

*Original Research***Efficacy of Polyherbal Drug against Tympany in Bovine****A. M. Syed^{1*}, V. D. Aher², P. M. Mane¹ and G. R. Gangane³**¹Hospital Registrar, COVAS, Parbhani, Maharashtra, INDIA²Professor, COVAS, Parbhani, Maharashtra, INDIA³Associate Professor, COVAS, Parbhani, Maharashtra, INDIA***Corresponding author:** mujeebvet@rediffmail.com

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Abstract

The present study aimed to evaluate therapeutic efficacy of polyherbal drug liquid Bloatosafe for the treatment of primary tympany in bovine. Total twenty (n=20) clinical cases were presented with history of loss of appetite, dullness, depression, absence of ruminal contraction, suspended rumination and enlargement of left paralumbar fossa were treated with Liq. Bloatosafe @ 50 ml orally twice daily till complete cure. Liq. Bloatosafe, a polyherbal antibloat drug manufactured by M/S Rakesh Pharmaceuticals, Gandhinagar, Gujarat, contains 15 different herbs. In present investigation, non significant change in temperature and significant changes in heart rate and respiratory rate in treated cases of cattle and buffaloes was recorded. Non significant improvement in rumen fluid pH and significant changes in protozoal density and protozoal motility were recorded. In present investigation, non-significant changes in haemoglobin, packed cell volume and significant changes in total leukocyte count before and after treatment of affected cattle and buffaloes were recorded. Out of twenty animals treated, 19 were completely recovered and one animal not recovered and died during treatment might be due to severity of condition. The results indicate Liq. Bloatosafe could be effective in amelioration of primary tympany in ruminants, as evident through improvement in tympany, ruminal motility and normal functioning of rumen. The treatment with Liq. Bloatosafe proved to be effective, safe and did not show any untoward effect at recommended therapeutic doses as co-therapy with sodium bicarbonate, B complex injections, rumenototics, antibiotics and supportive therapy in treatment of primary tympany.

Key words: Bovine, Herbal Treatment, Liq. Bloatosafe, Primary Tympany

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Introduction

Tympany is very commonly occurring in ruminants (cattle and buffaloes) which results either due to excessive production of gas or physical obstruction of process of eructation of gas. It is condition where rumen and reticulum are filled with gasses of fermentation due to excessive intake of easily fermentable

foods or sudden change in feed. Tympany may be gaseous and frothy in nature depending upon free gas or mixed with ingesta. It may be peracute, acute and subacute disease characterized by inappetance to anorexia, dullness, depression, enlargement of left paralumbar fossa, hypomotility or atony of rumen, constipation or diarrhea, acidic pH of rumen fluid, champing of mouth, grinding of teeth, salivation, increase in heart rate and respiratory rate, haemoconcentration and cyanosis of mucous membrane (Constable *et al.*, 2017). It may cause death of animal depending upon severity of condition. The occurrence of various diseases in dairy animals adversely affects the production and thus leads to financial losses. Hypogalactia and agalactia are the common conditions in dairy animals suffering from tympany and indigestion, which can be cured quickly by adopting radical treatment. Treatment of animals suffering from tympany and indigestion in ruminants by conventional drugs is expensive whereas by use of herbal drugs, which are cheap, safe and without any side effect, the problem can be solved (Rajiv Walia *et al.*, 2011; Arora *et al.*, 1978; Nooruddin, 1983; Singh *et al.*, 1989). In this experiment an attempt was made to assess the efficacy of some herbal drugs against primary tympany in large domestic ruminants.

Hence, present study was undertaken to evaluate therapeutic efficacy of polyherbal drug viz. Liquid Bloatosafe for the treatment of primary tympany in bovine.

Materials and Methods

Twenty clinical cases of bovine presented to TVCC, COVAS, Parbhani during October 2016 to March 2017 with signs suggestive of tympany were selected for the present therapeutic trial. History regarding tympany, temperature, respiratory rate, heart rate, ruminal motility, treatment given, response to treatment and relapse of the condition, if any was collected. Blood samples were collected in sterile citrated vials by jugular venepuncture from 20 tympany affected bovine before and after treatment for the estimation of haematological values. Blood samples were analysed for haemoglobin (Hb), packed cell volume (PCV) and total leucocyte count (TLC) by using automated haemoanalyzer. Rumen fluid collected before and after treatment was analyzed for physical examination (pH, colour and consistency) and microscopic examination (density and motility). Twenty tympany affected animals were treated with Liq. Bloatosafe @ 50 ml orally twice daily till complete cure. Liq. Bloatosafe, a polyherbal antibloat drug manufactured by M/S Rakesh Pharmaceuticals, Gandhinagar, Gujarat, contains 15 different herbs. Therapeutic efficacy of the polyherbal drug (Liq. Bloatosafe) was determined on the basis of relief from tympany and normal functioning of rumen. The data was analysed by employing “student t test” as described by Snedecor and Cochran (1994).

