



**THERAPEUTIC EFFICACY EVALUATION OF VITADHAN AS A COTHERAPY IN  
CLINICAL CASES OF HYPOGALACTIA, ANOREXIA, CACHEXIA AND SKIN  
AFFECTIONS: A FIELD STUDY**

**Rajiv Walia<sup>1</sup>, K. Ravikanth<sup>2</sup>, Adarsh<sup>2</sup> and Ankush Reothia<sup>\*</sup>**

<sup>1</sup>Senior Veterinary Officer, Govt. Veterinary Hospital, Baddi, Himachal Pradesh.

<sup>2</sup>Research & Development Division, Ayurved Limited, Baddi, India.

**\*Author for Correspondence: Dr. Ankush Reothia**

Research Associate, Research & Development Division, Ayurved Limited, Baddi, India. Mail ID: [clinical01@ayurved.in](mailto:clinical01@ayurved.in).

Article Received on 23/09/2015

Article Revised on 15/10/09/2015

Article Accepted on 01/11/2015

**ABSTRACT**

Therapeutic efficacy of Vitadhan, a liquid vitamin supplement (M/s Dabur Ayurved Ltd. India) against various disorders in cattle and buffalo was evaluated. 26 cases of cattle and buffalo were diagnosed for various disorders on the basis of history and clinical symptoms. Out of 26 cases, 6 cases were diagnosed for hypogalactia, 10 for skin infections, 4 for cachexia and 6 for anorexia. All the cases were treated with Vitadhan, at the rate of 10 ml once in a day for 10 days as a supportive therapy along with conventional therapy. Clinical signs were recorded so as to assess the time required for complete recovery. On the basis of observations, it was concluded that Vitadhan is a efficacious as a supportive therapy in treatment of hypogalactia, anorexia, skin affections and cachexia in cattle and buffalo. Vitadhan supplementation improved the feed intake and body score of the animals and led to early and faster recovery.

**KEYWORDS:** Hypogalactia, cattle, anorexia, cachexia.

**INTRODUCTION**

Nutrition is an important part of disease management, even though few disorders can be cured solely with diet. The interaction between illness, health, and nutritional status is multifactorial and complex. Vitamins are defined as a group of complex organic compounds present in nominal amounts in natural foodstuffs that are essential to normal metabolism and lack of which in the diet causes deficiency diseases.<sup>[1]</sup> M Either the vitamin must be in the diet (dietary essential) or be synthesized by microorganisms in the digestive system and absorbed by the host animal. Deficiency of vitamin B<sub>12</sub> in diet can cause poor appetite and growth, muscular weakness, demyelination of peripheral nerves, and poor general condition.<sup>[2]</sup> As cobalt is required for biosynthesis of vitamin B<sub>12</sub>, lack of cobalt may cause deficiency of the vitamin B<sub>12</sub> in adult ruminants. Clinical signs of vitamin B<sub>12</sub> deficiency include weight loss, suppressed appetite, decreased feed efficiency, anemia, diarrhoea and rough coats. Scabies causes significant increase in lipid peroxidation.<sup>[3]</sup> Administration of vitamin E and selenium in addition to standard therapy can alleviate lipid peroxidation and thus hasten the clinical recovery.<sup>[3]</sup> Vitamin E and Se also increase milk yield in cows.<sup>[4, 5]</sup> In rations with sufficient calcium, adequate vitamin D promotes positive body balance, but natural sources may provide insufficient vitamin D in many high-energy, low-roughage rations.<sup>[6]</sup> Vitamin D<sub>3</sub> in cattle helps in

regulating calcium homeostasis associated with the intense calcium demands linked to the onset of lactation. The well-known endocrine functions of vitamin D<sub>3</sub> are to stimulate calcium uptake from the intestines, bones, and kidneys.<sup>[7]</sup> The present study was undertaken to study the efficacy of Vitadhan, a liquid vitamin supplement (M/S Ayurved Limited, India) as a supportive therapy in treatment of hypogalactia, skin affections, cachexia and anorexia.

**MATERIALS AND METHODS**

The present study was undertaken at Govt. Veterinary Hospital, Una, Himachal Pradesh, India. A total of 26 cases of both cattle and buffalo of the age 2 to 5 years suffering from various disorders were treated with vitamin supplement (Vidadhan) at the rate of 10 ml once in a day for 10 days as a supportive therapy. The diagnosis was made on the basis of history of disease and clinical symptoms. Out of 26 cases, 6 cases were diagnosed for hypogalactia, 10 for skin infections, 4 for cachexia and 6 for anorexia. The animals suffering from hypogalactia and anorexia were treated with combination of liver tonic, tonophosphan & Vitadhan. The less severe cases of cachexia were treated with anthelmintics formulation and as a cotherapy Vitadhan was supplemented and severe cases were treated with combination of liver tonic, mineral supplement, anthelmintic & Vitadhan as supportive therapy. The

results were evaluated on the basis of number of days for which co-therapy with Vitadhan was given, number of days for which treatment was given and number of days required for complete recovery.

