

Owner-Reported Clinical Outcomes of a Homeopathic Proprietary Preparation for the Treatment of Upper Respiratory and Nasal Disorders in Companion Animals

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Abstract

Background: Nasal and upper respiratory conditions are frequent issues in dogs and cats, presenting symptoms like sneezing, nasal obstruction, and various types of discharge. These can result from allergies, infections, foreign objects, or anatomical factors. While many cases respond to treatment, underlying issues often cause relapses. The investigational product offers a potential new approach for managing these nasal and sinus diseases in companion animals.

Objectives: The primary objective of this PRO (Patient Reported Outcome) study was to assess the efficacy and safety HomeoPet® Nose Relief in Upper Respiratory Tract Disease Symptoms.

Methods: This study was done on patient-reported outcome (PRO) data collected via an internet questionnaire. It is a facilitator-driven survey similar to previous studies17,18,19.

Results: The study included 221 real-world patients split over four small animal species, with dogs and cats being in the majority. Runny Nose 94 (44.76%), Sneezing 73 (34.76%), Watery eyes 55 (26.19%), Nasal blockage 35 (16.67%), Upper respiratory infection 17 (8.1%), 6 (2.86%), Cold 30 (14.29%), Allergies 20 (9.52%), Nasal discharge 93 (44.29%) and Sinusitis 8 (11.94%) cases p< 0.0000001. In 61 (29.05%) pets, the symptoms were constant, while 71 (33.81%) had intermittent symptoms. The ANOVA revealed that there was an extremely weak downhill relationship between the pet type and efficacy of the medicine (p<0.0001). The analysis or correlation revealed a statistically significant, moderately high correlation between the frequency of symptoms and efficacy of Nose Relief in relieving the symptoms (R=0.408096, p<0.0001). Frequency of daily dose and age had a moderately low relationship with efficacy, in different directions. It can be administered orally-directly, in food, or water-with dosing 1 to 3 times daily generally sufficient. More frequent dosing was well tolerated and may be beneficial in acute or chronic nasal and upper respiratory conditions, offering a novel therapeutic option in veterinary care.

Conclusion: Nose Relief, was found to be safe and effective for managing upper respiratory tract infections (URTIs) in companion animals.

Keywords: Nasal Discharge; Rhinitis; Sinusitis; Sneezing; Upper Respiratory Tract Infection; URTI; Feline Viral Rhinotracheitis; Dyspnea; Airway Obstruction; Homeopathy; Ultra-dilute Preparations; Companion animals; Dogs; Cats



Abbreviations

URTI: Upper Respiratory Tract Infection; URTD: Upper Respiratory Tract Disease.

Introduction

Upper Respiratory Tract Infection (URTI) was hardly considered in the list of common acute infective conditions of pets before 2007, when the subclinical infections of viral conditions were found responsible for the spread of cold-like disease [1]. Despite a few sporadic reports of respiratory infections [2], there was insufficient attention towards the condition and, thereby, its treatment. However, during the 2007 and 2016 outbreaks of avian flu, a large number of pets were infected with cold-like symptoms. The infectant had affected many pets, was tracked in the canine and feline upper respiratory tract [1]. This incident changed the perception, and upper respiratory tract infection evolved as a condition to be watched in pets. Later, this changed landscape was established even more strongly, with the addition of a viruses identified as the cause of URTI in pets.

As per a 2017 WHO report "Zoonotic influenza viruses: antigenic and genetic characteristics and development of candidate vaccine viruses for pandemic preparedness", a significant number of influenza viruses (from H5 genetic clan) are affecting animals, especially pets, and of these several viruses were identified as infecting animals for the first time [3]. Other viruses, including Bordetella bronchiseptica, Chlamydophila Felis, Mycoplasma Felis, Feline Herpes viruses, and Feline Calicivirus, are among the leading causes of URTI or Upper Respiratory Tract Disease (URTD) in cats [4]. The pandemic of SARS-CoV-2 broke out, pets, especially cats, were also found to be infected with the novel virus, leading to COVID-19 [5]. It could be said that this leads to the misuse and potential misuse, improper use, and overuse of antimicrobials.