Results and Discussion

A total twenty (n=20) clinical cases of tympany in bovine were recorded during October 2016 to March 2017 at Teaching Veterinary Clinical Complex, COVAS, Parbhani (Maharashtra). Detail observations on tympany, temperature, heart rate, respiratory rate, ruminal motility, diagnosis and polyherbal treatment in bovine suffering from tympany were recorded.



Photo 1: Photograph showing severe tympany in a buffalo

Clinical Parameters

All the clinical cases were presented with history of loss of appetite, dullness, depression, absence of ruminal contraction, suspended rumination and enlargement of left paralumbar fossa. In present investigation, non significant change in temperature (101.63 ± 0.31 vs 101.04 ± 0.19 °F) and significant changes in heart rate (61.15 ± 1.93 vs 57.4 ± 0.82) was observed. The respiratory rate in treated cases was reduced (23.65 ± 0.78 vs 21.75 ± 0.51) before and after treatment of affected cattle and buffaloes. Earlier worker Ramasamy *et al.* (2015) reported significant reduction in rectal temperature in 94% ruminants following oral administration of tyrel (content: Pudina and Hingu). Ramesh and Akber, (2006) reported slightly higher respiration and pulse rate than normal in cases of tympanitis.

Ruminal Motility Score

Prior to treatment about 90% of ruminant animals (n = 18) had hypo motility and 10% (n = 02) had ruminal stasis (No motility). Prior to treatment the rumen motility score (Mean $\pm$ S.E.) observed in ruminants was 2.05 ± 0.24 however, there was a statistically significant improvement in post-treatment ruminal motility 3.15 ± 0.15 ($p < 0.01$) in Liq. Bloatosafe treated animals. Rumen motility is restored to normal upon treatment with Liq. Bloatosafe (Table 1). Ramasamy *et al.* (2015) reported significant

improvement in ruminal motility in 88% animals treated with tyrel and rumen motility restored to normal upon treatment with tyrel.

Examination of Rumen Fluid

Rumen fluid collected before and after treatment was analyzed for physical examination (pH, colour and consistency) and microscopic examination (density and motility). These parameters showed gradual improvement towards normalcy after treatment in all affected animals. Average rumen fluid pH in affected animals before treatment was non significant 6.9 ± 0.23 as compared to post treatment rumen fluid pH 7.05 ± 0.08 . The significant changes were recorded in protozoal density before treatment 19.1 ± 1.68 as compare to post treatment value 25.65 ± 1.45 and significant improvement in protozoal motility were recorded before treatment 2.2 ± 0.19 as compared to post treatment value 3.1 ± 0.16 . Kasaralika *et al.* (2014), Steen (2001) and Dirksen (1969) stated that, the protozoal motility decreases whenever there is a reduction in rumen pH. The physical qualities of rumen fluid recorded before treatment were greenish, brown, gray colour with watery consistency which were improved on treatment with polyherbal drug to greenish colour and viscous consistency after treatment (Asrat *et al.*, 2015).

Treatment

Twenty tympany affected animals were treated with Liq. Bloatosafe @ 50 ml orally twice daily till complete cure. Liq. Bloatosafe, a polyherbal antibloat, anti-tympany and carminative drug manufactured by Rakesh Pharmaceuticals, Gandhinagar, Gujarat, contains 15 different herbs as *Ajwar*, *Punarnava*, *Bibhitak*, *Bhumivali*, *Haritaki*, *Mundika*, *Amalaki*, *Sathava*, *Nagar*, *Amrita*, *Ushan*, *Tulsi*, *Chapla*, *Pudina* and *Haridra*. These individual constituent herbs are scientifically well known to possess effective medicinal properties like appetizer, restorative, carminative, stomachic's and tonic activity. The results of the present study may be attributed to the synergistic effect of the constituent herbs. Therapeutic efficacy of the polyherbal drugs (Liq. Bloatosafe) was determined on the basis of relief from tympany and normal functioning of rumen.

