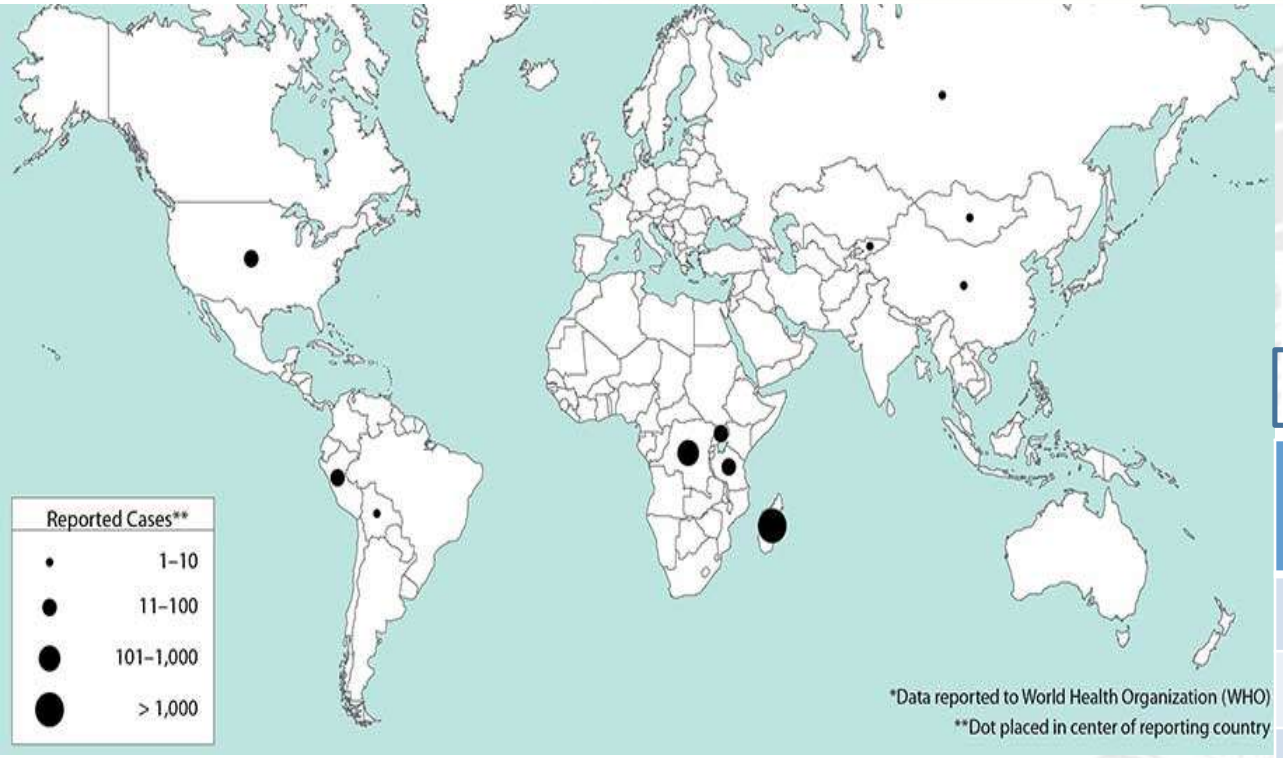
@TheIDTrivia

Plague or Black Death



The "Black Death" was believed to be responsible for the disappearance of nearly 350-375 million people from the world's population. The "Black Death" started from Central Asia and reached Europe in 1347 where it killed approximately 30-60% of its population (between the years 1348-1350).