Antimicrobial therapies, which include antibacterial and antiviral drugs like Pheromone, Vedaprofen, Pradofloxacin, and Famciclovir, antibiotics like Doxycycline and steroids are among the popular therapies [6]. Therapy with passive antibodies is among the emerging options. However, there are many studies with either negative or unclear outcomes in various papers [7]. Many of these therapies also tend to produce certain side effects besides their cost and cause-specific short-term effects. Observed seasonality of infections appearing as outbreaks has been reported from various parts of the world.

This seasonality adds to the urgency of therapy to control the rapid spread. In an attempt to control the disease outbreaks, a vaccination program is under development.

However, the efficacy of the vaccine, or rather the vaccination program, in achieving the desired rate of immunization is our major challenge [8].

Two major concerns about the URTD8-11 of pets include the rapid spread of the URTD, which risks spreading to humans and a wide range of causative organisms, against which exact diagnosis and immunization are hard to achieve [8-11]. There is an obvious relationship between the diagnostic methods available and used and the understanding of the real causative factors, so as to help the passive immunity therapy [9]. Hence, about seasonality, acuteness of the condition, unavailability of the definitive therapy, cost of diagnosis and treatment including immunization, appears to have led to alternate therapy becoming extremely popular for URTI / URTD [10-14].

Rationale of the Study

Homeopathic medicines have gained popularity and have generated evidence in the treatment of URTI [15]. This study was conducted to generate evidence of the safety and efficacy of the homeopathic medicine "nose relief".

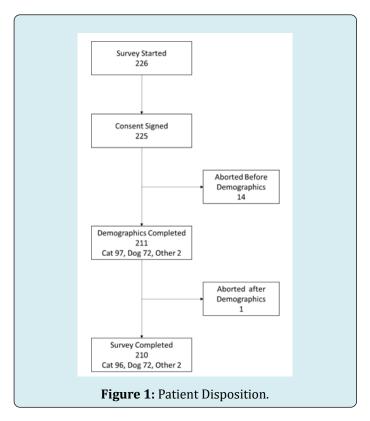
Materials and Methods

This study was a survey-based study conducted with an internet-based questionnaire, facilitated through independent facilitators. The investigational product for this study was "Nose Relief," a proprietary homeopathic combination medicine indicated for upper respiratory tract infection.

The Homeopathic medicines included in this formula are based upon the medicines indicated under the reportorial syndromes using symptoms watery nose discharge, Nose Sneezing, Eyes Discharge, Lacrimation, coryza, and Nose blocked in Robin Murphy's Repertory.

Results

In all, 226 Respondents started the survey, of which 1 was dropped for not signing the Informed consent, and 92% of respondents continued. Of these, 14 (6.22%) respondents aborted the survey process before entering demographics details and 211 (93.77%) completed the demographics details, in which the details of 97 (45.97%) cats, 24 (34.12%) dogs, 1 (0.4%) mouse and 1 (0.4%) rabbit were captured. In all, 1 (0.4%) respondent started the survey, but aborted after entering demographics details. Thus, a total of 210 (92.92% of the initial group) respondents. This group of 210 evaluable animals consisted of 96 (45.71%) cats, 72 (34.29%) dogs, and 1 (1.06%) mouse and rabbit each. The 210 animals for which their owners added sufficient details were considered as the safety and efficacy evaluation population (Figure 1).



Demographics

Overall, 211 animals were included in the study with upper respiratory tract infections. One record mentioned having multiple animals, hence it was removed from the analysis. The group of 210 animals was analysed, having a mean age of 7.16 years, 88 (41.9%) males and 81 (38.57%) females, 41 ± 5.24 Pounds of mean weight, and 55 (26.19%) pets who had been neutered. Of the 210, 96 (45.71%) were cats. In the feline group, the mean age was 8.28 ± 6.12 years,

26 (53.06%) were males, and 22 (44.9%) were females. The average weight was 13.58 ± 17.38 pounds, and 44 (89.8%) cats were neutered. In the group, 17 (25.37%) dogs with an average age of 9.18 ± 5.23 years, 8 (47.06%) males, and 9 (52.94%) females were included. The average weight of dogs was 28.35 ± 28.55 pounds, and 11 (64.71%) had been neutered. There was one (1.49%) female mouse of 6 years, with 0.11 pounds weight, and was not neutered (Table 1). Due to the large variance among different species, reporting standard deviations of age and weight was not relevant.

