

Evaluation Efficacy of Herbal Preparations for the Treatment of Canine Mange

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Abstract: A present study was conducted to evaluate efficacy of various herbal preparations for the treatment of canine mange. For present study a total of 101 animals were screened for the skin infection, among them 41 dogs were found positive for mange infections. Systematic and detailed appraisal of haemato-biochemical profiles as well as skin scrapping specimens was carried out in twenty four cases. For treatment trial a total of 24 dogs positive for mange were divided into three groups with eight dogs in each group were selected for study. In therapeutic trials in group I neem oil, group II neem leaf extract and in group III herbal medicine prepared by mixing leaves of neem, Datura, Sitaphal and Ark was applied locally on affected area QID for 20 days and drug efficacy and improvement in clinical signs were observed on 10th, 20th and 30th day post treatment..

Keywords: Mange Disorder, Therapeutic efficacy, herbal medicine

INTRODUCTION

In spite of great advances of modern scientific medicine, traditional medicine is still the primary form of treating diseases. Natural products play an important role in drug discovery and many approved therapeutics as well as drug candidates has been derived from natural sources. They have been the source of most of the active ingredients of medicines. Dogs frequently suffer from different health problems, among them skin diseases are usually very common and frequently recorded [1]. Skin diseases fall into two main categories, namely, parasitic and non-parasitic diseases. Mange is a contagious skin disease, characterised by crusty, pruritic dermatitis and hair loss, and caused by a variety of parasitic mites burrowing in or living on the skin. It is a non-descript term used to imply a condition caused by mites on or near the skin surface [2]. Applications of chemical drugs or acaricides are the only rational treatment for canine mange now a day. But the chemical compounds may have residual toxicity problem and they are toxic for the animal. Due to indiscriminate use, mites may develop resistance against these drugs. So emphasizes are given to develop new and effective therapy against canine mange by using different herbal preparations. Plant kingdom is known to have plethora of antimicrobial agents [3]. The use of these herbal antimicrobials has certain advantages like it is economical, act on targeted insect pests without side effects; development of resistance is minimum and ecofriendly [4].

MATERIALS AND METHOD

In present study, a total number of 101 dogs were presented at Veterinary clinical complex (TVCC) Veterinary hospital, College of Veterinary Science and

A.H., Mhow. Skin scrapings were collected and were treated with 10% KOH solution as per standard method for diagnosis of mange mite infestation. Out of which 41 dogs were confirmed for mange infestation. For treatment trial a total of 24 dogs positive for mange were divided into three groups with eight dogs in each group. In group I neem oil was applied to mange affected dogs, in group II neem leaf extract was applied to mange affected dogs and in group III mixture of neem, sitaphal, ark and datura was applied to mange affected dogs.

Preparation of herbal drugs

- **Demease lotion**

Demease a lotion prepared by mixing neem oil in light carrier oil or sweet oil (1:1).

- **Extraction of Crude Neem leaves**

Neem leaf extract was prepared by boiling neem leaf in water (1:10) for 10 to 15 minutes, strained and stored in bottle with lid.

- **Mixture of Neem, Sitaphal, Datura and Ark leaves extracts**

It was prepared by chopping (coarsly) leaves of above mentioned plants these chopped material was kept in a closed container after adding little quantity of water for atleast seven days. After 7 days the fermented mixture was boiled for 15 to 20 minutes, and was strained and stored in bottle with lid.

CLINICAL OBSERVATIONS

In present study each dog was subjected to detail clinical study. Clinical examination of all the cases revealed mild pyrexia, skin lesions of mange were

found alopecia, redness, hyperkeratinization, scabs, hairfall, skin cracks, rashes, pododermatitis, foul smelling, irritation, eruptions, crusts, pyoderma and scratching were observed in dogs.

Haematology revealed significant decrease in haemoglobin, PCV, TEC and significant increase in TLC, eosinophilia and neutrophilia was also observed during canine sarcoptic and demodectic mange infestations. In mange affected dogs significantly lower level of total protein, albumin and increased level of globulin, AST and ALT was observed. Presumptive diagnosis was made on the basis of history, characteristic clinical signs, physical examination and by skin scrapping examination.

THERAPEUTIC STUDY

Dogs of all the groups showed moderate clinical improvement on day 10 post treatment. In group I at 0 and 10th day no dogs showed complete recovery. At 20th day 5 dogs showed complete recovery and were found negative for mange infestation indicating 62.5% recovery rate. While at 30th day a total number of 7 dogs were completely recovered and negative for mange infestation indicating 87.5% recovery (Table 01).

