

2024 Batch-Lecture No. 24

Date: 23.04.2024

ABORTION.....Continued from previous class

SUMMARY OF CAUSES OF ABORTION IN CATTLE:

1. Causes of abortion in cattle can be divided into two viz. Infectious and Non infectious causes.
2. Infectious causes are further divisible into Bacterial, Viral, Mycotic and Protozoon.
3. Non infectious causes can be classified into following.
  - i. Chemical, drug and poisonous plant,
  - ii. Hormonal Causes,
  - iii. Nutritional Causes,
  - iv. Physical Causes,
  - v. Genetic or Chromosomal defect and
  - vi. Miscellaneous Causes
4. Major bacterial Causes of abortion in cattle includes following infections.
  - i. Brucellosis (Caused by *Brucella abortus*)
  - ii. Leptospirosis (Caused by *Leptospira pomona*)
  - iii. Listeriosis (Caused by *Listeria monocytogenes*)
  - iv. Tuberculosis (Caused by *Mycobacterium bovis*) and
  - v. Vibriosis (Caused by *Vibrio fetus venerealis*)
5. Apart from these five bacterial infections miscellaneous bacteria may sometime be responsible for abortion in cattle and these include *Streptococci*, *Diplococci*, *Staphylococci*, *E. coli*, *Alcaligenes fecalis*, *Pseudomonas aeruginosa*, *Corynebacterium pyogenes*, *Erysipelothrix insidiosa*, *Salmonella typhi B*, *Salmonella dublin*, *Salmonella cholera suis*, *Pasteurella multocida*, *Bacillus anthracis*, *Vibrio fetus intestinalis*, *Mycobacterium avium*, *Nocardia asteroides*, *Hemophilus* and *Mycoplasma*.
6. Viral Causes of abortion includes Infectious bovine rhinotracheitis (IBR-IPV), Epizootic bovine abortion (E. B. A. or Chlamydia).
7. Miscellaneous viral diseases which may cause abortion in cattle includes Foot and Mouth Disease, Rinderpest, Rift Valley Fever, bovine infectious

petechial fever, tick borne fever, BVD-MD Virus, Myxo virus, Para influenza-3, Malignant catarrhal fever, Pseudo rabies.

8. Mycotic causes of abortion includes *Aspergillus* spp, *Mucorales* spp and Yeasts
9. Protozoal causes of infection include Trichomoniasis, Toxoplasmosis, Anaplasmosis, Babesiosis, Trypanosomiasis and Besnoitis globidiosis.
10. Among non infectious causes of abortion in cattle, we have 6 subclasses as mentioned in point no. 3 above.
11. CHEMICAL, DRUG AND POISONOUS PLANTS which may cause abortion in cattle includes:
  - i. Nitrate,
  - ii. Arsenic,
  - iii. Chlorinated naphthalenes,
  - iv. Loco Weed plants,
  - v. Pine Needles and
  - vi. Perennial broom weeds.
12. HORMONAL CAUSES of abortion in cattle includes:
  - i. Estrogen,
  - ii. Gluco-corticoids and
  - iii. Deficiency of progesterone.
13. NUTRITIONAL CAUSES of abortion in cattle includes:
  - i. Starvation,
  - ii. Malnutrition,
  - iii. Vitamin A deficiency and
  - iv. Iodine deficiency
14. PHYSICAL CAUSES of abortion in cattle includes:
  - i. Douching, infusion and insemination of pregnant uterus,
  - ii. Rupture of amniotic vesicle,
  - iii. Trauma to embryo,
  - iv. Removal of corpus luteum,
  - v. Torsion of uterus or umbilicus and
  - vi. Stress due to transportation or work or systemic disease or major operation.
15. GENETIC OR CHROMOSOMAL CAUSES of abortion in cattle includes any genetic or chromosomal defect in embryo or foetus.

16. Miscellaneous causes of abortion in cattle also includes:

- i. Twinning,
- ii. Allergic reactions,
- iii. Anaphylactic reactions and
- iv. Tumour etc.

SALIENT POINTS FOR ABORTIONS DUE TO INFECTIOUS CAUSES OF ABORTION:

BRUCELLOSIS:

1. Abortions due to *Brucella abortus* usually occur from the 6<sup>th</sup> through 9<sup>th</sup> month of gestation and during that often premonitory signs of udder enlargement and vulvar edema are present.
2. The incidence of abortion will vary from 5 to 90 percent in a herd depending upon:
  - i. The number of susceptible pregnant animals,
  - ii. The rate of transmission,
  - iii. The virulence of the organism and
  - iv. Other factors
3. The foetal membranes are:
  - i. Edematous,
  - ii. Haemorrhagic,
  - iii. Leathery,
  - iv. Necrotic and
  - v. Often there is a brownish-yellow pasty exudates in the utero-chorionic space.
4. Retained placenta and metritis with a following period of genital discharge and infertility are common sequelae.
5. After recovery most cows carry their subsequent calves normally but a few cows may abort two or three times.
6. Occasional foetuses may be born alive but most are weak and premature and dies within a few hours.
7. The dead foetus may exhibit some autolytic changes of edema and haemorrhages of the tissues and body cavities and may be stained with meconium.

LEPTOSPIROSIS:

1. In all forms of this disease abortions, especially in cows in the last half of gestation, may occur 1 to 3 weeks after recovery from the acute febrile stage.
2. The incidence of abortion may vary from 5 to 40 percent of the herd depending upon:
  - i. The number of susceptible cattle in the last third of gestation,
  - ii. The number and virulence of the infective organisms and
  - iii. The opportunity for the spread of infection.
3. Not all susceptible infected cows in advanced pregnancy will abort.
4. Occasionally an infected cow will give birth to a live, weak calf that dies within a few days.
5. Retained placenta and its sequelae of metritis and infertility are common.

#### VIBRIOSIS:

1. Vibriosis due to *Vibrio foetus venerealis* is an occasional cause for abortion with a 2 to 10 percent incidence in susceptible herds.

#### LISTERIOSIS:

1. It is characterized by abortion the last trimester of gestation.
2. Cattle aborting from 7<sup>th</sup> to 9<sup>th</sup> month of gestation, the foetus was well preserved with few if any lesions in the foetal organs. Retained placenta, metritis and dystocia were commonly observed.
3. If the foetal death occurred before the 7<sup>th</sup> month the foetus was often retained in utero for up to 5 days before expulsion, autolysis of the foetus was advanced and retained placenta and metritis were not uncommon.

#### TUBERCULOSIS:

1. Where this disease is prevailing, it may be a fairly common cause of metritis, salpingitis, infertility and recurring abortion or the birth of a tubercular calf that dies a short while later may occur.
2. Retained placenta and lesions in the placenta similar to those of brucellosis may occur and a chronic curdled milk type of uterine exudates that persist is observed in this form of Tuberculosis.
3. The bilateral granulomatous uterine lesions, salpingitis and adhesions may be palpated per rectum in the non pregnant cow or cow in early pregnancy.