Demographics	Cat	Dog	Mouse, Rabbit	Overall
Species Count	96 (45.71%)	72 (34.29%)	2 (0.95%)	210 (100%)
Age	8.28 ± 5.41	9.18 ± 5.83	4.5	7.16 ± 0.3
Male	50 (52.08%)	37 (51.39%)	2 (100%)	88 (41.9%)
Female	46 (47.92%)	34 (47.22%)	1 (50%)	81 (38.57%)
Weight	13.53 ± 13.9	18.16 ± 21.31	3.66	41 ± 5.24
Neutered	44 (45.83%)	11 (15.28%)	0 (0%)	55 (26.19%)

Table 1: Demographics of the pets enrolled.

Medical History

In all, 44 (20.95%) pets had received medical support by being attended to by a veterinarian. The group of 210 enrolled pets had various medical histories including Renal Dysfunction in 5 (2.38%), Arthritis in 3 (1.43%), FIV Infection and Chronic Bronchitis 2 (2.99%) patients each, Asthma, Am & Pm zoonotic infection, Fungal Infection, Calici virus infection, Digestive Problem, Diabetes, Overweight, Cardiac dysfunction, Tumour, Mycoplasma, and Seizures was observed in one (1.49%) patient each (Table 2).

Medical Support	Cat	Dog	Mouse, Rabbit	Overall	
Attended By Vet	11 (11.46%)	33 (45.83%)		44 (20.95%)	
Medical History					
Arthritis	1 (1.04%)	2 (2.78%)	0 (0%)	3 (1.43%)	
Asthma	0 (0%)	1 (1.39%)	0 (0%)	1 (0.48%)	
FIV*	0 (0%)	2 (2.78%)	0 (0%)	2 (0.95%)	
Renal Dysfunction	0 (0%)	5 (2.38%)	0 (0%)	5 (2.38%)	
AM & PM Zoonotic	0 (0%)	1 (1.39%)	0 (0%)	1 (0.48%)	
Cardio-respiratory Complication	0 (0%)	1 (1.39%)	0 (0%)	1 (0.48%)	
Chronic bronchitis	1 (1.04%)	1 (1.39%)	0 (0%)	2 (0.95%)	
Fungal Infection	0 (0%)	1 (1.39%)	0 (0%)	1 (0.48%)	
Calici virus*	0 (0%)	1 (1.39%)	0 (0%)	1 (0.48%)	
Digestive Problem	1 (1.04%)	0 (0%)	0 (0%)	1 (0.48%)	
Diabetes	0 (0%)	0 (0%)	0 (0%)	1 (0.48%)	
Overweight	0 (0%)	1 (1.39%)	0 (0%)	1 (0.48%)	
Cardiac dysfunction	0 (0%)	1 (1.39%)	0 (0%)	1 (0.48%)	
Tumour	0 (0%)	0 (0%)	0 (0%)	1 (0.48%)	
Mycoplasma	0 (0%)	0 (0%)	0 (0%)	1 (0.48%)	
Seizures	0 (0%)	1 (1.39%)	0 (0%)	1 (0.48%)	

Table 2: Medical History of pets enrolled.

The concomitant medication along with Nose Relief or past medication included Antibiotics in 11 (5.24%) animals (1 cast and 10 dogs), Steroids in 3 (1.43%) dogs, Chinese Medicines in 1 (0.48%) dog, Other Homeopathic Medicine in 6 (2.86%) comprising of 2 (3.51%) dogs and 4 (7.02%) cats, and Other Medication recorded in 6 (2.86%) pets of which 1 (1.75%) was cat, 5 (5.21%) were dogs. The Medication

prescribed provided complete relief in 3 (1.43%) patients, 1 (1.75%) cat, and 5 (5.21%) dogs counting for overall 6 (2.86%) animals that had partial relief, 5 (8.77%). There was no relief for 16 (7.62%) patients, 6 (10.53%) cats, and 10 (10.42%) dogs. In 4 (7.02%) Dogs, the symptoms relapsed after discontinuation of the medicine (Table 3). All the outcomes were statistically significant.

