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EVALUATION OF HOMOEOPATHIC REMEDY FOR HAEMATOGALACTIA IN LACTATING DAIRY BUFFALOES

Muhammad Kashif[1,*], Amar Nasir[1], Asghar Hussain[2], Usman Waheed[3], Arbab Sikandar[4], Aziz ur Rahman[3] and Muhammad Bakhsh[1]

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ABSTRACT

The objective of the current study was to determine the comparative efficacies of homeopathic and allopathic therapeutic regimens to cure heamatogalactia in buffaloes. The study comprised 40 sub-clinically mastitis lactating buffaloes manifesting blood in the milk from one or two teats which were divided into two equal groups i.e. B_1 and B_2. Milk from the affected quarters identified subclinical mastitis of 1+ grade detected by Surf Field Mastitis Test (SFMT) and their cultural examination determined staphylococcal and Streptococcal bacterial infection. Hamamalis-Q and Echinatia-Q were administered orally 10 drops twice /day one hr. apart for 7 days to the animals of Group B_1 while allopathic drugs, i.e., Milfone-C 300 ml I/V, Inj. Adrenaline 1% sol. 5 ml I/V, formaline 5 ml orally and Inj. Penbiotic 5 gm were administered I/M to B2 Group animals daily for 7 days. Milk from the Group B_1 animals became normal in 3 to 5 days. On the 8th day, milk culture indicated the absence of microbes and SFMT became negative validating the wholesomeness of milk while it took 7 days in Group B_2 to recover only 11 animals with 9 animals remaining obstinate. Albeit all animals in both groups became negative on culture and SFMT basis on the 8th day, the problem persisted in a few animals of the Group B_2. It was concluded that homeopathically treated animals recovered 100% in 7 days while allopathic treated animals recovered 55% only till the 8th day, showing the superior efficacy of homeopathic therapeutic regimen as compared to allopathic therapy to cure haematogalactia in dairy buffaloes.

Keywords: *Bubalus bubalis*, buffaloes, haematogalactia, homeopathic remedy, allopathy, mastitis

[1]Department of Clinical Sciences, University of Veterinary and Animal Sciences, Lahore, Sub Campus, Jhang, Pakistan, *E-mail: muhammad.kashif@uvas.edu.pk

[2]Department of Animal Production, University of Veterinary and Animal Sciences, Lahore, Sub Campus, Jhang, Pakistan

[3]Department of Pathobiology, University of Veterinary and Animal Sciences, Lahore, Sub Campus, Jhang, Pakistan

[4]Department of Basic Sciences, Sub Campus-Jhang, University of Veterinary and Animal Sciences, Lahore, Pakistan

INTRODUCTION

Mastitis is a common global (Viguier *et al*., 2009) and costly disease (Kossaibati *et al*., 1998). It causes physical, chemical, bacteriological, and glandular changes in mammary glands and affects both the quality and quantity of milk (Sharif *et al*., 2007). Being unwholesome milk, it brings about several diseases among the consumers i.e. tuberculosis, sore throat, brucellosis, Staphylococcal enteritis, Leptospirosis, etc. (Yousaf *et al*., 2009). It appears in two forms, clinical and subclinical, the latter being 15 to 40 times more common than the clinical form (Ashfaq *et al*., 2015). In clinical form visual clinical signs such as inflammation of udder, pain, hotness of udder, presence of flakes and deterioration of the quality of milk appeared whereas in sublinical mastitis no visual sign of abnormality but screening tests used for detection of mastitis (Cha *et al*., 2011; Moroni *et al*., 2006). It is caused by a variety of reasons i.e. bacteria, mycoplasma, fungi, viruses, and trauma (Kossaibati *et al*., 1998). Of these, bacteria are at the top. Of bacteria, various species of staphylococci and streptococci are more common than those others (Mbindyo *et al*., 2020).

Several previous studies in Pakistan described that *Staphylococcus aureus* is the most common organism involved in causing mastitis in dairy animals (Viguier *et al*., 2009) and its infections are difficult to cure and eliminate from the infected animals (Jena *et al*., 2015). The poor cure rate of *Staphylococcus aureus* infection is due to poor penetration of antibiotics into areas of inflammation, improper treatment, intracellular protection of the organism and antimicrobial resistance (Farzana *et al*., 2004). It brings about huge economic loss by infecting the udder (Motaung *et al*., 2017). Sometimes vascular bed in the udder is damaged mechanically or under the influence of various bacteria or their toxins and milk become blood tinged making it unfit for human consumption (Radostits *et al*., 2006).

The buffalo is one of the most important milk producing species in the world (Sharif *et al*., 2007) and is justifiably the main stay of dairying in Pakistan and about 75% of the milk production is contributed by it (Niedziela *et al*., 2020). Alternative therapy is used for treatment of diseases and highly desirable in the treatment of mastitis. During the last two years, such 20 cases in buffaloes were recorded at outdoor clinic of College of Veterinary and Animal Sciences, Jhang. These animals were treated with both homeopathic and allopathic therapeutic agents to compare their efficacy clinically.

