

FOOD POISONING

- Food poisoning is an acute gastroenteritis caused by ingestion of food or drink contaminated with either living bacteria or their toxins or inorganic chemical substances and poisons derived from plants and animals.

Types of Food Poisoning

Non Bacterial

Caused by chemicals

- Arsenic
- Cadmium
- Mercury
- Fertilizers
- Pesticides

Bacterial

- Salmonella species
- Staphylococcus aureus
- Clostridium Botulinum
- Clostridium perfringens
- Bacillus Cereus

Adapted from: <http://www.fda.gov/oc/ohrt/ohrt.html>
Food Safety and Inspection Service
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Salmonella Food Poisoning

- Agent: Salmonella Typhimurium, S. enteritidis, S. cholera-suis.
- Source: A disease of animals. Man is infected by ingesting contaminated meat, milk, sausages, custard & egg.
- Incubation Period: 12-24 hours.
- Clinical Symptoms: chills, fever, nausea, vomiting & profuse diarrhoea lasting for 2-3 days.
- Mortality about 1%.

Staphylococcus Food Poisoning

- Agent: *Staphylococcus aureus*— 05 enterotoxins identified. Toxin is heat stable resist boiling for 30 minutes.
- Source: Organism found on Skin, Nose & Throat of man & animal (cause Boils)
- Incubation Period: 1-8 hours.
- Clinical Features: Toxin acts on intestines & CNS. Sudden onset of vomiting, abdominal cramps and diarrhoea. Death uncommon.

Botulism

- Agent: Clostridium Botulinum
- Source: Organism widely distributed in soil, dust & intestinal tract of animals. Enters food as spores. Preserved food frequently cause botulism. Toxin is heat labile.
- Incubation Period: 12-36 hours.
- Clinical Features: Dysphagia, diplopia, ptosis, blurring of vision, muscle weakness. Most serious but rare disease, kills two third of its victims.
- Toxin is thermolabile.
- Antitoxin — 50000-100000 units I/V
- Treatment; Guanidine Hydrochloride orally 15-40mg/kg body wt reverses neuromuscular blockade.

Clostridium Perfringens Food Poisoning

- Agent: Clostridium perfringens
- Source: Organism is found in faeces of animals and humans. Contaminated meat and poultry
- Incubation Period: 6-24 hours. Spores are heat stable.
- Clinical Symptoms: Diarrhoea, abdominal cramps, little or no fever. Recovery is rapid.
- Prevention by cooking food prior to consumption or by rapid and adequate cooling before storage.

Bacillus cereus Food Poisoning

- Agent: *Bacillus cereus*
- Source: Spores are found in soil, raw, dried & processed food. Spores are heat stable.
- Incubation Period: 1-6 hours & 12-24 hrs.
- Clinical Features: Emetic form— vomiting, abdominal cramps & diarrhoea.
Diarrhoeal form— diarrhoea, abdominal cramps with little or no vomiting.

Investigation of Food Poisoning

- Complete list of people involved and their history.
- Laboratory investigations
- Environmental study
- Data analysis

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Prevention & Control

- 1) Food Sanitation: a) Meat inspection
b) Personal hygiene c) Sanitary improvements d) Food handling techniques e) Health Education
- 2) Refrigeration: Below 4 deg. C
- 3) Food Surveillance

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Difference between Cholera & Food poisoning

Cholera	Food poisoning
Occurs in epidemic, secondary cases occur	Often a single group of persons who shared a common meal No secondary cases
IP= few hours to 5 days	Up to 24 hours
Nausea & retching absent	Present
Vomiting Projectile, effortless, watery & continuous	Often single, severe vomit, mucus and blood streaked
Stools Copious, rice watery, inoffensive	Frequent, may contain mucus & blood, offensive
Tenesmus none	Yes
Abdominal tenderness none	Yes

Cholera	Food poisoning
Dehydration very marked	Distinct
Muscular cramps constant & severe	Less constant
Surface temperature subnormal	Often up to 100-102°F
Headache none	Often
Urine suppressed	Seldom suppressed
Blood CP leucocytosis	Normal

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OSPE Exercise

- The population of a geographically defined area is 200,000 at a specified point of time. Five deaths were reported in the child-age group of >2 Years due to acute severe diarrhea during the rainy season. If the population of children age group is 10%
- a. Which of the epidemic is in suspicion.
 - b. Calculate the cause specific mortality rate due to this diarrheal disease.

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OSPE Exercise

- The basic health unit Jhatla is located in tehsil Gujar Khan District Rawalpindi. The medical officer incharge of the BHU Jhatla noticed doubling of the cases of Diarrheal diseases in the catchment area during the last two weeks of September 09. Enlist the measures he has to take for prevention and control of this issue of public health importance.

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