Consomitant Medication	Cat	Dog	Overall
Concomitant Medication	N=96	N=72	N=210
Antibiotic	1 (1.75%)	10 (10.42%)	11 (5.24%)
Steroid	0 (0%)	3 (3.13%)	3 (1.43%)
Chinese	0 (0%)	1 (1.04%)	1 (0.48%)
Homeopathic	4 (7.02%)	2 (2.08%)	6 (2.86%)
Other Medication	1 (1.75%)	5 (5.21%)	6 (2.86%)
Previous Medication Effectiveness for URTI			
Complete	1 (1.75%)	1 (1.04%)	3 (1.43%)
Partial	1 (1.75%)	5 (5.21%)	6 (2.86%)
No	6 (10.53%)	10 (10.42%)	16 (7.62%)
Relapse	0 (0%)	4 (4.17%)	4 (1.9%)
p-Value	0.025	0.094	0

Table 3: Concomitant Medication and Its Effectiveness.

The previous and concomitant medicines had in all 8 (3.80%) adverse effects reports. These reports included gastrointestinal Disturbance, Secondary Infection, and Sleepiness in one (0.47%) case each, while for 5 (2.38%) reports, there was no specific information (Table 4).

Adverse Effects after Previous Medication			
Total Adverse Event Reports	8 (3.80%)		
Gastrointestinal Disturbance	1 (0.47%)		
Secondary Infection	1 (0.47%)		
Sleepiness	1 (0.47%)		
Unspecified	5 (2.38%)		

Table 4: Adverse Events of Previous and Concomitant Medication Concomitant Medication

Baseline Disease Characteristics

The baseline and outcomes were analysed on the overall group only. All animals had one or more presenting symptoms for which Nose Relief was prescribed. These symptoms included Runny Nose 94 (44.76%), Sneezing 73 (34.76%), Watery eyes 55 (26.19%), Nasal blockage 35 (16.67%), Upper respiratory infection 17 (8.1%), 6 (2.86%), Cold 30 (14.29%), Allergies 20 (9.52%), Nasal discharge 93 (44.29%) and Sinusitis 8 (11.94%) cases p< 0.0000001. In 61 (29.05%) pets, the symptoms were constant, while 71 (33.81%) had intermittent symptoms (Table 5).

Presenting Symptoms			
Runny Nose	94 (44.76%)		
Sneezing	73 (34.76%)		
Watery eyes	55 (26.19%)		
Nasal blockage	35 (16.67%)		
Upper respiratory infection	17 (8.1%)		
Dog Flu	6 (2.86%)		
Cold	30 (14.29%)		
Nasal discharge	93 (44.29%)		
Sinusitis	8 (3.81%)		
Allergies	20 (9.52%)		
Other	17 (8.1%)		
Intermittency of Symptoms			
Constant	61 (29.05%)		
Intermittent	71 (33.81%)		

Table 5: Presenting symptoms at baseline.

Posology of the Nose Relief use

A large amount of data on posology was missing from the data. Of the available data, Nose Relief was given to 16 (7.62%) pets once per day, to 35 (16.67%) pets twice a day, for 34 (16.19%) it was thrice a day, and 7 (3.33%) were given more than 3 doses per day. Most 65 (30.95%) pets were given medicine directly by dropping in the mouth, while 57 (27.14%) were given in Food, and 16 (7.62%) through Water. In all, 88 (41.9%) respondents reported that the prescription followed dispensing Instructions, while 122 (58.1%) owners considered that there had been or may have been errors while they gave the medicine to their pet (Table 6).

Frequency per day			
1	16 (7.62%)		
2	35 (16.67%)		
3	34 (16.19%)		
>3	7 (3.33%)		
Mode of Dispensing			
mouth	65 (30.95%)		
Food	57 (27.14%)		
Water	16 (7.62%)		
Patient-owner Reported Compliance with Dispensing			
Instructions.			
Used and dosed correctly	88 (41.9%)		
Have / May have errors	122 (58.1%)		

Table 6: Posology of Nose Relief.

