POST PARTURIENT DISEASES IN DAIRY CATTLE

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ABSTRACT

Post parturient diseases in cattle are the main concern for the dairy cattle, as these diseases are mainly responsible for the decrease in the milk production and overall production of the dairy cattle. The main diseases in the post parturient period are metritis, retention of placenta, mastitis, ketosis, acidosis, milk fever.

KEYWORDS: Post parturient diseases, metritis, retention of placenta, mastitis, ketosis, Milk fever.

INTRODUCTION

Post parturient diseases in dairy cattle plays a major role in overall production of the cattle. As it is the period where there is a sudden and marked increase of nutrient requirement for milk production , changes in the endocrine profile of the animal also leads to various types of diseases like metritis, retained placenta, mastitis, ketosis, milk fever.

RETAINED PLACENTA

It is refered as the failure to expel the fetal membranes with in 24 hours after parturition.

Etiology

Impaired migration of neutrophils to the placental interface, decrease of proinflammatory cytokines in the caruncular tissue leading to decreased collagenolysis and fibrinolysis at the cotyledonary-caruncular interface, increased uterine contractility , increased cortisol and decreased estradiol concentrations in late pregnancy , that affects the immune system .

Clinical signs

Retained fetal membranes are characterised by varying amounts of degenerating, discolored, fetal membranes protruding from the vulva for >24 hours after parturition.

Treatment

Removal of the excess tissue that contributes to the contamination of the genital tract is recommended, untreated animals may expel the membranes in 2-11 days.

Prevention:

Nutritional supplementation of the animal during pregnancy period by vitamin-E and selenium is beneficial.

METRITIS

It is one of the most common disease occurring in first 14 days of the calving, inflammation of the uterine wall, glandular part and uterine muscle is called metritis. It is of 2 types acute puerperal metritis is a severe post partum uterine infection that leads to systemic signs of toxemia. Clinical metritis is post partum uterine infection that may not be associated with systemic signs of infection.

Etiology

Infectious agents like Brucellosis, Leptospirosis, Trichomoniasis and campylobacteriosis, deviation of uterine biome from proteobacteria and tenericutes to the bacterioides and fusobacteria , leads to dysbiosis and decrease in the bacterioides, polyphyromonas and fusobacterium leads to the development of the metritis.

Clinical signs

Uterine discharges of watery, red brown and foul smelling discharges, enlarged and flacid uterus, systemic signs are fever, decreased appetite, decreased milk production.

Diagnosis

It can be diagnosed by visual observation of the discharge of the uterus grade-1 clear to fetid red brown colour colour indicates the grade and severity of the infection.

Treatment

Anti microbial treatment for 5 days, fluid therapy if the animal is having systemic signs like fever, decreased appetite, anti inflammatory drugs should be used.

Prevention

Management practices like keeping the calving area clean, using bulls that produce small calves and feeding of anti oxidants like selenium, vitamin-E, and beta carotene.

MASTITIS

It refers to the inflammation of the udder

Etiology

It is caused by the microbial entry into the teat via teat canal various infectious agents are responsible for mastitis like Streptococci, Staphylococci, coliforms.

Mode of transmission

Contagious spread of pathogens occurs during milking, by milkers hands, or the improper hygiene at the miking parlour, that leads to the entry of the opportunistic bacteria from the environment.

Clinical signs

Based on the presence or absence of clinical signs , it is of 2 types : subclinical mastitis and clinical mastitis

Subclinical mastitis

It refers to the presence of infection without apparent local inflammation or systemic involvement , detection of the subclinical mastitis occurs by testing of milk for somatic cell counts (SCC) by using California mastitis test or any other automated methods , infection is present if the SCC is greater than 2,00,000 cells/ml , if SCC increases the milk production decreases. It is usually caused by Staphylococci or Streptococci bacteria

Clinical mastitis

Abnormality is detected in the milk like abnormal colour, clots, fibrin , changes in the udder is also evident, based on the severity of the clinical signs it is again divided into mild, acute, or severe.

1.Acute mastitis:

It refers to the severe clinical signs like very hot and painful, swollen udder and the onset is also very rapid.

2.Severe mastitis:

If the clinical signs also include the systemic signs then it is called as the severe form of mastitis.

Treatment

Use of antimicrobial drugs , NSAIDS to reduce the swelling of the udder and intramammary preparations if the udder swelling is severe is recommended;

Prevention

Dry cow therapy is advised if there is a history of mastitis in a herd, use of effective germicide as a post milking teat dip , management practices like maintenance of milkers hygiene and also environmental hygiene, proper cleaning of the fomites play a role for the effective prevention of the mastitis.

KETOSIS

It is caused by the elevated concentrations of the ketone bodies (acetone, acetoacetate, beta hydroxy butyrate) in the blood

Etiology

Due to the glucose demand and energy deficit in the milking period and intense adipose tissue mobilisation leads to the production of the non-esterified fatty acids (NEFA) and ketone bodies by gluconeogenesis in the liver, feeding of the silage that is in high concentration of butyric acid.

Epidemiology

Dairy cows in early lactation, risk increases with the parity, cows with high body condition score (BCS)are at high risk of hyperketonemia than the animals with low BCS.

Clinical signs

Decreased feed intake is the first sign, animals often refuse grain before forage, decreased milk production, lethargy, dehydration, rumen motility is hyper motile to hypomotile, CNS disturbances like abnormal licking, chewing, pica, incoordination and gait abnormalities, aggression and bellowing.

Diagnosis

Cow side tests like blood, milk, urine ketone body measurement, Beta hydroxy butyrate measurement (BHB), lab diagnostic tests like Rothras test for detecting ketone bodies in the urine.

Treatment

Oral administration of Propylene glycol. B12 administration, oral glucose or I/V glucose based on the condition of the animal.

MILK FEVER

Etiology

Occurs when there is calcium imbalance between the intake and excretion, due to the drain from the milk production.

Epidemiology

It occurs in the highly producing cattle and in cattle in third lactation or later lactations, more common in Jersey.

Clinical signs

Occurs in cattle at the onset of parturition to 3 days after parturition. It has 3 stages, in the 1st stage, cattle are standing and ambulatory, shows the signs of hypersensitivity and excitability like fine tremors over the flanks and triceps, ear twitching, if not treated at this stage it progresses to 2nd stage.

In the 2nd stage cattle are unable to stand and maintain sternal recumbency, anorectic, dry muzzle, sub normal temperature and cold extremities, pulse is weak, bloat, cattle maintain the S shaped curve to the neck.

In stage 3 cattle is unable to maintain the sternal recumbency, may progress to lateral recumbency, heart rate is increased to 120 bpm, in this stage cattle survives for only few hours leading to the death.

Diagnosis

Based on the serum calcium levels, serum calcium levels are less than 5.5 mg/dl

Treatment:

Oral calcium supplementation of upto 40-55 g or intravenous calcium infusion should be given

Prevention:

Feeding of the acidogenic diet for 3 weeks before calving, feeding of low calcium diets during the dry period, negative calcium balance leads to the calcium mobilisation at the onset of calving.

CONCLUSION

Post parturient diseases early diagnosis and treatment play a major role in the milk production of the dairy cattle, it also affects the overall productivity of the dairy cattle. Prevention of the post parturient diseases plays a major role in the health of the dairy cattle and also the milk production in the subsequent lactation.

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