## RESULTS AND DISCUSSION

### Hypogalactia

Occurrence of various diseases in dairy animals adversely affects the production and thus leads to financial losses. Out of 6 cases presented with the history of decline in milk output 4 animals exhibited recovery by restoration in milk yield within 5-7 days of treatment. In most of the treated cases there was a remarkable recovery with increase in milk production upto 1.5 to 2 liters in a day. The increase in milk production may be due to the supplementation of Vitadhan along with liver tonic and tonophosphan. Vitamin A is important in maintaining epithelial tissue health and play a vital role in mucosal surface integrity and stability.<sup>[8]</sup> Limited data show that vitamin A supplementation of dairy cows may improve mammary gland host defense (i.e., immune function) and may have some positive effects on mammary gland health. Dairy cows receiving vitamin/trace mineral supplements. have tendency for increase in milk production.<sup>[9, 10, 11]</sup>

### Scabies

Scabies is a chronic contagious dermatitis of domestic animals and is characterized by encrustation, denudation and itching of the skin. Infection in animals may lead to substantial economic losses caused by depression in growth and feed conversion rates.<sup>[12]</sup> Out of 10 cases suffering from skin affections 8 recovered completely by 7<sup>th</sup> day and 2 severe cases exhibited delayed recovery by 15<sup>th</sup> day of treatment. Significantly low levels of vitamin A were found in dogs with sarcoptic.<sup>[13]</sup> Low levels of vitamin A may be the result of the regulatory role of zinc on vitamin A absorption<sup>[14, 15]</sup> and transport.<sup>[16]</sup> Administration of vitamin E in addition to standard therapy can alleviate lipid peroxidation and thus hasten the clinical recovery from scabies.<sup>[3]</sup>

### Anorexia

In ruminants anorexia, tympany and indigestions are commonly encountered and are characterized by poor appetite, change in pH, decreased ruminal motility and reduced protozoal counts.<sup>[17]</sup> Total 6 cases of anorexia were treated with combination of liver tonic, tonophosphan & vitamin supplement (Vidadhan). Normal appetite of animals was restored after 2<sup>nd</sup> day Vitadhan supplementation in anorectic cases. This indicates that Vitadhan supplementation can improve the feed intake probably due to presence of Vitamin E which has antioxidant property<sup>[18]</sup> and vitamin B<sub>12</sub> which acts as cofactor for enzyme Methylmalonyl-CoA mutase<sup>[19]</sup> which is vitally important to the energy metabolism of both the rumen microbes and the host ruminant animal.

### Cachexia

Cachexia causes weight loss and increased mortality.<sup>[20]</sup> The weight loss that occurs in cachexia is unlike that seen in a healthy animal that loses weight.<sup>[21, 22]</sup> Low serum levels of Vitamin D<sub>3</sub> have been related to proximal muscle weakness, gait disturbance, paresthesia, and discomfort within the muscles.<sup>[23]</sup> Total 4 cases of cachexia were presented in veterinary clinics. An overall improvement in body condition of the diseased animals was evident. The body scoring of animals after treatment was significantly better than before treatment. All the 4 treated animals recovered on basis of physical examination of animals. The improvement in body condition may be due to Vitamin D<sub>3</sub> has been reported to regulate functional effects such as contraction and remodeling in smooth muscle cells.<sup>[24, 25, 26]</sup>

## CONCLUSION

The supplementation of Vitadhan in animals suffering from anorexia cachexia hypogalactia and skin affection has led to improvement in condition. An early and faster recovery was attained with Vitadhan, supplemented as co-therapy.

## REFERENCES

1. Hamed AminiPour. Role Of Cyanocobalamin In Nutrition Ruminant: A Review. Report and Opinion, 2014; 6(10): 76-81.
2. Lassiter CA, Ward GM, Huffman CF, Duncan CW, Webster HD. Crystalline vitamin B<sub>12</sub> requirement of the young dairy calf. J. Dairy Sci, 1953; 36: 997.
3. Behera SK, Dimri U, Singh SK, Mohanta RK. The curative and antioxidative efficiency of ivermectin and ivermectin + vitamin E-selenium treatment on canine Sarcptes scabiei infestation. Vet Res Commun, 2011; 35(4): 237-44.
4. Lacetera N, Bernabucci U, Ronchi B, Nardone A. Effects of selenium and vitamin E administration during a late stage of pregnancy on colostrum and milk production in dairy cows, and on passive immunity and growth of their offspring. American Journal of Veterinary Research, 1996; 57(12): 1776–1780.
5. Moeini MM, Karami H, Mikaeili E. Effect of selenium and vitamin E supplementation during the late pregnancy on reproductive indices and milk production in heifers. Animal Reproduction Science, 2009; 114(1–3): 109–114.
6. Ribadu AY, Dobson H, Ward WR. Ultrasound and progesterone monitoring of ovarian follicular cysts in cows treated with GnRH. Br Vet J., 1994; 150(5): 489-97.
7. Horst RL, Goff JP, Reinhardt TA. Adapting to the transition between gestation and lactation: Differences between rat, human and dairy cow. J. Mammary Gland Biol. Neoplasia, 2005; 10: 141–156.
8. Sordillo LM, Shafer-Weaver K, DeRosa D. Immunobiology of the mammary gland. Journal of Dairy Science, 1997; 80: 1851-1865.

