

Case Study

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## Efficacy of Tiflicon Spray in Ectoparasitic Infestations in Dogs

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### ABSTRACT

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Twenty clinical surgical cases of dogs suffering from ectoparasites and mites presented to Department of Surgery and Radiology, TVCC and The Bai Sakarbai Dinshaw Petit Hospital affiliated to Mumbai Veterinary College Parel, Mumbai were selected for the present study. The treatment of clinical surgical cases of dogs was done with Tifliconspray. Clinical signs like itching, pain, erythema, swelling were subsided 5 days after treatment. The tests like Quantitative analysis: ectoparasite visual load at ear, neck, paws and severity of ectoparasites reduced significantly 5 days after treatment with Tiflicon Spray. The mite infestation present in two cases was completely absent on 10<sup>th</sup> post-treatment day. The ectoparasiticidal action and recovery was good in all the cases treated with Tiflicon Spray.

### Introduction

Ectoparasitic infestations are most common in animals. TifliCon Ectoparasiticide Spray have acaricidal and larvicidal activity which helps in elimination of ticks and mites infestation in pets. The Constituents of TifliCon Ectoparasiticide Spray have anti-inflammatory and wound healing activity, they act through inhibition of pro-inflammatory mediators and strengthening the process of repair. Constituents of TifliCon Ectoparasiticide spray have insecticidal activity in low concentration which helps in the prevention of infestation with lice and fleas. It is used in

Sarcoptic and Demodectic Mange, Mites, Fleas, Ticks, Lice, Dandruff.

To keep the body and hair coat clean and glossy. Sharma *et al.*, (1997) suggested that in view of toxic effects, developing resistance, high cost and the health hazards to humans using these chemical acaricides, use of herbal preparations against skin problems like mange is visualized. Tiflicon spray contains Devdaru/ *Cetrus deodara*, Cheer/ *Pinus longifolia*, Lemon grass/ *Cymbopogon citratus* and Neem/*Azadirochita indica* and *Acorus calamus*. Azima *et al.*, (2011) reported the antiparasitic activity of *Cymbopogon*

*citratus* and *Azadirachta indica* in house dust mites. Present study deals with the study on efficacy of Tiflicon spray in ectoparasitic infections in dogs. [TifliCon Spray–Indian Herbs Specialities Pvt. Ltd. Saharanpur].

## Materials and Methods

Twenty clinical surgical cases of dogs suffering from Ectoparasites and mites presented to Department of Surgery and Radiology, TVCC and The Bai Sakarbai Dinshaw Petit Hospital affiliated to Mumbai Veterinary College Parel, Mumbai were selected for the present study. Clinical signs of different clinical surgical cases of ectoparasitic infestation like itching, pain, erythema, swellings before and 7 days after treatment were studied. The tests like Quantative analysis: ectoparasite load at. ear, neck, paws. Visual load of ticks (live and dead) before and 7 days after treatment skin scrapings to rule out mite infestation before and 10 days after treatment was performed.

The treatment of clinical surgical cases of dogs was done with Tiflicon spray and efficacy against ectoparasites like Fleas, Ticks, Lice, and Mites was studied. Recovery on the basis of clinical signs and skin culture & sensitivity tests was assessed.

## Results and Discussion

Twenty clinical surgical cases of dogs showing tick infestation and various other surgical conditions were selected for the study. The Tiflicon spray was sprayed once daily for the period of 10 days on the body of dogs and areas where the tick population and density is more.

### Itching

Itching was present in all the 20 (100%) cases suffering from tick infestation before treatment. In 18 (90%) cases of dogs itching

disappeared after 5 days of treatment. This is indicative of effectiveness of Tiflicon spray for subsiding clinical signs of itching due to tick infestations. This may be due to anti-inflammatory activity of Tiflicon spray. Constituents of TifliCon Ectoparasiticide Spray like Devdaru/ *Cetrus deodara*, Cheer/ *Pinus longifolia*, Lemon grass/ *Cymbopogon citratus* and Neem/ *Azadirachta indica* and *Acorus calamus* have antiparasitic activity. This might be due to presence of *Acorus calamus* in Tiflicon spray. Mohmad and Hameed (2018) reported that antiinflammatory and antilarvicidal property of *Acorus calamus* Kim *et al.*, (2009), Kim *et al.*, (2011) and Kim *et al.*, (2012).

### Pain

Out of 20 cases of dogs, pain due to tick infestation was present in 13 (65%) cases before treatment. It completely subsided on 5<sup>th</sup> and 10<sup>th</sup> day of treatment. This suggests that Tiflicon spray for reliving clinical signs of pain due to tick bite infestations. Constituents of TifliCon Ectoparasiticide Spray have anti-inflammatory and wound healing activity, they act through inhibition of pro-inflammatory mediators and strengthening the process of repair. This may be due to effect of *Acorus calamus*, the larvicidal, tranquilizing and anti-inflammatory effects of it Mohammad and Hameed (2018).

