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UNIT. HEALTH MANAGEMENT

Sub-topic 4: Mastitis / Mammitis / थनैला

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Introduction

Mastitis denotes **inflammation** of the **mammary gland** and **udder tissue**. Mastitis occurs when white blood cells (leukocytes) are released into the mammary gland, usually in response to bacteria invading the teat canal or occasionally by chemical, mechanical, or thermal trauma on the udder. Milk-secreting tissue and various ducts throughout the **mammary gland are damaged** due to toxins released by the bacteria resulting in reduced milk yield and quality. This disease is responsible for heavy economic losses to dairy farmers due to less production, discarding abnormal milk, decreased animal value and cost of veterinary services. Along with this mastitis milk causes various diseases like tuberculosis, brucellosis, sore throat, food poising in humans. Milk from cows suffering from mastitis has an increased somatic cell count. This disease can be identified by abnormalities in the udder such as swelling, heat, redness, hardness and pain. Other indications of mastitis may be abnormalities in milk such as a watery appearance, flakes, or clots. Prevention and Control of mastitis requires consistency in sanitizing the cow barn facilities, proper milking procedure and segregation of infected animals.

Etiology:

I. **Infectious agents:**
   - **a. Bacteria:** *Streptococcus, Staphylococcus, Pseudomonas, Corynebacterium bovis, E. coli, Klebsiella, Proteus* etc.
   - **b. Viral diseases:** Cow pox, FMD.
   - **c. Fungus:** *Aspergillus, candida, Cryptococcus.*
   - **d. Mycoplasma**

II. **Predisposing factors:**
   - **a.** Trauma or injury to teat and udder
   - **b.** Incomplete or forceful milking
   - **c.** Improper milking techniques
   - **d.** High yielding animals, pendulous udder and long cylindrical teats
   - **e.** Rough and unhygienic flooring

Transmission:

Mastitis spreads through infected water, contaminated bedding, milking utensils and milker's hand.

Symptoms:

A. Acute form:

- Fever
- Udder is swollen, hot and painful
- Milk may be yellowish or brownish
- Milk contains flakes or clots
- Loss of appetite

B. Chronic form:

- No swelling in the udder
- Udder becomes hard due to fibrosis
- Milk may show visible changes on careful examination
- Reduced milk production

Effects on milk composition:

Mastitis can cause a decline in potassium and an increase in lactoferrin. It also results in decreased casein, the major protein in milk. As most calcium in milk is associated with casein, the disruption of casein synthesis contributes to lowered calcium in milk. The milk protein continues to undergo further deterioration during processing and storage. Milk from cows with mastitis also has a **higher somatic cell count**. Higher the somatic cell count, the lower the milk quality.

Diagnosis:

i. ***Physical examination*** of the udder i.e. shape, size and uniformity.

ii. ***Strip cup test:*** A strip cup consists of a flat black plate partitioned into four areas. The milk form all four quarters is stripped directly into cup and thus we check the abnormality of the milk such as any flakes, clot or any change in milk consistency / colour.

iii. ***California Mastitis Test (CMT):*** This test requires plastic paddle with four chambers. Foremilk is discarded, and then a little milk drawn into each well. An equal volume of CMT reagent (Sodium hydroxide) is added, and gently agitated and the reaction is observed immediately. Formation of greenish blue precipitate or **jelly like clot** indicate positive test.

iv. ***Bacterial culture:*** Isolation of the organism from the milk. Milk sample is streaked on culture plates. Viable pathogens form colonies that are counted.

Treatment:

- Evacuate the udder.
- NSAID are widely used for the treatment of acute mastitis. These are aspirin-like drugs which reduce the inflammation and pain associated with mastitis.
- Intramammary antibiotics therapy / infusion with Vetclox or Pendistrin SH or Tilox @ 1 tube twice daily for 3 days. **(Milk should not be used for human consumption for atleast 72 hours after last infusion)**
- Systematic antibiotic administration like amoxicillin or ampicillin or chloramphenicol or ceftizoxime intramuscular.
- Supportive therapy like inj. Vitum H.

Prevention and Control:

1. Isolation and treatment of affected cow.
2. Healthy cows should be milked first and known infected cow milked at last.
3. The Udder of cow and Milker's hands should be washed with antiseptic solution before and after milking.
4. Floor hygiene is very important so floor of milking shed should be washed with running water.
5. Teat sores or any injury in the teat should not be neglected and treated at an earliest.
6. Regular testing of cow for mastitis.
7. Use of proper milking methods i.e. full hand milking followed by stripping.
8. Protect teat and udder from any injury.
9. Maintain hygienic conditions in cattle shed.
10. Culling of non-responsive cases from the herd.
11. Proper disposal of mastitic milk.
12. Do not allow animal to sit just after milking because teat pore is opened for some time after milking and thus infection can easily inter into teat.

Reference:

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