Out of twenty animals treated, 19 were completely recovered indicating 95.00 per cent efficacy. One animal could not show desired effect and died during treatment and it might be due to severity of condition. This indicates that the Liq. Bloatosafe could improve the ruminal function probably due to presence of combination of potent herbs which exert carminative, rumenotoric and stomachic action. Earlier, Rajiv Walia *et al.* (2011) and Ramesh and Akber (2006) reported that the poly herbal formulation are very effective in curing more than 95% cases of primary indigestion and helpful in early restoration of milk production. The recovery period varied between 02 to 04 days with an average of 2.9 days. Out of 20 animals treated, 07 recovered by 2 days, 12 by 3-4 days. The mild and early cases responded quickly

to the treatment whereas, moderate cases responded slowly. There was no any relapse of tympany in any of the cases after treatment. Rajiv Walia *et al.* (2011) reported that cases of simple indigestion recovered within 3-5 days. Ramasamy *et al.* (2015) inferred from the study that the ruminant animals were recovered completely from bloat on an average of seventeen hours following administration of 2 doses of Tyrel. Haematological observations recorded in cattle and buffaloes affected with tympanitis before and after treatment are studied and recorded in Table 1.

Table 1: Mean $\pm$ SE values of clinical parameters, rumen fluid and haematology in cattle and buffaloes affected with tympany and treated with Liq. Bloatosafe.

S. No.	Parameter	Before Treatment	After Treatment	't' Value
1	Temperature ($^{\circ}$ F)	101.63 $\pm$ 0.31	101.04 $\pm$ 0.19	1.59 ^{NS}
2	Heart rate (beats/min)	61.15 $\pm$ 1.93	57.4 $\pm$ 0.82	1.79 [*]
3	Respiratory rate (per minute)	23.65 $\pm$ 0.78	21.75 $\pm$ 0.51	2.03 [*]
4	Ruminal motility	2.05 $\pm$ 0.24	3.15 $\pm$ 0.15	3.95 ^{**}
5	PH of Rumen fluid	6.9 $\pm$ 0.23	7.05 $\pm$ 0.08	0.61 ^{NS}
6	Protozoal Density	19.1 $\pm$ 1.68	25.65 $\pm$ 1.45	2.95 ^{**}
7	Protozoal Motility	2.2 $\pm$ 0.19	3.1 $\pm$ 0.16	3.66 ^{**}
8	HB (gm%)	10.52 $\pm$ 0.36	10.37 $\pm$ 0.24	0.35 ^{NS}
9	PCV (%)	30.49 $\pm$ 1.25	30.2 $\pm$ 0.43	0.22 ^{NS}
10	WBC (TLC) ($\times 10^3/\mu$ l)	11.83 $\pm$ 0.89	9.92 $\pm$ 0.31	2.04 [*]

NS – Non significant, *Significant ($P < 0.05$), **highly significant ($P < 0.01$)



Photo 2: Buffalo recovered from tympany after treatment with Liq. Bloatosafe



Photo 3: Photograph showing mild tympany in a buffalo



Photo 4: Severe distention of rumen of buffalo suffering from tympany



Photo 5: Drenching of Liq. Bloatosafe to buffalo suffering with tympany



Photo 6: RK cow having mild tympany



Photo 7: Khillar bullock having tympany

In present investigation, non-significant changes in haemoglobin (10.52 ± 0.36 vs 10.37 ± 0.24 g/dl), packed cell volume (30.49 ± 1.25 vs 30.2 ± 0.43 %) and significant changes in total leukocyte count (11.83 ± 0.89 vs $9.92 \pm 0.31 \times 10^3/\mu\text{l}$) before and after treatment of affected cattle and buffaloes were noticed (Kasaralika *et al.*, 2014).

Conclusion

The treatment with Liq. Bloatosafe proved to be effective, safe and did not show any untoward effect at recommended therapeutic doses. The results indicated that Liq. Bloatosafe could be effective in amelioration of primary tympany in ruminants, which is evident through improvement in tympany, ruminal motility and normal functioning of rumen. Based on the results it could be concluded that Liq. Bloatosafe may be recommended as a treatment for primary tympany as a co-therapy with sodium bicarbonate, B complex injections, rumenototics, antibiotics and supportive therapy.

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