Analysis of Outcomes

The analysis of response time was performed in 131 (62.38%) available records. Of these, 15 (7.14%) respondents replied that their pet had a quick relief (within 1 day) for their pet, while in 21 (10%) pets the relief was within 2 days, and in the majority, 67 (31.9%) pets, the speed of relief was average. Among respondents, 28 (13.33%) felt that the relief was slow, which included 1 respondent who complained that there was no relief for the pet. The estimated extrapolated average time was about 2.5 days from categorical ranking 1-5 and counts per category (Table 7). P (Chi-Sq. for equal Proportions) = 0.000002.

Response to Symptoms			
Quick	15 (7.14%)		
Fast	21 (10%)		
Average	67 (31.9%)		
Slow	28 (13.33%)		
Extrapolated estimated average recovery time	2.5 days		

Table 7: Outcomes of Nose Relief - patient (owner) reported outcomes.

Another set of the medicinal outcomes for efficacy in a patient-reported outcome study is customer satisfaction. In this study, customer satisfaction was estimated from their perception of whether or not the medicine could relieve the symptoms and willingness to recommend. Among the 210 respondents, 205 (97.62%) reported that the medicine relieved the symptoms of their pet, while 5 (2.38%) reported that the medicine was not effective, and one reported that the medicine was partially effective 1 (0.48%) [p < 0.00001]. In all, 123 (58.57%) respondents stated that they would recommend Nose Relief further, while 11 (5.24%) stated that they wouldn't recommend. The data on customer satisfaction was independent of the actual efficacy of the product (McNamar Test p<0.00001). No responses were recorded by 76 (36.19%) respondents. The reason for dissatisfaction of customer dissatisfaction included product composition -Alcohol in Product for 1 (0.48%), Adverse event or Failure of Product for 7 (3.33%), and Packaging or Dosing issues for 2 (0.95%) respondents (Table 8).

Patient Reported Medicinal Efficiency Outcomes			
Success	205 (97.62%)		
Failure	5 (2.38%)		
Partial Relief	1 (0.48%)		
Customer Satisfaction			
Recommended further	123 (58.57%)		
Not Recommended Further	11 (5.24%)		
P (McNamar Test)	< 0.00001		
Reason for Dissatisfaction			
Alcohol in Product	1 (0.48%)		
Adverse Event / Failure of Product	7 (3.33%)		
Packaging / Dosing issues	2 (0.95%)		
P (McNamar Test)	0.2		

Table 8: Efficacy is represented by patient-reported outcomes.

Analysis of Safety

The pets who had received no serious or major adverse events from the medicine. One (0.48%) adverse event reported was constipation, which probably pertained to lack of hydration as per the narrative of the adverse event. In one case (0.48%), there was aggravation of the symptoms for a short while, followed by immediate complete relief. Hence, it was not considered a safety issue (Table 9).

Adverse Events after HomeoPet Nose Relief		
Overall	2 (0.95%)	
Aggravation	1 (0.48%)	
Constipation	1 (0.48%)	
P (Ch-sq. Test for equal proportions)	0	

Table 9: Safety issues from the use of Nose Relief.

An Analysis of various probable factors that may affect the outcomes revealed a relationship between these factors with the actual outcomes. The subsets had a large variability of breed, and hence, analysis by pet type could be misleading. Hence, to validate whether there was a relationship between outcome and the pet type, Analysis of variance (ANOVA) was performed. The Analysis revealed that there was an extremely weak downhill relationship between the pet type and efficacy of the medicine (p<0.0001). The analysis or correlation revealed a statistically significant, moderately high correlation between the frequency of symptoms and efficacy of Nose Relief in relieving the symptoms (R = 0.408096, p < 0.0001). Frequency of daily dose and age had a moderately low relationship with efficacy, in different directions. As age grew, the effect of medicine appears to be reducing, whereas as the dose frequency increases, the efficacy of medicine appears to be increasing. Constancy of symptoms and weight of the animal have no perceivable effect on the efficacy of the medicine (Table 10).