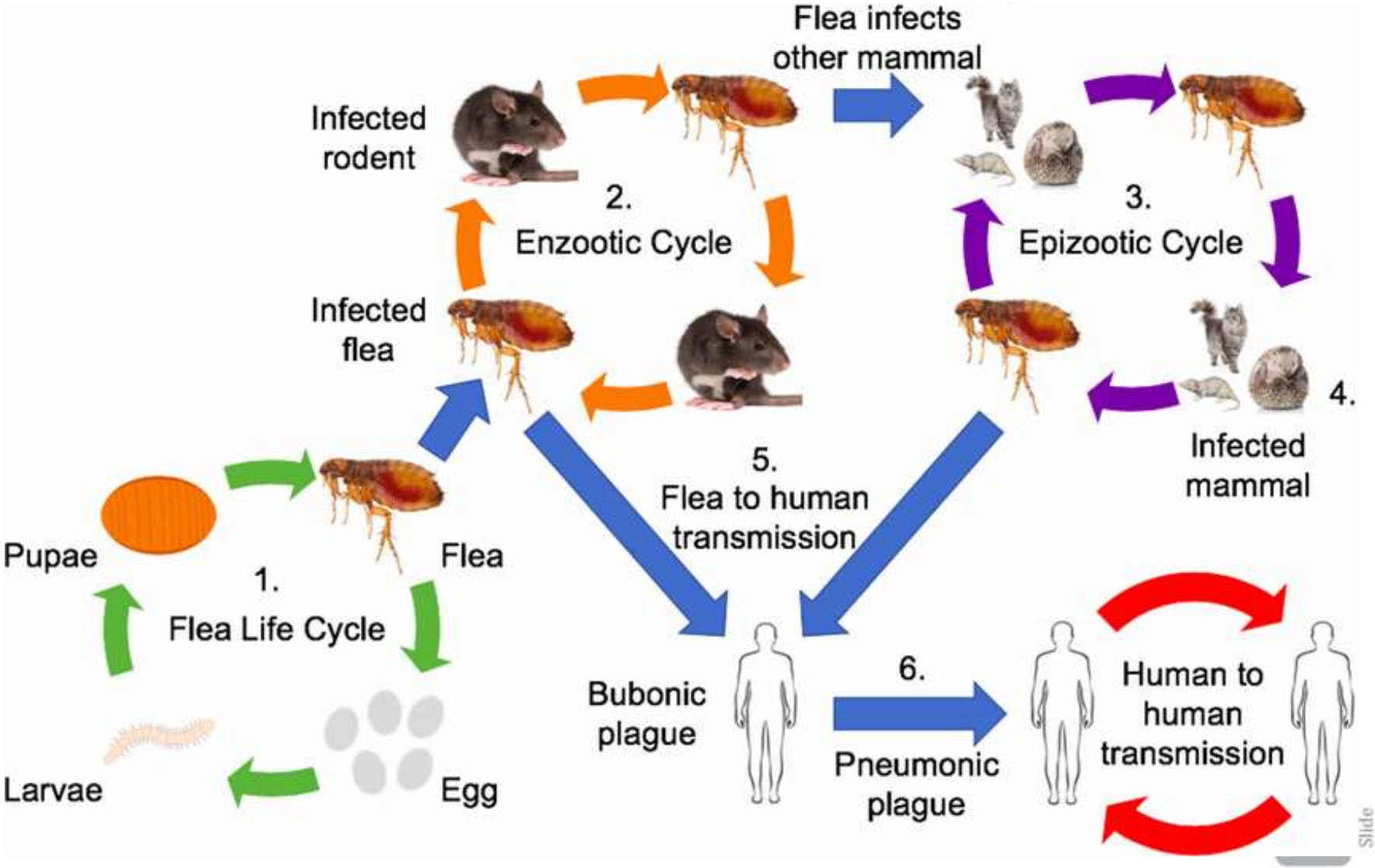
Plague cases reported in 2013-2019

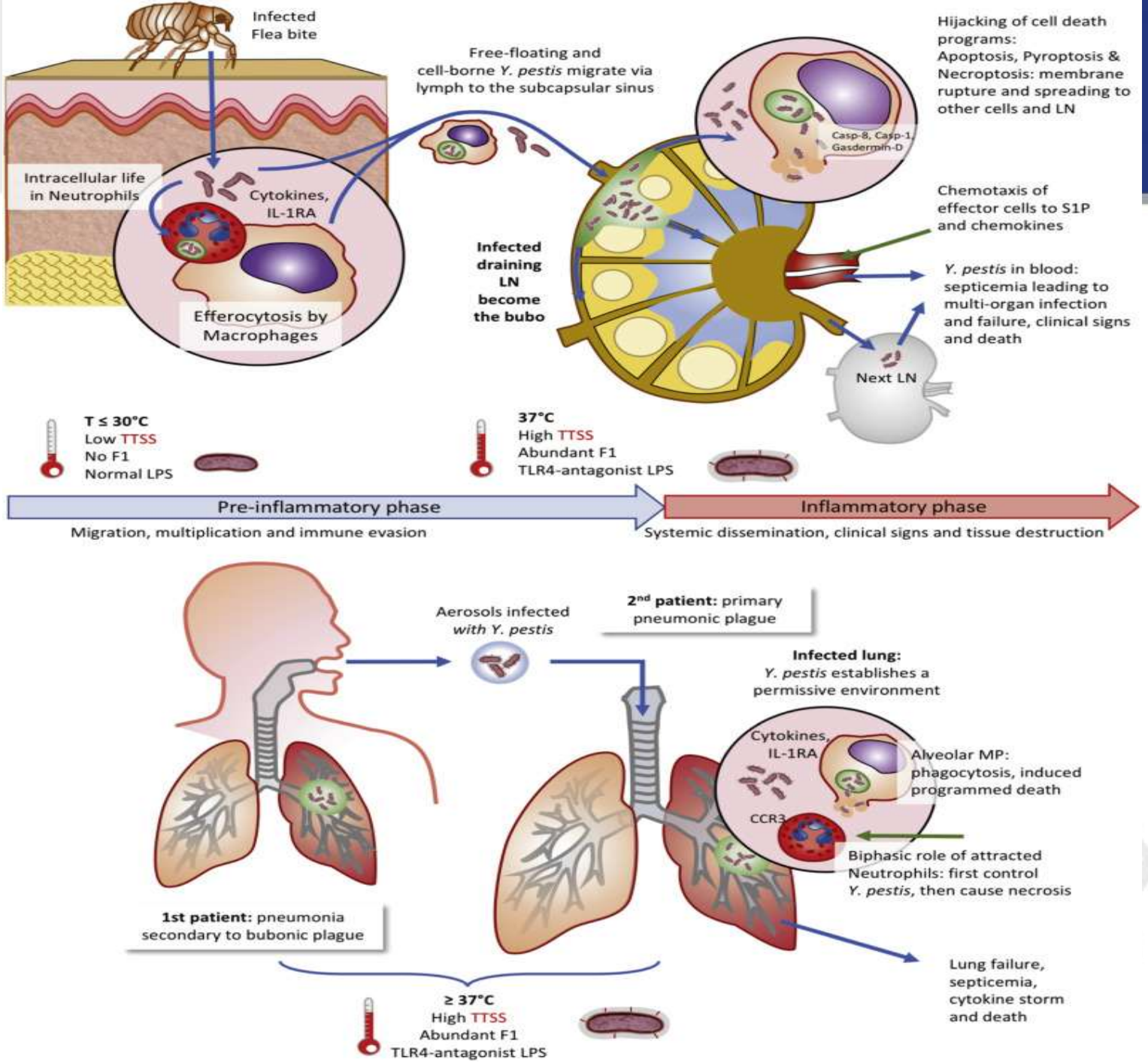


SUA

Years	Total cases	Deaths
2013	4	1
2014	10	0
2015	16	4
2016	4	0
2017	5	0
2018	1	0
2019	1	0

