INTRODUCTION

Bovine mastitis is recognized as one of the most costly diseases in dairy cattle across the world. It has been estimated that bovine mastitis reduces milk yield by approximately 21% in infected cattle herd. Inflammation of the udder, or mastitis, is commonly observed in cattle and buffaloes due to their anatomical predisposition, especially during the peripartum period. Mycotic mastitis had been documented to be caused by various genera of moulds and yeasts. Besides bacterial mastitis, the most frequently encountered fungi are Candida spp., Aspergillus spp., Trichosporon spp., Cryptococcus spp., Saccharomyces spp., Penicillium spp., etc. (Costa et al., 1993). The involvement of Geotrichum candidum in mastitis is extremely rare (Krzyzanowski and Sielicka, 1996). Aspergillus flavus produces aflatoxin that is secreted in milk and has a hazardous effect on human and animal health (Reddy et al., 2005).

The present report documents clinical mastitis in Jaffrabadi buffaloes and Gir cows with histories of protracted mastitic conditions despite the administration of different parenteral and intramammary antibiotics and other supportive treatment. Clinically, the buffaloes and cows had not displayed any feature of systemic infection. The affected udders were moderately fibrous. The milk from all the quarters was watery with thick flakes and in a few of these animals slightly blood tinged.

Keywords: Mastitis, Peripartum period, PVP-iodine

CASE HISTORY

Three Jaffrabadi buffaloes and 14 Gir cows in early phases of different lactation were diagnosed positive for clinical mastitis. They were diagnosed based on clinical histories of no systemic reactions, having normal feed and water intake, and rectal temperatures within the normal physiological range (101-102°F).

Clinical signs were reduced milk yield, change in pH (alkaline) and the presence of obvious clinical symptoms like the appearance of viscid mucoid gray white mammary secretion, secretions consist of a few yellow clots in watery supernatant fluid, and in a few of these animals, slightly blood tinged milk.

PRODUCT PROFILE

PVP-iodine is a stable complex of polyvinylpyrrolidone (PVP) and elemental iodine. The antimicrobial properties of PVP-iodine are...
related to non-complexed, freely mobile elemental iodine, I₂. The effective pH range of PVP-iodine is between 2.5 and 7 with a optimum range of 3 to 6 (Pharmaceutical and technical bulletin).

THERAPEUTIC MANAGEMENT

The affected quarters of all the 17 animals (three Jafferabadi buffaloes and fourteen Gir cows) were drained out completely and treated with antibiotics viz., penicillin, oxytetracyclin, gentamicin. enrofloxacin and ceftiraxone at standard therapeutic dose rates and intervals for 3 days, but none of the animals responded well to any of these antibiotics, and the mastitic condition became aggravated.

Treatment I

Affected quarters of six cows were drained out completely. The cows were administered 10 ml of 5% povidone-iodine solution (0.5% iodine, povindone solution) mixed with 500 ml 25% dextrose intravenously slowly 3 times on alternate days, and along with this, lavage of affected quarters was carried out by infusing 10% of providone-iodine (Betadine) dissolved in distilled water, slightly massaging the udder, and then draining the debris in the udder tissue twice a day. Out of these three cows, two successfully recovered within 4 days post treatment and two cows recovered after 6 days post treatment.

Treatment II

The three buffaloes and eight Gir cows which failed to respond to antibiotic treatment were treated with lavage of the affected quarters carried out by infusing 10% of providone-iodine (5% povidone-iodine solution, 0.5% iodine) dissolved in distilled water. Slight massaging was done, and then the debris of udder tissues were drained out twice a day. Of these, nine animals successfully recovered within 6-10 days of post lavage treatment. However, two animals (one buffalo and one cow) remained unresponsive to this treatment.

RESULT AND DISCUSSION

According to Hamzaa et al. (2006) the treatment of mycotic infection is problematic as compared to the bacterial infection. Few antifungal drugs are available, and there are many side-effects and the possibility of resistance. For many years povidone-iodine has been used in humans and veterinary applications to quickly get rid of wide variety of bacteria, virus, fungi, protozoa and yeast on the skin. Its antimicrobial activity is a non-specific mode of action with no tendency to form resistance (International Specialty Products, 2011).

According to Loftsgard and Lindquist (1960), Candida spp. utilize nitrogen from penicillin and tetracycline antibiotics. The use of such antibiotics encourages establishment of the infection by damaging the mammary epithelium. Similarly, during this case study, it was observed that initially, the use of antibiotics worsened the condition of clinical mastitis. Chahota et al. (2001) documented that association of G. candidum with mastitis is greater in those patients which have been subjected to prolonged irrational antibiotic therapy, as is evident in this case.

During this study, six animals were completely recovered by using intravenous PVP-iodine along with 10% PVP-iodine intra mammary lavage, and eleven animals responded with only 10% PVP-iodine intra mammary lavage. Similarly
Blood et al. (1983) also stated that none of the animals responded well to antibiotic therapy, but treatment with iodine, either sodium iodide intravenously, organic iodides by mouth or iodine in oil as an intra mammary infusion might be of value.

Looking to the symptoms, non-response to antibiotics, aggravated condition after use of antibiotics and response to iodine treatment might be suggestive of fungal infection. Hence, animals suffering from clinical mastitis and not responding to antibiotic therapy may be considered for iodine treatment and simultaneous confirmation of fungal or any other organisms might be taken up.

REFERENCES