Relationships	R-value	P-value	Test
Dose and Relief	0.163132	0.010289074	Paired t-test
Age and Relief	-0.16968	0	Paired t-test
Weight and Relief	0.084623	0.00000123	Paired t-test
Symptom Constancy and Relief	-0.14991	0.444672483	F Test
Dose Frequency and Relief	0.408096	0	F Test
Animal Type and Relief	0.138103	0.076857993	Paired t-test

Table 10: Analysis of the correlation between various predisposing factors and the Efficacy of Nose Relief.

Discussion

Acute URTI of companion pets has recently emerged as a concern after avian flu and COVID were observed to infect cats and dogs and facilitate spread. While various treatments, including drugs and antibodies, are used as therapy in the current landscape, there is a significant need for further research on URTI. Particularly, pertaining to the plethora of diverse pathogens that limit the specificity of targeted therapies, and hence, there are mixed observations from many studies. Chadwin et al. studied 5 cat holding rooms with 336 animals in a placebo-controlled trial of pheromone. In the study, no difference was observed between the placebo and pheromone 13. This indicates there is an ongoing search for therapies across many different approaches for this often-recurrent condition.

Lopez et al. studied 382 cats, of which 80 had febrile illness due to URTI. Vedaprofen produced rapid temperature and symptom control, pain relief, and control of inflammation [14]. However, the subset analysis of this study does not report the significance levels. Hartmann et al. studied Pradofloxacin for c Felis and Mycoplasma infection. However, the study reported that despite relief of symptoms, the infection might have continued. The two studies of Famciclovir where in which one was used as add-on therapy with doxycycline and in the second it was a single therapy, produced contradicting results. Reinhard et al. in a 22-cat placebo-controlled randomized study reported that Famciclovir was effective for the control of URTI [15]. However, Kopency, et al. did not find a difference between Famciclovir alone and Famciclovir given with Doxycycline in their 24-cat study with a similar follow-up [16]. In a 24-animal study by Friendl, et al., the use of passive antibody therapy has only a transient effect [17]. Most of these studies had a small sample or a subset analysis. Also, a majority of the population was in the cat shelters. The distribution of the study population was focused, if not biased, to cats. The current study was a real-world study that included all animals. Hence, it included 67 animals of which 49 (73.13%) were cats, 17 (25.37%) were dogs and 1 (1.49%) was a mouse. Hence, it is a good sample representative of a real-world population.

In brief, the URTI/URTD of pets has no definitive therapy and has a risk of spread and aggravation with misuse of antimicrobials. Hence, misuse, overuse, and improper use of antimicrobial agents have been common in this condition, leading to secondary bacterial infections [12]. On the contrary, alternative therapies have been extremely effective and focused [18-20]. Many research papers on the effectiveness of the Chinese medicines, Ma Huang Tang, Yinhuapinggan granules, FFYH, and Lonicera japonica Thunb, etc., have demonstrated significant effects on influenza 21 24. Herbal medicines also have efficacy and safety. Echinacea powder on URTI was among one of the additional pieces of evidence of alternative medicine use [21-25]. While there is no animal experience published for URTI / URTD for homeopathic medicines, several publications in homeopathic treatment of human URTI establish the effectiveness of homeopathic medicines therein 26 [16]. The current study was also able to establish the safety and effectiveness of homeopathic medicine "Nose Relief" (Homeopet LLC), based upon the owner-reported outcome survey. The sample was large enough to support a statistically and clinically significant outcome.

Limitations of the study

This was an owner-reported survey. Hence, the evidence level of the study is E2, similar to an observational study. The use of many clinical tools, such as the stress scale and

other validated tools, was not possible in this study. However, the reported outcomes were based upon a comprehensible, transparent, and validated questionnaire.

Conclusion

Nose Relief, a proprietary homeopathic preparation by HomeoPet LLC, was found to be safe and effective for managing upper respiratory tract infections (URTIs) in companion animals. It can be administered orally—directly, in food, or water-with dosing 1 to 3 times daily generally sufficient. More frequent dosing was well tolerated and may be beneficial in acute or chronic nasal and upper respiratory conditions, offering a novel therapeutic option in veterinary care

Ethical Conduct

The study was conducted in compliance with good clinical practice and ethical guidelines.

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