Plague, epidemiology




Infected
Flea bite
Intracellular life
in Neutrophils
Cytokines,
IL-1RA
Efferocytosis by
Macrophages
Free-floating and
cell-borne Y. pestis migrate via
lymph to the subcapsular sinus
Hijacking of cell death
programs:
Apoptosis, Pyroptosis &
Necroptosis: membrane
rupture and spreading to
other cells and LN
Casp-8, Casp-1,
Gasdermin-D
Chemotaxis of
effector cells to S1P
and chemokines
Infected
draining
LN
become
the bubo
Y. pestis in blood:
septicemia leading to
multi-organ infection
and failure, clinical signs
and death
Next LN
T ≤ 30°C
Low TTSS
No F1
Normal LPS
37°C
High TTSS
Abundant F1
TLR4-antagonist LPS
Pre-inflammatory phase
Migration, multiplication and immune evasion
Inflammatory phase
Systemic dissemination, clinical signs and tissue destruction
Aerosols infected
with Y. pestis
2nd patient: primary
pneumonic plague
Infected lung:
Y. pestis establishes a
permissive environment
Cytokines,
IL-1RA
Alveolar MP:
phagocytosis, induced
programmed death
CCR3
Biphasic role of attracted
Neutrophils: first control
Y. pestis, then cause necrosis
1st patient: pneumonia
secondary to bubonic plague
Lung failure,
septicemia,
cytokine storm
and death
≥ 37°C
High TTSS
Abundant F1
TLR4-antagonist LPS

Plague, clinical forms

The bubonic form 80-95%

fever 38-39ºC
severe headache
fatigue
inguinal, axillary, cervical lymph nodes enlarged, painful, immobile, hyperemic,

The septicemic form 10-25%

fever 39-40ºC
chills
headaches
myalgia
muscle weakness
inflammation of the lymph nodes
diarrhea, vomiting
breathing difficulties
difficulty swallowing
delirium

Primary pulmonary form

Incubation period – 4-5 hours – 3 days
sudden onset with fever, headache, myalgia, cough with hemoptysis chest pain,
can be transmitted from person to person,
mortality ≈ 100%,
with specific treatment ≈ 50%

Diagnosis: Cultures, RIF, PCR ***Treatment: Streptomycin, Gentamicin, Doxacycline***

Cat Scratch Disease (Felinosis)

Bartonella henselae

1 **Primary inoculation papule**

1-3 weeks

2 **Regional lymphadenitis**

1. History of a cat scratch or lick 2 weeks prior.
2. Primary lesion: papule, vesicle or nodule
3. ***Sensitive regional lymphadenitis***.
4. Fever, anorexia, malaise.
5. Extranodal manifestations – prolonged fever, ocular and neurological manifestations, osteomyelitis

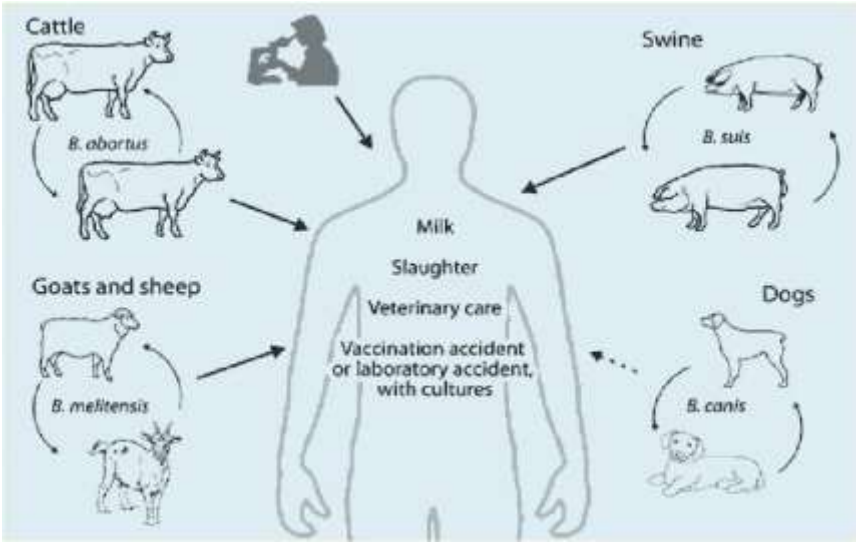
Treatment:

Azithromycin
Rifampicin
Trimethoprim-sulfamethoxazole
Ciprofloxacin

Brucellosis - widespread zoonoses

Incubation period 2-3 weeks – 3-4 months

- Brucella melitensis (goats, sheep, camels)
- Brucella abortus (cattle)
- Brucella suis (pigs)
- Brucella canis (dogs)



Acute brucellosis

- gradual onset
- rolling fever
- night sweats
- anorexia, asthenia
- headache, myalgia
- lymphadenopathy, hepatosplenomegaly
- neurological disorders

