Rickettsiae and Chlamydiae

Rickettsiae and Chlamydiae are obligate intracellular parasites. They can reproduce only within a host cell, which is a similar characteristic of viruses. Rickettsiae and Chlamydiae are smaller than most bacteria, but their cell walls, and cell components are similar to bacteria.

1. Rickettsiae

Rickettsiae are small, gram-negative rods or coccobacilli and form different patterns (single, pairs, chains) which is referred to as being pleomorphic.

They live in ticks, fleas, mites, and lice, and are transmitted to humans when bitten by these blood-sucking insects.

Diseases caused by rickettsiae are typhus fever (lice), and Rocky Mountain spotted fever (tick).

2. Chlamydiae

Chlamydias are smaller than rickettsiae and they are gram-negative cocci.

They have an unusual life cycle which involves two forms:

a. elementary body (infectious form) - The bacteria is taken into a cell and surrounded by a membrane, forming a vacuole.

b. reticulate body (non-infectious form) - Within the vacuole the elementary body enlarges and divides several times by binary fission to form a large number of elementary bodies. Some decrease in size and remain elementary bodies. They are released from the cell and can infect other cells.

Chlamydia are transmitted to humans by contact or through the respiratory system.

Diseases caused by chlamydias include trachoma, which is a disease of the eye that causes blindness, a type of mild pneumonia, psittacosis, and two sexually transmitted diseases known as nongonoccal urethritis and lymphogranuloma venereum.