MATERIALS AND METHODS

A total of 40 dairy lactating buffaloes (calved 2 to 4 months earlier and in lactation 3 to 7) were brought to Veterinary teaching hospital CVAS, Jhang with the single complaint of having blood in milk from one or two quarters for several days. Blood used to appear in the latter half of milking. There was no obvious swelling anywhere on teat or quarter. Those animals were divided randomly into 2 equal groups i.e. B_1 and B_2 comprising 20 animals each. Clinical examination revealed painless quarters of normal consistency and teats had no obvious abnormality but there was blood in milk. The Surf Field Mastitis test (SFMT) was performed in the beginning to detect and assess the status of subclinical mastitis in milk from the corresponding teat or quarters (Hoque *et al*., 2015). Samples were collected in vials following the guidelines of National Mastitis Council (Kashif *et*

al., 2013).

Aseptic milk samples for culture examination were taken from the mastitis quarters following topical asepsis twice (in the beginning and at the end of milking) to isolate the etiological microbial agents. Immediately after collection, milk samples were placed on crushed ice and transported to Laboratory of Microbiology, Department of Pathobiology, College of Veterinary and Animal Sciences, Jhang, and stored at 4 to 5°C until use. These were streaked onto blood agar plates containing 5% sheep erythrocytes. Colony morphology and haemolytic patterns of the isolates were noted. Gram's staining technique was used to differentiate between the isolates (National Mastitis Council Inc. 1990). A bacteriological examination was carried out two times i.e. day 0 (before treatment), day 8 post-treatment.

Two homeopathic therapeutic agents, Hamamalis-Q (Masood Homoeopharma, Lahore) and Echinatia-Q (Masood Homoepharma, Lahore) were given orally twice a day at one hour apart by dribbling 10 drops each on a piece of leaf for a week-long period 7 days to the animals of Group B1. While allopathic treatment comprising Milfone-C (Star Labs Pvt. Ltd. Lahore, Pakistan) 300 ml i/v, Adreinaline 5 ml of 1% sol. i/v, formalin 3 ml orally and Inj. Penbiotic 5 gm (Nawan Labs. Pvt. Karachi, Pakistan) was administered i/m, daily for 7 days to each animal of Group B_2. The color of milk was monitored twice daily (at morning and evening milking) to assess the response of therapy.

Having become the milk appearing normal, milk was re-tested using this SFMT test to check evaluate the status of mastitis on 8th day post treatment. Aseptically collected milk samples from the animals of both Groups B_1 and B_2 Groups were taken exactly from the previously abnormal quarters (now thought to be normal) to confirm their health status by re-culturing and isolating any of the mastitis causing organisms. Thus, the efficacy of the therapeutic regimen used under field conditions to cure the problem of mastitis in animals was determined.

RESULTS

Both groups (B_1 and B_2) of buffaloes were subjected to homeopathic and allopathic treatments separately. Of Group B_1, 4 buffaloes had blood in milk from right rear teat only, 6 had from two (left rear and right front) teats while 7 had blood in milk from only one teat (right front) and 3 had also from 2 (left front and right rear) teats (Table 1). The degree of sub-clinical mastitis in the affected teats was 1+ one positive indicated by SFMT and their cultural examination detected and isolated *Staphylococci* and *Streptococci* spp. of bacteria. The homeopathic treatment protocol normalized the milk in 3 to 5 days but it was kept continued till 7th day (Table 1). On the 8th day, SFMT became negative and re-culturing of milk samples from the recovered quarters on sheep blood agar confirmed the absence of bacteria. It may be ascribed to the bactericidal, viricidal, antitoxaemic, blood purifying, and anti-septicemic characteristics of Echinatia-Q which is a matchless remedy in the homeopathic system of treatment.

In Group B2 of 20 buffaloes, 5 had blood-stained milk from 2 teats (left rear, right front) and 5 from one teat (right rear). On the other hand, 6 buffaloes had blood in milk from 2 teats (left front, right rear) and 4 were having from one teat (right front) (Table 2). Allopathic cocktail did not become successful in stopping haematogalactia in 9 animals (45%), but 11 buffaloes (55%) recovered completely in 7 days.

DISCUSSION

When different mastitogens begin to multiply in the udder, permeability of nearby blood vessels changes to bring more blood cells to that site in response to the release of pharmacologically active amines i.e. histamine and histamine-like substances. All this happens to repair the damaged tissue and subjugate the infection for normalizing the function of milk-producing organ (Song *et al*., 2020). Sometimes excessive damage to the wall of neighboring blood vessels by the causative microbes leads to the spilling of blood into milk making its reddish discoloration. At times this condition develops due to oozing of blood from varicosed lectiferous blood vessels (Mpatswenumugabo *et al*., 2017). Hamamalis-Q has a specific effect on the part of blood vessels that are lacking normal tonicity leading to regain normal structural status. In general, homeopathic medicines stimulate and potentiate the immune system of the animals' body increasing their inner strength and invigorating their overall health. Their use can be prophylactic (Borax 200 in Foot and Mouth disease of cattle) curative, palliative or supportive depending upon state and staging of disease.