Chronic brucellosis

- prolonged low fever
- arthritis, ankylosis
- Spondylodiscitis
- Orchoepididymitis
- Hepatosplenomegal
- meningitis
- endocarditis

Laboratory diagnosis

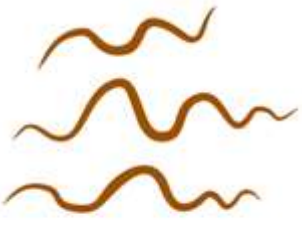
Serological tests:
RA Right IgM
RA Heddelson
PCR test

Treatment

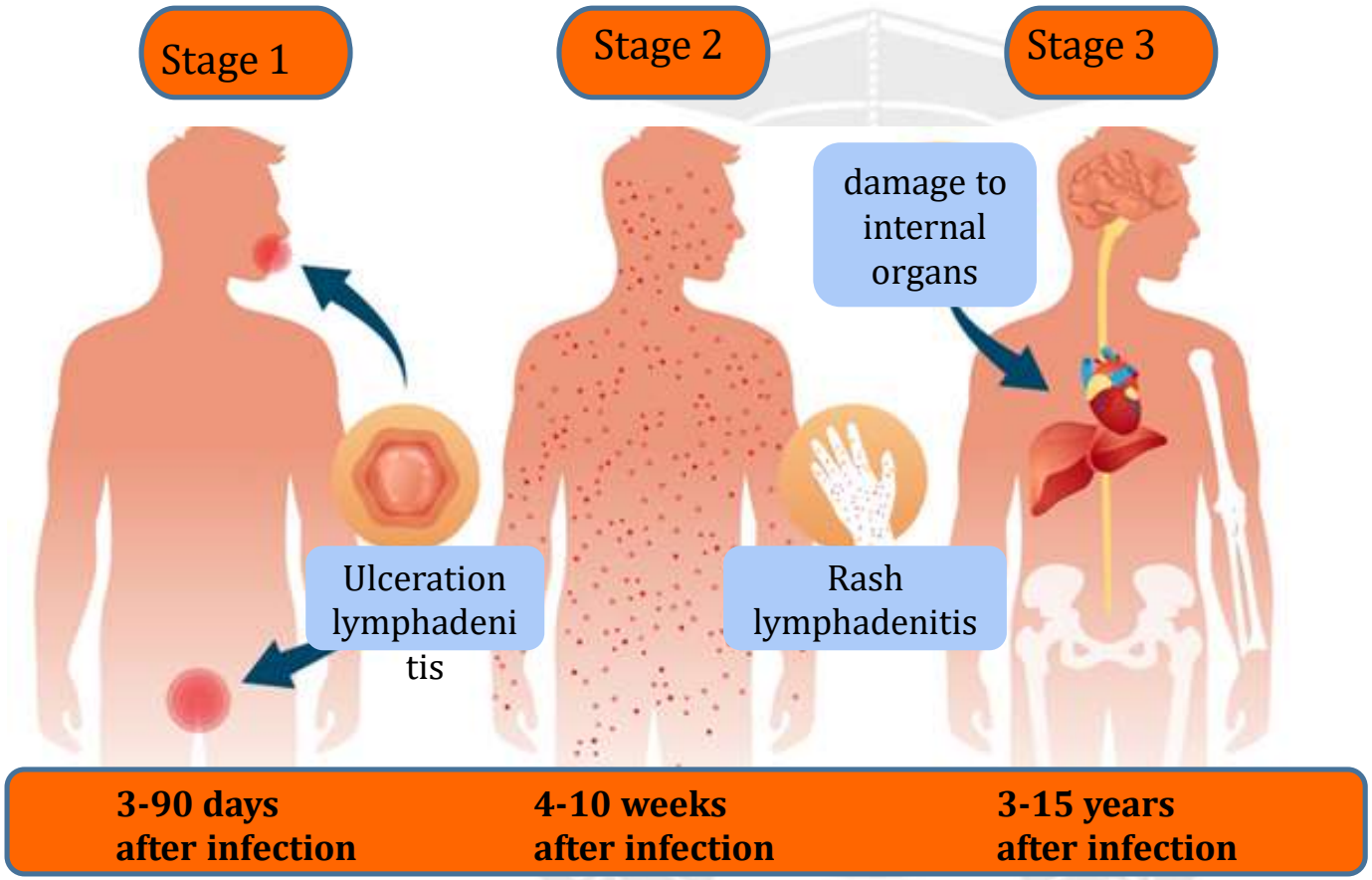
Streptomycin
Gentamicin
Doxycycline
Rifampicin

