



Research Article

Efficacy of a Polyherbal Drug against Indigestion in BovineAM Syed^{1*}, VD Aher², PM Mane¹ and GR Gangane³¹Hospital Registrar, COVAS, Parbhani, M.S. (India)²Professor, COVAS, Parbhani, M.S. (India)³Associate Professor, COVAS, Parbhani, M.S. (India)

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ABSTRACT

The study aims to evaluate efficacy of polyherbal drug Powder Rumec ES for the treatment of simple indigestion in bovine. Twenty (n=20) clinical cases presented with history of loss of appetite, dullness, depression, absence of ruminal contraction and suspended rumination were treated with powder Rumec ES @ 15gm orally twice daily till complete cure. Powder Rumec ES, is a polyherbal stomachic, digestive and tonic drug manufactured by Rakesh Pharmaceuticals, Gandhinagar, Gujarat, containing 24 different herbs. The significant change in temperature and non-significant changes in heart rate and respiratory rate after treatment of affected cattle and buffaloes were noticed. After treatment of affected cattle and buffaloes no significant changes in rumen fluid pH and significant changes in protozoal density and protozoal motility were recorded. In present investigation, non-significant changes in hemoglobin, packed cell volume and total leukocyte count before and after treatment of affected cattle and buffaloes were noticed. Out of twenty animals treated, eighteen were completely recovered. One animal recovered partial and one animal died during treatment might be due to complete anorexia and severity of condition. The results indicated that Powder Rumec ES could be effective in amelioration of simple indigestion in ruminants as a co-therapy with sodium bicarbonate, B complex injections, antibiotics and supportive therapy.

Key words: Indigestion, Powder Rumec ES, Bovine

INTRODUCTION

Rumen ecology plays vital role in the digestion, absorption and assimilation of ingesta in ruminants. The physiology of digestion of ruminants is unique among domestic animals in that bacterial enzymes play an integral part in absorption, assimilation and metabolism. Cellulose and related compounds found in hays and roughages consumed by ruminants is dependent upon enzymes elaborated by micro-organisms living within the digestive tract. Microbial fermentation is the most important facet of ruminant digestion. The rumen microbial population has the first opportunity to digest any feed consumed by the ruminant and anything that affects the rumen ecosystem will ultimately affect what and how nutrients are available to the animal for productive purposes (Kasarialikar *et al.*, 2014).

Abrupt change in the feed is the most common reason for indigestion in ruminants. Other factors such as feeding spoiled, moulded feed, use of antibiotics, sudden changes in climatic conditions also cause

indigestion. Due to abrupt changes in feed, the ruminal microflora is unable to adapt resulting in indigestion. When the rumen becomes dysfunctional, feed digestion is impaired and animal become susceptible to a range of metabolic diseases and digestive disorders such as simple indigestion, acidic and alkaline indigestion which are characterized by poor appetite and change in pH, decreased rumen motility and decreased protozoal counts. Almost any dietary factor can alter the intraruminal environment can cause impairment of the digestive process. In order for animals to achieve their genetic potential for milk production and remain healthy, it is critical that the rumen environment be kept in a "healthy" state. Keeping the rumen healthy means that fiber will be digested at a maximal rate and feed intake will be maximized. The occurrence of various diseases in dairy animals adversely affects the production and thus this leads to financial losses. Hypogalactia and agalactia are the common conditions in dairy animals suffering from indigestion, which can be cured quickly by adopting radical treatment.

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Treatment of animals suffering from 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 (Kasralikar *et al.*, 2014, Rajiv Walia *et al.*, 2011; Singh *et al.*, 1989, Nooruddin, 1983, Arora *et al.*, 1978). This study was aimed to assess the efficacy of polyherbal drug Powd. Rumec ES against simple indigestion in large domestic ruminants.

MATERIALS AND METHODS

Twenty clinical cases of bovine presented to TVCC, COVAS, Parbhani during October 2016 to March 2017 with signs suggestive of simple indigestion were selected for the present therapeutic trial.

History regarding indigestion, temperature, respiratory rate, heart rate, ruminal motility, treatment regimen, response to treatment and relapse of the condition, if any were recorded. Blood samples were collected in sterile citrated vials by jugular venepuncture from affected animals before and after treatment to estimate hematological values. Blood samples were analyzed for hemoglobin (Hb), packed cell volume (PCV) and total leucocyte count (TLC) by using automated hemoanalyzer. Rumen fluid collected before and after treatment was analyzed for physical (pH, colour and consistency) and microscopic examination (density and motility). Twenty cases of bovine showing indigestion were treated with powder Rumec ES (15gm orally twice daily) until complete cure was achieved.

Powder Rumec ES, is a polyherbal stomachic, digestive and tonic drug manufactured by Rakesh Pharmaceuticals, Gandhinagar, Gujarat, containing 24 different herbs. These individual constituent herbs are scientifically known to possess appetizer, restorative, carminative, stomachics 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 (Powder Rumec ES) was determined on the basis of relief from simple indigestion and normal functioning of rumen. The data generated during present study was analysed by employing "student t test" as described by Snedecor and Cochran (1994).

RESULTS AND DISCUSSION

The detail of observations recorded on indigestion, temperature, respiratory rate, heart rate, ruminal motility, diagnosis and polyherbal treatment in bovine suffering from indigestion are as follows.