In group II at 0 and 10th day no dogs showed complete recovery. At 20th day 3 dogs showed complete recovery and were found negative for mange infestation showing 37.5% recovery rate. While at 30th day a total number of 4 dogs were completely recovered and having negative for mange infestation indicating 50% recovery.

In group III at 0 and 10th day no dogs showed complete recovery. At 20th day 7 dogs showed complete recovery and were found negative for mange infestation showing 87.5% recovery rate. While at 30th day a total

number of 8 dogs were completely recovered and having negative for mange infestation indicating 100% recovery.

However on day 30 post treatments, the present therapeutic trial brought about 50% parasitological response in group II, whereas 87.5 and 100 percent response was recorded in dogs of group I and group III respectively.

The efficacies of different therapeutic regimens were assessed based on disappearance of clinical symptoms, the skin scrapping examination and restoration of altered hemato-biochemical parameters.

In the present study effect of group III (herbal medicine) in the treatment of mange was found 100%.

DISCUSSION

In group I (n=8) treated with demasee lotion topically on affected areas daily QID for 5 weeks at different days of intervals 0 pre, 10, 20, 30 days post treatment and found recovery which revealed lower than the study of Jatav [5] in canines and Hirudkar *et al.* [6] reported 87% recovery in sarcoptic mange in sheep.

In group II (n=8) crude neem Leaf extract topically on affected areas daily QID for 5 weeks at different days of intervals 0 pre, 10, 20, 30 days post treatment and found recovery which revealed similarities with the study of Upadhyay [7], Fernandes *et al.* [8] and Marwat *et al.* [9].

In group III mixture of leaves of *Azadirachta indica*, *Calotropis procera*, *Annona squamosa*, *Datura stramonium*, topically on affected areas daily QID for 5 weeks at different days of intervals 0 pre, 10, 20, 30 days post treatment and found recovery which revealed similarities with the study of Sharma and Joshi [10].

Table-1: Evaluation efficacy of different herbal preparations against Canine Mange.

Group	Treatment (Given for 6 weeks)	NO. of Affected dogs	Clinicoparasitologically recovered dogs							
			0 day		10 day		20 day		30 day	
			No. of Recovered	Recovery (%)	No. of Recovered	Recovery (%)	No. of Recovered	Recovery (%)	No. of Recovered	Recovery (%)
I	Application of Demease lotion topically on affected areas daily QID for 5 weeks.	8	8	0	8	0	5	62.5%	7	87.5%
II	Application of crude neem Leaf extract topically on affected areas daily QID for 5 weeks.	8	8	0	8	0	3	37.5%	4	50%
III	Application of mixture of leaves of (neem, sitaphal, ark, datura) topically on affected areas daily QID for 5 weeks.	8	8	0	8	0	7	87.5%	8	100%

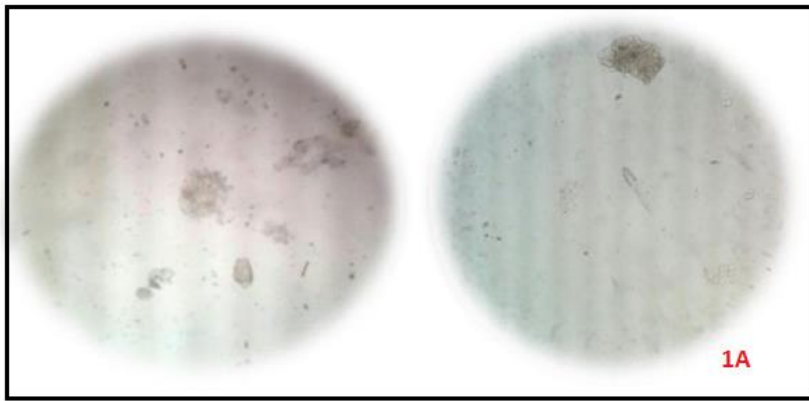


Fig-1A:. Microscopic findings of *Sarcoptic scabiei* and *Demodex canis* in canines. **Fig-2B:** dog showing skin infection on 0 day pre treatment. **Fig-2C:** dog showing skin infection on 0 day pre treatment. **Fig-2D:** dog showing skin infection on 0 day pre treatment and **Fig-2E:** dog showing skin infection on 0 day pre treatment.

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