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Mastitis and Its Management in Dairy Animals

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Abstract

Mastitis being the inflammation of mammary gland affects the production profile and utility of dairy animals. Etiological agents are diverse in nature mainly virus, bacterial, fungal. Prompt management and veterinary care prevents the animal from further complication.

Keywords: Mastitis, production, dairy animal.

Mastitis

Bovine mastitis is the persistent, inflammatory reaction of the udder tissue due to physical trauma or microorganisms infections. Mastitis, a potentially fatal mammary gland infection, is the most common disease in dairy cattle. Milk from cows suffering from mastitis has an increased somatic cell count.

Causes: There is a large cohort of microorganism species that are known to cause mastitis. These range from mycoplasma, virus, fungus and bacteria. Bacterial organisms known to cause mastitis are E.coli; Str. agalactiae; Str. pyogenes; Pasteurella multocida, Staphylococcus aureus; Str. faecalis; Str. Zooepidemicus; Mycobacterium bovis; Klebsiella spp; Brucella abortus; Pseudomonas pyocyaneus; Leptospira Pomona, etc. Fungus responsible for mastitis are Aspergillus fumigatus; A. midulus; Trichosporon spp, Candida spp; etc. Sign of mastitis include inflammation of the udder, redness and may develop hard mass. The swollen mammary gland shows hotness, pain on touch and discomfort to the animal. If milked the milk is usually tainted with blood clots, foul smelling brown discharge and milk clots.

Management of mastitis

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Diagnostic tests: Californian mastitis test, Strip cup test, Paper test, Field mastitis test Mild clinical mastitis cases may not require treatment, but all clinical mastitis cases require antimicrobial agents (intra mammary infusion or parentally). Acute and per-acute mastitis cases require also supportive therapy (fluid and electrolytes) and non-steroidal anti-inflammatory drugs (NSAIDs) (Radostits *et al*., 2006). Antimicrobial treatment is usually not effective in chronic cases, better is to dispose off them. It is better to prevent mastitis before it becomes a problem. Preventive measures include:

a. Provide clean, dry and adequate bedding for cows to lie

b. Cows should be clean while entering the milking area

c. Use different cloth or paper towel for cleaning the teats on each cow

d. Teats should be completely dry and clean before milking

e. Use germicidal teat dips after milking

f. Feed the cows after milking so that they don't lie down immediately. This prevents the entry of microorganisms into teat canals that are still open from milking.

Intramammary Antimicrobial Therapy

For clinical cases of *S. aureus* mastitis, following intramammary infusions, given daily at 24-hourintervals in three treatments-

a. Procaine penicillin G (universally used) at a dose rate of 100 000 units

b. For clinical cases of *E. coli* mastitis, milking 12 times daily proved an effective treatment.

c. Penicillin-streptomycin combination (10^5 units - 250 mg).

d. Parenteral cefquinome therapy (1 mg/kg BW intramuscularly twice at 24 h apart).

e. Novobiocin (250 mg per infusion for three infusions).

f. Enrofloxacin (5 mg/kg BW) in treating E. coli mastitis

g. For clinical cases of coliform mastitis: Trimethoprim-sulfadiazine (trimethoprim 4g, sulfadiazine 20 g, intramuscularly every 24 h for 3-5 days).

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h. Oxytetracycline (16.5 mg/kg BW intravenously every 24 hours for3-5 days), combined with intramammary cephapirin (200 mg) and supportive care (intravenous or oral fluids) is more effectivein treating coliform mastitis.

i. Ceftiofur is an excellent choice for intramammary infusion in coliform mastitis

j. Ceftrioxone 3 g intramuscularly every 24 h for 3-5 days + phenaramine maleate 7 ml every 24 hour for2-3 days (to overcome induration).

k. Herbal product: Styplon bolus BID to prevent hemorrhage.

References

Radostits, O M, Gay, C C, Hinchcliff K W and Constable P D. 2006. Veterinary Medicine, 10th *Edn*, Diseases of the mammary gland, 15: 673-749; 1670-1672