

Staining
Gram : Negative Rods
Geimsa : Bipolar

Yersinia pestis

Cause of plague (Black Death)

Enterobacteriaceae



(safety pin) appearance
long generation time

Infect
In tow cycles

Types of plague

Bubonic plague

Incubation period of 2-6 days
bacteria multiply lymph nodes become hot, swollen, tender, hemorrhagic

characteristic black buboes + non selective symptom's

axilla or groin

Mortality rates for treated individuals from 1 to 15 %

bacteria can spread to other part of body

Septicemic plague

fever, chills, extreme weakness, abdominal pain, possibly bleeding into the skin and other organs, and shock.

especially on fingers, toes, and the nose.

Mortality rates for treated individuals range 40 %

Pneumonic plague:

Incubation period of 1-3 days
only form of plague that can be spread from person to perso

fever, headache, weakness shortness of breath, chest pain, cough, and sometimes bloody or watery mucous, cyanosis, respiratory failure and shock.

Mortality rates for treated individuals rang 50%



Buboes



Acral gangrene

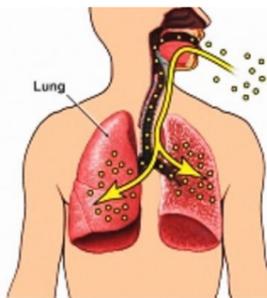
most common complication of bubonic and septicemic plague is : disseminated intravascular coagulation (DIC), pneumonia and meningitis.

Virulence factors



Why bleeding under skin (black discoloration)?

Bacterial endotoxins → Endothelial damage → Stimulating blood coagulation → cause disseminated intravascular coagulation (DIC)
DIC, causing tiny clots throughout the body and possibly ischaemic necrosis (tissue death due to lack of circulation/perfusion to that tissue) from the clots.
Depletion of the body's clotting resources, so that it can no longer control bleeding. Consequently, there is bleeding into the skin and other organs, which can cause red and/or black patchy rash and hemoptysis/hematemesis