Hamamelis virginiana Q acts particularly the on venous system and is curative in bleeding disorders and hemorrhages. It is also beneficial in open, painful wounds and overcoming weakness after blood loss. This homeopathic medicine can also prove to be of good effect as an analgesic. Echinacea angustifolia Q (common name purple cone flower) is used as an antiseptic, antiviral, and immune stimulant agent. It performs the function of blood purifier and is also administered as a cure against certain skin aliments including erysipelas and gangrene as it contains antioxidants such as flavonoids, cichoric acid, and rosmarinic acid. These antioxidants defend the body against oxidative stress associated with disease processes. In addition, it has been found useful in ameliorating immunodeficiency. It is effective in after-effects of snake bites. In addition to it. Ipecacuanha-30 is considered another medicine for haematogalactia. If it occurs in response to any injury to the udder or some quarter, then Arnica-30 is considered another matchless remedy. On the 8th day, SFMT became negative and re-culturing of milk samples from the recovered quarters on sheep blood agar confirmed the absence of bacteria. It may be ascribed to the bactericidal, viricidal, antitoxaemic, blood purifying, and anti-septicaemic characteristics of Echinatia-Q which is a matchless remedy in the homoeopathic system of treatment.

Allopathic cocktail (Group B_2) did not become successful in stopping haematogalactia in 9 animals (45%), but 11 buffaloes (55%) recovered completely in 7 days. These findings are partially in line with the results of (Ayaz, 1999) who tried such therapy in goats and buffaloes up to 20 days showing uncertain results. At the damaged site, Ca, Adrenaline remained unable to form the coagulum despite having the capability of enhanced platelet count and vasoconstrictive effect resulting in an inadequate recovery in the animals of this group. Per os administration of formalin and *Strepto penicilline* may be ascribed to culture negative testing of the milk from the affected quarters but this did not affect blood spilling into lactiferous ducts. It is quite clear from this study that Hamamalus virginica-Q and Echinatia-Q if be used 10 drops twice a day at an hr. apart per os for a week, is an excellent remedy for blood in milk in buffaloes affected with sub-clinical mastitis of one positive (1+) status.

Table 1. Different facets elaborating the Homoeapathic treatment (Hamamalus-Q and Echinatia-Q) protocol in buffaloes (B_1) with Haemagalactias.

No. of buffaloes	Duration of affliction (Days)	Affected teats	No. of teats affected	Total teats affected	Treat-ment duration (Days)	Recovery duration (Days)	SFMT (Day 0)	SFMT (Day 8th)	Culture (Day 0)	Culture (Day 8th)
4	4	RR	1	4	7	3	+ ve	- ve	*Staph. Strep.*	N
6	3	LR, RF	2	12	7	4	+ ve	- ve	*Staph. Strep.*	N
7	5	RF	1	7	7	5	+ ve	- ve	*Staph. Strep.*	N
3	6	LF, RR	2	6	7	4	+ ve	- ve	*Staph. Strep.*	N

RR = Right Rear; RF = Right Front; LR = Left Rear; LF = Left Front; SFMT = Surf Field Mastitis Test; N = Negative for bacterial growth; *Staph. = Staphylococci; Strep. = Streptococci.*

Table 2. Different facets of study elaborating Allopathic treatment (Milfone-C, Inj. Adrenaline, Formaline, Inj. Penbiotic 5 gm) protocol in buffaloes (B_2) with Haemagalactias.

Buffalo number (n)	Illness period (Days)	Affected teats	Affected teats No.	Total teats affected	Recov. (Days)	Not recov.	SFMT (Day 0)	SFMT (Day 8th)		Culture (Day 0)		Culture (Day 8th)	
								-ve	+ve	-ve	+ve	-ve	+ve
5	3	RR	1	9	3	2	+ve	3	2	3	2	3	2
5	2	LR, RF	2	10	3	2	+ve	3	2	3	2	3	2
6	5	LF, RR	1	6	3	3	+ve	3	3	3	3	3	3
4	4	RF, RR	2	8	2	2	+ve	2	2	2	2	2	2

RR = Right Rear; RF = Right Front; LR = Left Rear; LF = Left Front; SFMT = Surf Field Mastitis Test; N = Negative for bacterial growth; *Staph. = Staphylococci; Strep. = Streptococci.*

CONCLUSION

In a nutshell, it was concluded that the homeopathic treatment proved 100% successful in getting the problem resolved in 7 days while the allopathic treatment showed only 55% success in 7 days in the current study. In addition, Homoeopathic treatment was cheaper and was easy to administer while allopathic treatment was expensive, difficult to administer, and was 45% less effective.

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