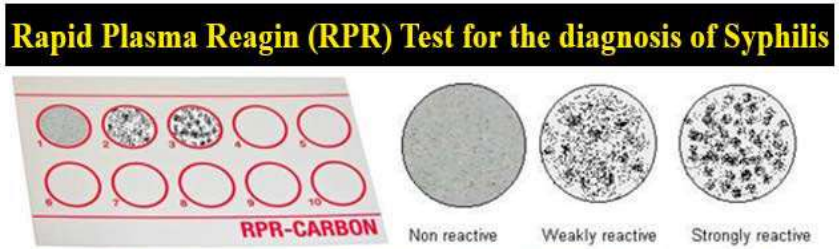
	Diphtheria	Tuberculosis	Atypical mycobacterial infection
Etiological agent	Corynebacterium diphtheriae	Mycobacterium tuberculosis	Mycobacterium avium Mycobacterium intracelulare
Incubation period	2-5 days	unknown	unknown
Transmission	Aerosol by close contact	Drops of saliva through coughing, sneezing or talking	Airborne Water drops from open tanks
Clinical manifestations	fever 38ºC sore throat dysphagia fibrinous films breathing difficulties submandibular edema	***Pulmonary TB 80%*** Fever 37-37.8ºC Night sweats Productive cough > 3 weeks Hemoptysis Hilar/parahilar lymphadenopathy Weight loss CT-Cavity with caseous necrosis	COPD in adults Disseminated infection in the immunocompromised Chronic productive cough CT-Cystic lung cavity Weight loss Night sweats Dyspnea Abdominal pains
Lymphadenitis	*local cervical lymphadenopathy*	Posterior cervical, supraclavicular lymph nodes in 35% of extrapulmonary TB in HIV infected	*Isolated cervical lymphadenopathy in children*
Laboratory confirmation	Isolation of C.diphtheriae	Sputum microscopy at BAARX-pert MTB/RIF	Isolation of MAC from sputum, blood
Treatment	Anti diphtheria serum Penicillin,	Rifampicin Isoniazid	Azithromycin Clarithromycin

