SALMONELLOSIS

FECAVA WORKING GROUP ON ZOONOSES

1. DISEASE
Salmonellosis

2. NAME, DEFINITION, ETIOLOGICAL SPECIES
Salmonella enterica
- There are more than 2400 serotypes of S. enterica.
- The serotypes that are of major significance in human and veterinary microbiology are S. ser. choleraesuis, S. ser. arizonae, S. ser. enteritidis, and S. ser. typhimurium.
- S. ser. typhi, an extremely important human pathogen, is usually not pathogenic for animals and is of little zoonotic importance.
- Some serotypes have a preference for a certain animal host, others have no host adaptation.
- The species most commonly isolated from diseased animals and people are S. typhimurium and S. enteritidis.
- Most commonly infection occurs via GI route, with contaminated food, water or fomites.
- Occasionally airborne infection (short distance) might occur because the organism can survive in aerosol for prolonged periods of time.

3. DESCRIPTION OF THE ANIMAL RESERVOIRS
- Salmonella is a ubiquitous pathogen that infects a wide variety of mammals, birds, reptiles, and even insects.
- It seems that each domesticated farm animal species have an adapted Salmonella species.

4. CLINICAL SIGNS, IF THERE ARE ANY
- Number of infecting organisms, the immune status of the host, and concomitant diseases influence the severity of clinical signs.
- Gastroenteritis
  - fever
  - malaise
  - anorexia
  - vomiting, hypersalivation
  - diarrhea (watery to mucoid, even bloody)
  - abdominal pain
- Bacteremia and endotoxemia - in very young or immunocompromised animals
  - GI signs, followed by septicemia and death
  - persistent fever (without GI signs)
  - mental depression, pale mucous membranes, hypothermia, tachycardia, cardiovascular collapse in severe cases
  - DIC
- Metastatic infection - in a previously damaged organ
  - respiratory diseases
  - abscesses, cellulitis, meningitis, osteomyelitis, pyothorax
  - abortion, stillbirth, and birth of weak puppies or kittens
- Subclinical infection

5. WAY OF TRANSMISSION TO HUMANS
- Nontyphoidal salmonellosis in humans occur mostly by GI infection through contaminated product of animal origin, such as meat, eggs, or milk.
- Dogs are an important vector of non-foodborne infection via shedding of organisms in their faeces, especially for young children and immunocompromised people.
- Cats shed organisms orally, conjunctively, and faecally, and can contaminate their fur, food or water source.
- Lately, cases of infections of people by handling by handling dry dog and cat food are reported.
- Typhoidal salmonellosis (S. typhi, S. paratyphi) is not a zoonosis.
7. DIAGNOSIS IN HUMANS

- Identification of Salmonella in a clinical specimen, such as stool, blood, bone marrow (most sensitive), or vomitus. The test can be a culture-independent diagnostic test (CIDT) – it detects genetic material of the bacteria. Positive CIDT should be cultured.
- Serological tests are not recommended.

8. PREVENTION OF THE DISEASE

- Feeding of raw meat diets to animals should be discouraged.
- Hospital cages and kennels should be routinely disinfected.
- Since most of the human non-typhoidal salmonellosis cases are foodborne, attention to food preparation must be paid. Besides high enough cooking temperature (at least 74 °C internal temperature) this also includes strict hygiene of knives, cutting boards, countertops, etc.
- Personal hygiene is the most important preventive measure – hands must be washed every time after a contact with a pet, its food or faeces.