### Erythema

Out of 20 cases erythema was present in 14 (70%) cases. The signs of Erythema were completely subsided in all 20 (100%) cases on 5<sup>th</sup> and 10<sup>th</sup> day of treatment with Tiflicon Spray. It shows that Tiflicon spray can be effectively used for subsiding clinical signs of erythema caused by tick infestations due to antiparasitic and anti-inflammatory property of Tiflicon spray. Pharmacologically *Acorus calamus* was reported to possess

antimicrobial, anti-allergic and anti-inflammatory Kim *et al.*, (2009), Kim *et al.*, (2011), Kim *et al.*, (2012).

### Swelling

The swelling at the site of tick bite was present in 6 cases before treatment with Tiflicon whereas it was completely absent in all 6 (100%) the cases after 5 and 10 days of Tiflicon treatment. This might be due to considerable reduction of tick infestation by Tiflicon spray in tick infestations which ultimately lead to no tick bites to animal and no swellings on body of dogs. Tiflicon spray is having anti-inflammatory and wound healing activity, and its action by inhibition of pro-inflammatory mediators and strengthening the process of repair might have reduced the swelling. *Acorus calamus* is a traditional remedy for the inflammation but their biological function in the human skin cells not well characterized. *Acorus Calamus* has been found to inhibit the expression of polyI: C-induced IL-6 and IL-8 which indicates their inhibitory effect on the expression of the cytokines which were likely to be in association with the suppression of NF-κB activation and phosphorylation of IRF3 that shows the *Acorus calamus* L. may be used as a promising immunomodulatory agent in the inflammatory skin diseases Mohmad and Hameed (2018).

### Visual load of ectoparasites

Visual load of ectoparasites was examined at different specially ear, around neck and paws which are the most common sites for tick infestation. Out of 20 cases of dogs 17 (85%) cases of dogs were having more visual load of ectoparasitic infestation on ears and 18 (90%) cases of dogs were having more visual load on neck and paws before treatment before treatment with Tiflicon Spray. The visual load of tick infestation on ears was absent in 19

(95 %) cases, on neck it was absent in 17(85%) cases and visual load of tick infestation on paws was absent in 19 (95%) cases of dogs on the 5<sup>th</sup> day after treatment with Tiflicon Spray. This is indicative of good effect of Tiflicon Spray for reducing visual load of ectoparasites in dogs after 5 days of topical treatment. TifliCon Ectoparasiticide Spray have acaricidal and larvicidal activity which helps in elimination of ticks and mites infestation in pets. Tiflicon spray containing *Devdaru/ Cetrus deodara*, *Cheer/Pinus Longifolia*, *Lemon grass/ Cymbopogon citratus* and *Neem/Azadirachta indica* and *Acorus calamus* which would have reduced the visual load of ectoparasites. Azimaet.al (2011) recorded the effect of *Cymbopogon citratus* and *Azadirachta indica* against house dust mites, Sharma *et al.*, (1997) studied efficacy of *Cedrus deodura* and Benzyl benzoate in sarcoptic mange in sheep.

### Severity of ectoparasites

Severity of ectoparasites was assessed and it was observed that 14 (70%) cases were having +++ severity of ectoparasites before treatment with Tiflicon spray, 4 (20%) cases were having ++ severity of ectoparasites load of ectoparasites before treatment with Tiflicon spray and 2 (10%) were having ++++ severity of ectoparasites before treatment with Tiflicon spray. Most common sites for ticks were ear, neck and paws. Out of 20 cases in the present study all 20 (100%) cases were having no visual ticks on the ear, neck, paws after 5 days of treatment with Tiflicon spray. This suggests that Tiflicon spray had excellently decreased the severity of ectoparasites after 5 days of treatment. The ingredients of TifliCon Ectoparasiticide Spray have acaricidal and larvicidal activity which helps in removal of ticks and mites infestation in dogs. Sharma *et al.*, (1996) reported the antiparasitic effects of *Citrus deodars* and *Azadirachta indica* and benzyl benzoate in

sarcoptic mange in sheep. Mohmad and Hameed (2018). Reported the antiparasitic effects of *Acarus calamus*. Azima *et al.*,

(2011) studied the effect of *Cymbopogon citratus* and *Azadirachta indica* against house dust mites.