Sifilis



Treponema Pallidum





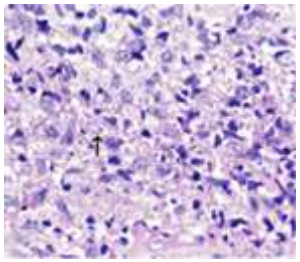
Treatment

Penicillin G

Tropical parasitic diseases

Leishmaniasis

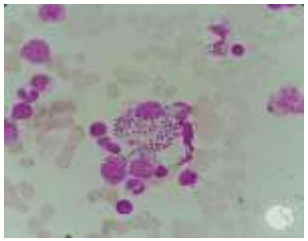
Cutaneous



Skin smear microscopy

Visceral

Fever
Hepatomegaly
Splenomegaly
Lymphadenitis
Anemia
Thrombocytopenia
Leukopenia



Aspirated from the bone marrow

Trypanosomiasis - sleeping sickness

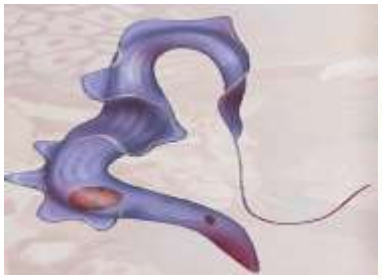
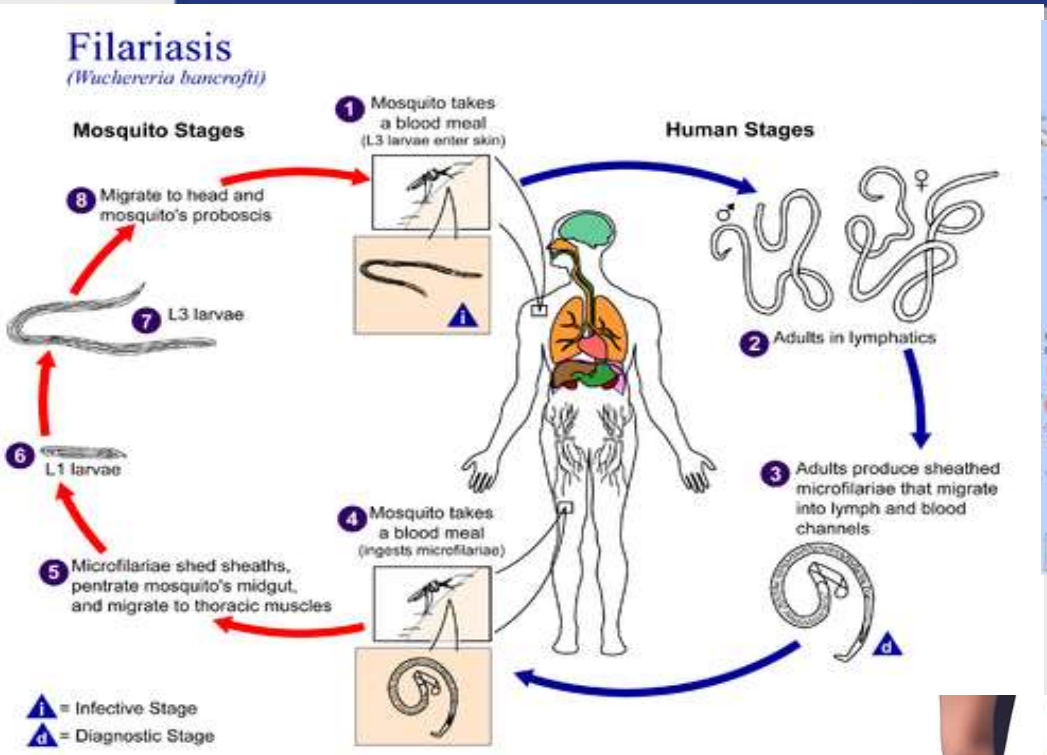
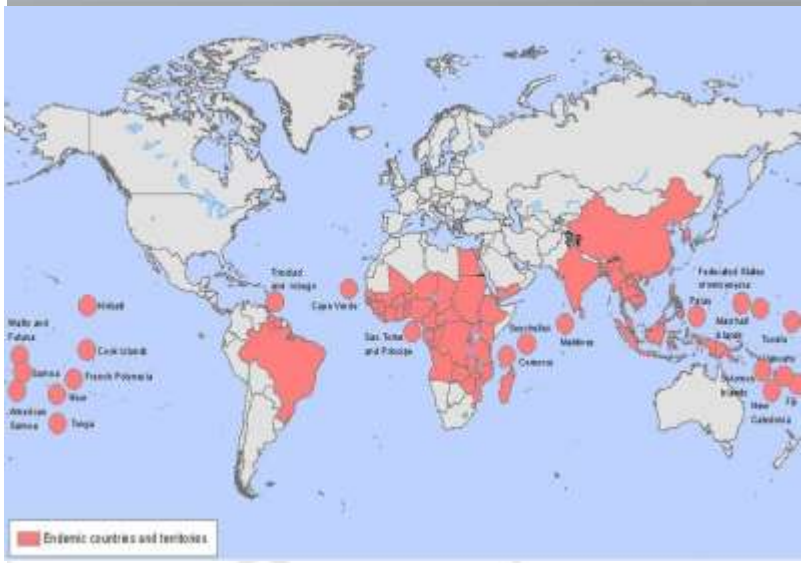


Figure 50-3 Trypanosomiasis (African Sleeping Sickness).

Filariasis





- Fever
- Chills
- Myalgia
- Lymphadenitis
- Eye damage
- Elephantiasis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