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Treatment of Fibrotic or Chronic Mastitis with Rid-Mast in Cattle

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Abstract

Fibrosis is a common sequel of 4 weeks of unsuccessful mastitis treatment which is of economic importance. Fibrosis may be diffused, involving whole quarter or local varying in size from pea-like lesions to bigger masses near the base or tip of the teat. A Nutraceuticals product Rid-Mast containing anti-oxidants, fat-coated micronutrients, buffers and energy supplements was tried in 139 cows and buffaloes with the fibrotic udder, given as electuary and found 83 per cent effective and their lost milk yield was restored.

Keywords: Fibrotic Udder; Cows and Buffaloes; Rid –Mast

Introduction

Fibrosis is a common sequel of 4 weeks of unsuccessful mastitis treatment which is of sentiment and economic importance. Fibrosis may be diffused, involving whole quarter or local varying in size from pea-like lesions to bigger masses near the base or tip of the teat [1]. In mastitis, tissue fibrosis occurred due to too much production of extracellular matrix [2]. Abnormally proliferated fibroblasts, which are activated during mastitis, replace the damaged tissue and produce excessive extracellular matrix [3]. Epithelial cells can produce fibroblasts and myofibroblasts through a process named Epithelial-mesenchymal transition [4]. Epithelial cells undergo the transition to a mesenchymal phenotype to produce these fibroblasts and myofibroblasts [5].

The main stromal cells of the mammy glands of the bovines are mammary fibroblasts. These fibroblasts control the epithelial cell behavior by cell-to-cell interaction, these interactions may be direct or indirect. Stromal fibroblasts also lead to persistent inflammation of the mammary gland by secreting cytokines, chemokine and growth factors [6,7]. Fibroblasts play an important role in changing acute inflammation to adaptive immunity and tissue repair because fibroblasts are the important soldier cells in the immune system [8]. The fibroblasts of the diseased tissue show a different type of composition compared with fibroblasts taken from the normal tissue at the same location in the body [9,10].

Antibiotics have poor cure rates in chronic mastitis because they do not penetrate in sufficient quantity into the fibrous tissue. Mastitis causes the destruction of milk-secreting cells Scar and connective tissue replaces the milk-secreting tissue leading to a permanent loss of milk production ability.

After 20 days of treatment with oral homoeopathic remedies such as Calcarica flour 200c and Silica 200c, the cows with fibrotic mastitis recovered at a rate of 46.45% [11]. The several cows with varying degrees of udder fibrosis were administered homeopathic remedies Phellandrium 30c and Carbo animalis 30c orally for 21 days. 64.28% was the recovery rate [12].

Oral homoeopathic remedies such as Carbo animalis 200c, Silicea 200c, and Conium maculatum 200c for 20 days resulted in the highest recovery rate of 89% for clinically chronic fibrotic mastitis cows; the majority of the cows recovered in 14.5 to 27 days [13]. Even though homoeopathic treatment is inexpensive, it takes a long time and requires skill in choosing the remedy.

The best ways to lessen fibrosis are by oral administration of medications that tend to make milk more acidic, as well as medications that boost immunity and lower oxidative stress. Using the Nutraceuticals product Rid-Mast, an attempt was made to defibrotide the udder and return milk production to its initial level based on the aforementioned theory.

Materials and Methods and Method

The study, which involved 23 buffaloes and 107 cows, was carried out in Bangalore and the Andhra Pradesh districts of Kadapa, Nellore, and Rayachoty between 2022 and 2023.

Oxenvet Nutraceuticals, Kadapa, produced the nutraceutical product Rid-Mast, which was purchased locally. The product contains 250 grams of organic buffers, coated vitamins, zinc Nano-minerals, and fat-coated micronutrients. The Nano minerals consist of Manganese 2 %, Iron 0.8%, Cobalt 0.15%, Copper 1.5% and zinc 5%. Eighty grams of treacle were added to 80 grams of the Rid mast to make an electuary. We bought analgesics and udder balms locally.

The clinical animals include were with allergic and chronic mastitis that attended the respective clinics (Table 1). For five to ten days, the substance was taken as an electuary at a dose of 160 grams daily.

S. No	Place of Research	Kind of Animal	Chronic Mastitis	
			Treated	Cured
1	Chenna Patna	cows	6	4
2	Bangalore	cows	15	10
3	Nellore	Buffaloes	23	15
4	Kadapa	cows	30	28
5	Rayachoty	cows	56	51
Total			130	108

Table 1: Showing the number of animals supplemented.

