**Salmonellosis**

Salmonellosis (***Salmonella gastroenteritis***) is caused by a gram-negative, motile, non-spore-forming rod bacterium of the ***Salmonella*** type. Among 2,000 Salmonella serovars (strains; a subspecies category) identified so far, ***S. typhimurium*** is found most frequently in humans.

Salmonellosis is the second most common food borne disease after campylobacteriosis in Europe. The disease can cause around 2 to 3 million cases annually; and approximately 45,000 cases are reported solely in United States in one year. In 2015, 90,300 and 178,000 deaths were caused due to nontyphoidal salmonellosis and typhoidal salmonellosis respectively.

**Transmission**: The disease results from a true **food borne infection**. It mainly spreads from birds and animals where these organisms act as source. The micro organisms resides in the intestinal tracts of these organisms and invade the cells of humans upon ingestion of the contaminated foods such as beef products, poultry, eggs, egg products, or water. As the bacterium enters the cells, the incubation time is only about 8 to 48 hours. The micro organisms enter the intestinal mucosa of the humans, where they reproduce and multiply. The synthesis of various toxins (**enterotoxin and cytotoxin**) results in the lysis and disruption of the epithelial cells thereby leading to severe symptoms.

**Symptoms**: Abdominal pain, cramps, diarrhea, nausea, vomiting, and fever are the most prominent symptoms, which usually persist for 2 to 5 days but can last for several weeks. The individuals with weak immune system including the old and children are more prone to the disease. Around 1 billion salmonella have been found per gram of feces of an infected person. The disease is associated with the loss of fluids which can cause problems for children and elderly people in particular. In addition, the disease shows irritable and inflammatory bowel syndrome, typhoid fever due to release of toxins inside the host cells and enteritis (intestinal inflammation) as well.

**Treatment and Prevention**:

1. The usage of electrolytes (containing salts of sodium chloride and potassium chloride)

2. Antibiotics (ceftriaxone) and fluoroquinolone drugs

3. Azithromycin

4. Good food-processing practices

5. Proper refrigeration and adequate cooking (heating at 63-74°C) etc.