9. Michal JJ, Heirman LR, Wong TS, Chew BP, Frigg M, Volker L. Modulatory effects of dietary  $\beta$ -carotene on blood and mammary leukocyte function in periparturient dairy cows. *J. Dairy Sci.*, 1994; 77: 1408-1421.
10. Kincaid RL, Socha MT. Inorganic versus complexed trace mineral supplements on performance of dairy cows. *Prof. Anim. Sci.*, 2004; 20: 66-73.
11. Siciliano-Jones JL, Socha MT, Tomlinson DJ, M.DeFrain J. Effect of trace mineral source on lactation performance, claw integrity, and fertility of dairy cattle. *J. Dairy Sci.*, 2008; 91: 1985-1995.
12. Kuhn C, Lucius R, Matthes HF, Meusel G, Reich B, Kalinna BH. Characterisation of recombinant immunoreactive antigens of the scab mite *Sarcoptes scabiei*. *Vet parasitol*, 2008; 153(3-4): 329-37.
13. Beigh SA, Soodan JS, Singh R, Raina R. Plasma Zinc, Iron, Vitamin A and Hematological Parameters in Dogs with Sarcoptic Mange. *Israel Journal of Veterinary Medicine*, 2013; 68(4): 239-245.
14. Ahn J, Koo SI. Effects of zinc, and essential fatty acid deficiencies on the lymphatic absorption of vitamin A and secretion of phospholipids. *J. Nutr. Biochem*, 1995; 6: 595-603.
15. Noh SK, Koo SI. Low zinc intake decreases the lymphatic output of retinol in rats infused intraduodenally with  $\beta$ -carotene. *J. Nutr. Biochem*, 2003; 14: 147-153.
16. Mejia LA. Vitamin A-nutrient interrelationships. In: Bauernfeind JC (eds.). *Nutrition basics and applied science*, New York Academic Press Inc., 1986; 89-100.
17. Radostitis OM, Blood DC, Gay GC. *Veterinary Medicine*. 8th ed., Bailliere, Tindal., 1994.
18. McCay PB, King MM. Vitamin E: Its role as a biologic free radical scavenger and its relationship to the microsomal mixed-function oxidase system. In: Vitamin E (ed.). *Comprehensive Treatise*, New York, L.J.Machlin,.: Marcel Dekker., 1980; 289-317.
19. Banerjee R, Choudhary S. Methylmalonyl- CoA mutase. In: Banerjee R (ed.). *Chemistry and biochemistry of B12*, New York, 1999; 707-730.
20. Sharma R, Anker S. First cachexia symposium. Berlin, Germany: 1st- 2nd December, 2000. *Eur J Heart Fail.*, 2000; 3: 751- 4.
21. Morley JE, Thomas DR, Wilson MMG. Cachexia: Pathophysiology and clinical relevance. *Am J Clin Nutr*, 2006; 83: 735-743.
22. Von Haehling S, Lainscak M, Springer J. Cardiac cachexia: A systematic overview. *Pharmacol Therapeut*, 2009; 121: 227-252.
23. Ahmed W, Khan N, Glueck C.J, Pandey S, Wang P, Goldenberg N. Low serum 25 (OH) vitamin D levels (<32 ng/mL) are associated with reversible myositis-myalgia in statin-treated patients. *Transl. Res.*, 2009; 153: 11-16.
24. Weisman Y, Somjen D, Kohen F, Gayer B, Limor R, Sharon O. 25-hydroxyvitamin D<sub>3</sub>-1 $\alpha$ -hydroxylase is expressed in human vascular smooth muscle cells and is upregulated by parathyroid hormone and estrogenic compounds. *Circulation*, 2005; 111: 1666-1671.
25. Maghni K, Bossé Y, Hudson TJ. 1 $\alpha$ ,25-dihydroxy-vitamin D<sub>3</sub> stimulation of bronchial smooth muscle cells induces autocrine, contractility, and remodeling processes. *Physiol. Genom.*, 2007; 29: 161-168.
26. Eggersdorfer M, Stöcklin E. Vitamin D, an essential nutrient with versatile functions in nearly all organs. *Int. J. Vitam Nutr. Res.*, 2013; 83: 92-100.