Clinical parameters

All the clinical cases presented with history of loss of appetite, dullness, depression, absence of ruminal contraction and suspended rumination was used for present trial. In present investigation, significant change in temperature (101.76±0.23 vs 101.185±0.24°F) and non-significant changes in heart rate (64.95±3.37 vs 67.45±2.08) and respiratory rate (21.85±0.99 vs 20.3±0.73) before and after treatment of affected cattle and buffaloes were noticed (Table 1). All the animals had normal temperature, heart rate and respiration on the day of presentation and thereafter during the treatment period (Kasralikar *et al.*, 2014, Ramesh and Akbar, 2006).

Ruminal motility score

Prior to treatment about 70% of ruminant animals (n=14) had hypo motility and 30% (n=6) had ruminal stasis (no motility). Prior to treatment the rumen motility score (mean±std.e.) observed in ruminants was 1.05±0.18 while statistically significant improvement in post-treatment ruminal motility (P<0.01) observed 2±0.18 in Powder Rumec ES treated animals. Rumen motility is restored to normal in animals treated with Powder Rumec ES (Table 1). Mohan *et al.* (2015) reported significant increase in ruminal motility in animal affected with indigestion and treated with poly herbal formulation.

Table 1: Mean±SE values of clinical parameters, rumen fluid and hematology in cattle and buffaloes affected with simple indigestion and treated with powder Rumec ES.

Parameter	Before treatment	After treatment	't' Value
Temperature (°F)	101.76±0.23	101.185±0.24	1.73*
Heart rate (beats/min)	64.95±3.37	67.45±2.08	0.63 ^{NS}
Respiratory rate (per minute)	21.85±0.99	20.3±0.73	1.26 ^{NS}
Ruminal motility	1.05±0.18	2±0.18	3.71**
PH of Rumen fluid	7.51±0.15	7.19±0.07	1.89 ^{NS}
Protozoal Density	10.55±1.42	14.2±1.26	1.92*
Protozoal Motility	1.35±0.17	2±0.16	2.79**
HB (gm%)	10.1±0.32	10.38±0.31	0.62 ^{NS}
PCV (%)	29.38±1.14	30.82±1.03	0.93 ^{NS}
WBC (TLC) (x10 ³ /μl)	10.51±0.58	9.87±0.53	0.63 ^{NS}

NS-Non significant, *Significant (P<0.05); **Highly significant (P<0.01).

Examination of rumen fluid

Rumen fluid physical and microscopic examination parameters showed gradual improvement towards normalcy after treatment in all affected animals. Average rumen fluid pH in affected animals before treatment was non-significant 7.51±0.15 as compared to post treatment rumen fluid pH 7.19±0.07. The significant changes were recorded in protozoal density before and after treatment (10.55±1.42 vs 14.2±1.26). The significant improvement in protozoal motility was recorded after treatment (2±0.16) as compare to value before treatment (1.35±0.17). Earliar, Garry (2002) stated that in simple indigestion, pH changes were mild and tend towards acidosis or alkalosis. Kasralikar *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 color and watery consistency which were improved on treatment with polyherbal drug to greenish color and viscous consistency after treatment (Kasralikar *et al.*, 2014).

Treatment

Powder Rumec ES, a polyherbal digestive tonic and stomachic drug manufactured by Rakesh Pharmaceuticals, Gandhinagar, Gujarat, contains 24 different herbs as *Raktapushpak*, *Haridra*, *Chapla*, *Ruchak*, *Kiratikta*, *Sathava*, *Agnik*, *Shriphal*, *Chatra*, *Bibhitak*, *Haritaki*, *Tiktak*, *Amalaki*, *Aranyajirar*, *Mayuarak*, *Rason*, *Guduchi*, *Sulabha*, *Methica*, *Vidang*, *Samyak*, *Gundra*, *Ramath* and *Katubhadra*.

Out of twenty animals treated, eighteen were completely recovered (90%). One animal recovered partial while other one animal died during treatment, which might be due to complete anorexia and severity of condition. This indicated that the Powder Rumece ES could improve the ruminal function probably due to presence of combination of potent herbs, which exert rumenotonic and stomachic action. Earlier, Rajiv Walia *et al.* (2011) and Ramesh and Akbar, (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 1 to 6 days with an average of 2.6 days. Out of 20 animals treated, 17 recovered within first 3 days, 2 by 4-6 days. The mild and early cases responded quickly to the treatment whereas, moderate cases responded slowly. There was no any relapse of indigestion in either of case treated in present trial. Rajiv Walia *et al.* (2011) reported that cases of simple indigestion recovered within 3-5 days.

In present investigation, non-significant changes in hemoglobin (10.1 ± 0.32 vs 10.38 ± 0.31 g/dl), packed cell volume (29.38 ± 1.14 vs 30.82 ± 1.03 %) and total leukocyte count (10.51 ± 0.58 vs $9.87 \pm 0.53 \times 10^3/\mu\text{l}$) were noted before and after treatment in cattle and buffaloes affected with indigestion were noticed (Table 1). Kasaralika *et al.*, 2014 reported non-significant difference ($P > 0.05$) in hemoglobin and packed cell volume values before and after treatment.

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

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