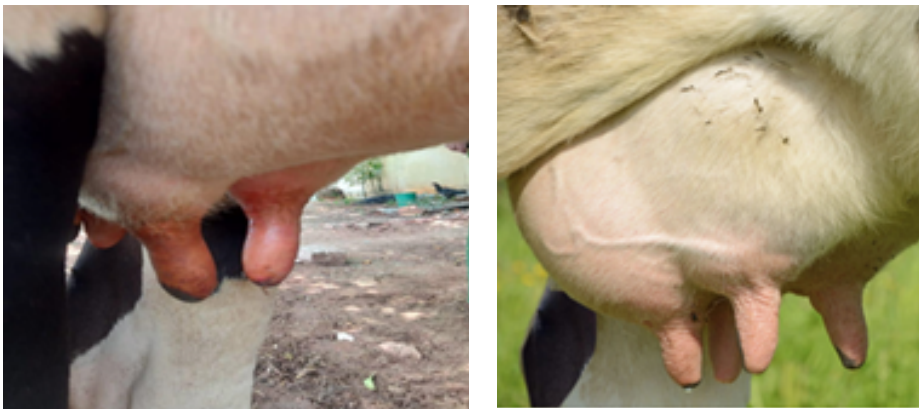

Figure 1: Before treatment and after treatment.

Results and Observation

Within five to ten days, the udder health returned to their pre-damage state and began producing milk normally. Two to three pockets were needed for extremely chronic patients. Whether pain relievers and analgesics were used or not, a successful recovery was seen. For buffaloes, the recovery rate was 65.21 percent, while for cows; it was 79.48 percent (Table 1 and Figure 1).

Discussion

Our theory worked. This is due to the product's high diffusion in the small intestines and it ability to overcome stress. It's possible that the micro minerals improved innate immunity, decreased oxidative stress, activated macrophages, and inhibited tumor necrosis and inflammatory cytokine production [14]. In addition to, metal oriented antibacterial complexes have several advantages over conventional antibiotics, making them an important seeker for the treatment of antibiotic- resistant bacteria. Metal Nano complexes have access to multiple and new modes of action, including ligand exchange responses, the product of ROS, the release of bioactive motes or interacting with nucleic acids [15]. The combined synergistic action of the Nano complexes might have reduced the fibrotic tissues of the udder and

brought back to normal condition in the udder. The acidic environment created by the buffers in the Ridmast, might have eliminated the detrimental bacteria living in the udder.

Conclusion

Reduction of the fibrotic udder in 107 affected cows and 23 buffaloes were successfully done with Rid-Mast.

Conflict of Interest

There is no conflict of Interest.

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References

1. Blood DC, Radostits OM, Henderson JA (2006) Veterinary Medicine. English Language Book Society, Tindal, pp: 451-481

2. Zou XZ, Liu T, Gong ZC, Hu CP, Zhang Z (2017) MicroRNAs-mediated epithelial-mesenchymal transition in fibrotic diseases. European Journal of Pharmacology 796: 190-206.

3. Ghosh AK, Quaggin SE, Vaughan DE (2013) Molecular basis of organ fibrosis: potential therapeutic approaches. Experimental Biology and Medicine 238(5): 461-481.

4. Canisso IF, Podico G, Ellerbrock RE (2021) Diagnosis and treatment of mastitis in mares. Equine Veterinary Education 33(6): 320-326.

5. Zou XZ, Liu T, Gong ZC, Hu CP, Zhang Z (2017) MicroRNAs-mediated epithelial-mesenchymal transition in fibrotic diseases. European Journal of Pharmacology 796: 190-206.

6. Buckley CD (2011) Why does chronic inflammation persist: An unexpected role for fibroblasts. Immunology Letters 138(1): 1214.

7. Hasan MS, Kober AK, Rana EA, Bari MS (2022) Association of udder lesions with subclinical mastitis in dairy cows of Chattogram, Bangladesh. Advancements in Animal and Veterinary Sciences 10(2): 226-235.

8. Buckley CD, Pilling D, Lord JM, Akbar AN, Scheel-Toellner D, et al. (2001) Fibroblasts regulate the switch from acute resolving to chronic persistent inflammation. Trends in Immunology 22(4): 199-204.

9. Hogaboam CM, Steinhauser ML, Chensue SW, Kunkel SL (1998) Novel roles for chemokines and fibroblasts in interstitial fibrosis. Kidney International 54(6): 2152-2159.

10. Xu J, Mora A, Shim H, Stecenko A, Brigham KL, et al. (2007) Role of the SDF-1/CXCR4 axis in the pathogenesis of lung injury and fibrosis. American Journal of Respiratory Cell and Molecular Biology 37(3): 291-299.

11. Shah KA, Andrabi SA, Sumbul S (2010) A study on homeopathic treatment of teat fibrosis in bovines. Vetscan 5(1).

12. Makkar SS (2017) A study of chronic teat fibrosis in bovines treated with homeopathy. Allgemeine Homöopathische Zeitung 262(2): 2-76.

13. Karthick K (2020) Successful treatment of chronic fibrosed mastitis with treat fibrosis in cows by homeopathic remedies in: A review of 18 cases in field study. International Journal of Current Microbiology and Applied Sciences 9(8): 3194-3197.

14. Warken AC, Lopes LS, Bottari NB, Glombowsky P, Galli GM, et al. (2018) Mineral supplementation stimulates the immune system and antioxidant responses of dairy cows and reduces somatic cell counts in milk. Annals of the Brazilian Academy of Sciences 90(2): 1649-1658.

15. Frei A (2020) Metal complexes, an untapped source of antibiotic potential. Antibiotics 9(2): 90.