Lung

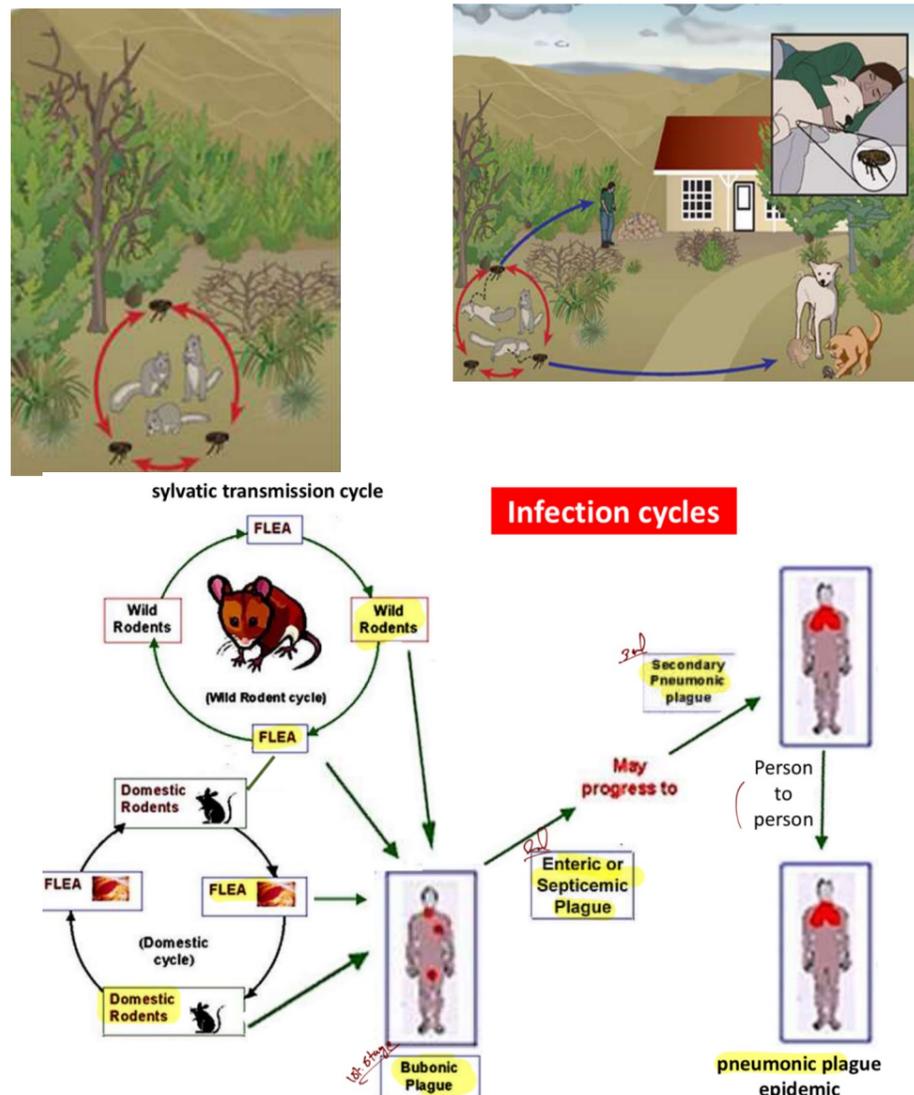
Diagnosis

history of camping and sleeping on the ground.
Having an urban animal
Rodent exposure or receipt of insect bites.
Bronchial wash / tracheal aspirate

Biopsy of :
liver, spleen, bone marrow, lung, or bubo.

Whole blood , fluorescent antibody microscopy, PCR (faster test) .

Infection cycles



ليس خطوة واحدة عملاقة التي حققت الإنجاز إنما مجموعة خطوات صغيرة



Quizzes Time :



Arichive

1. Yersinia pestis is a bacterium responsible for plague, which of the followings is TRUE?

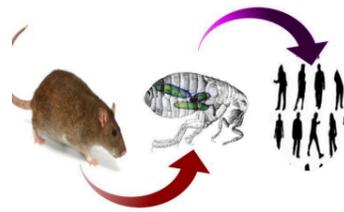
- a. Motile.
- b. Spore forming.
- c. Has a safety pin appearance (bipolar staining).
- d. Penicillin is the treatment of choice.
- e. Can not grow at 28°C.

Answer : c

2. The plague spreads from ---- to ---, and then to ---

- A. Rats, fleas, humans
- B. Fleas, birds, humans
- C. Birds, mosquitoes, humans
- D. Mosquitoes, rats, humans
- E. Humans, fleas, rats

Answer:A



3. False about yersinia?

- A. It hemolyzes blood
- B. It causes bubonic plague
- C. It is a Gram-negative bacterium
- D. It is transmitted by fleas
- E. It can infect humans and animals

Answer:A

4. Bubonic plague is transmitted by which of the followings?

- A. Xenopsylla cheopis flea bite.
- B. Sexually.
- C. Fecally.
- D. Armored mites bite.
- E. African ticks bite.

Answer:A

Websites

1. What is the causative agent of the plague?

- a) Yersinia pestis
- b) Enterobacteriaceae
- c) Black Death
- d) Safety pin appearance
- e) Bubonic plaque

Answer:a

2. What is the characteristic manifestation of bubonic plague?

- a) High fever (hyperpyrexia)
- b) Pain or tenderness at regional lymph nodes
- c) Septicemia and convulsions
- e) Diffuse, hemorrhagic changes in the skin

Answer:b

3. What is the main reason for the black discoloration of the skin in the plague?

- a) Bacterial endotoxins
- b) Endothelial damage
- c) Blood coagulation
- d) Depletion of clotting resources
- e) Respiratory failure

Answer: a

4. Which type of plague is characterized by fever, chills, extreme weakness, abdominal pain, and possible bleeding into the skin and other organs?

- a) Bubonic plague
- b) Septicemic plague
- c) Pneumonic plague
- d) Sylvatic transmission
- e) Domestic cycle

Answer:b

5. What is the most common complication of bubonic and septicemic plague?

- a) Disseminated intravascular coagulation (DIC)
- b) Pneumonia
- c) Meningitis
- d) Convulsions
- e) Shock

Answer:a