**Table.1** The cases included in the present study are as follows:

Case No.	Breed	Age	Sex	Body Weight	Disease
1	ND	4 months	Female	6 kgs	Maggoted wound and tick infestation
2	ND	4 months	Female	6 kgs	Aural hematoma and tick infestation
3	ND	4 months	Male	8 kgs	Wound on back and tick infestation
4	ND	3months	Male	4 kgs	Wound on paw and tick infestation
5	ND	5 years	Male	12 kgs	Maggot wound and tick infestation
6	ND	2 years	Male	20.5 kgs	Aural Hematoma and tick infestation
7	Lab	7 years	Female	23 kgs	Maggot wound and tick infestation
8	Cocker Spaniel	4 years	Female	10.7 kgs	Spaying and tick infestation
9	ND	8 years	Male	20.3 kgs	Ear wound and tick infestation
10	ND	6 years	Male	20 kgs	Lameness and tick infestation
11	ND	2 months	Female	2 kgs	Wound and tick infestation
12	ND	6 years	Male	25 kgs	Castration and tick infestation
13	ND	4 months	Female	6 kgs	Tick infestation and wound
14	ND	4 months	Male	8 kgs	Swelling on back and tick infestation
15	ND	8 years	Male	20 kgs	Lacerated wound and tick infestation
16	ND	5 months	Male	12 kgs	Tick infestation and wound
17	ND	4 months	Male	10 kgs	Limping and tick infestation
18	ND	10 years	Male	12 kgs	Avulsion of nail and tick infestation
19	ND	6 years	Female	35 kgs	Tick infestation and maggot wound
20	ND	6 months	Female	10 kgs	Tick infestation and wound

**Case no.1** Severe Ectoparasitic infestation before treatment with Tiflicon spray



Complete subsidal of ectoparasitic infestation after five days of treatment



**Case no.12** Severe tick infestation before Tiflicon Spray Treatment



Subsidal of tick infestation after five days after treatment with Tiflicon spray



Case no. 19 Severe tick infestation before Tiflicon Spray Treatment



Subsidal of tick infestation after five days after treatment with Tiflicon spray



## Tests

### Skin scrapping

The skin scrapping examination was performed to rule out mite infestation before and 10 days after treatment with Tiflicon spray. Out of 20 cases in the present study 2 cases (10%) were positive for mite infestation before treatment and the mite infestation was completely absent in all (100%) cases 10 days after treatment with Tiflicon spray. This shows the good effect of Tiflicon spray in mite infestation also in dogs after 10 days topical treatment on the body. This might be due to anti-parasitocidal action of ingredients of Tiflicon spray Dimri and Sharma (2004) reported in sarcoptic mange, Azima *et al.*, (2011) in house dust mites.,

## Treatment

### Ectoparasitidal action

The Tiflicon spray was sprayed once daily for the period of 10 days on the body where the tick population and density is more.

The ectoparasitidal action on ticks was considered up-to 10 days of topical application of Tiflicon spray. Out of 20 cases in the present study 12 (60%) cases were having +++ Live dead tick count and 8 (40%) cases were having ++ Live dead ticks on the body of dogs before treatment with Tiflicon spray. In all 20 (100%) dogs the live dead ticks were completely absent on the body 5 days after treatment with Tiflicon spray which may be due to the excellent effect of Tiflicon spray in subsiding live dead tick count and its ectoparasitidal action. Sharma *et al.*, (1997) Dimri and Sharma (2004), Mohammed and Hameed (2018), Kim *et al.*, (2011), Kim *et al.*, (2012) and Azima *et al.*, (2011) also reported the similar effects of *Cetrus deodara*, *Pinus longifolia*, *Cymbopogon citratus* and

*Azadirochita indica* and *Acorus calamus* as antiparasitic and anti-inflammatory.

## Recovery

The recovery on the basis of clinical signs, disappearance of parasites and visual examination and skin scrapings for mites was assessed. The clinical signs like pain, erythema and swelling were completely absent after 5 days of treatment with Tiflicon spray and itching was absent after 5 days of treatment with Tiflicon spray which is suggestive of 90-100% disappearance of various clinical signs after Tiflicon spray treatment. In majority of cases the parasites on ear, paws and neck completely disappeared after 5 days of Tiflicon treatment. In all the 2 cases (10%) the skin scrapping was negative for mite infestation after 10 days of treatment with Tiflicon spray. All the above recovery signs indicate that Tiflicon spray can be effectively used for control of tick and mite infestation in dogs. This recovery may be due to the anti-parasitic, anti-inflammatory and tranquilizer property of Tiflicon spray in dogs. Similar findings are reported by Sharma *et al.*, (1997) Dimri and Sharma (2004), Mohammed, and Hameed (2018), Kim *et al.*, (2011), Kim *et al.*, (2012) and Azima *et al.*, (2011) as in the present study.

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