



User Response Survey of Clinical Outcomes of Urinary Tract Infection of Companion Pets treated with Homeopet UTI – A Combination Homeopathic Medicine

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Abstract

Background: Urinary tract disorders are common in companion animals, while antimicrobial resistance and adverse effects associated with antibiotics encourage investigation of non-antibiotic options. This study assessed owner-reported clinical outcomes, product use, and satisfaction following administration of Homeopet UTI, a combination homeopathic medicine.

Methods: A web-based, facilitator-driven survey collected demographic, dosing, symptom, response-time, effectiveness, and recommendation data from pet owners. Respondent identity and duplicate entries were monitored through unique identifiers, collector details, and IP addresses. Of the 165 owners representing 166 pets, 113 owners completed the survey. Of these 113 owners, one owner provided data for two pets, resulting in a total of 114 pets with completed data available for analysis. Of these, 112 were cats and two were dogs.

Results: The most frequently reported baseline features were general urinary tract problems (67.54%), straining during urination (39.47%), oliguria (33.33%), polyuria (30.70%), strong-smelling urine (26.32%), and stress-related urination (18.42%). Most owners administered the product in food (47.37%) or directly into the mouth (41.23%); 42.11% dosed three times daily. Heat-map and factorial analyses indicated the strongest reported improvement for general urinary tract problems and straining, with weaker outcomes for strong-smelling urine and stress-related urination. Eighty-five respondents (74.56%) described the response as average or faster. Overall, 113 owners stated that the product worked, and 112 would recommend it.

Conclusion: This owner-response survey suggests high perceived effectiveness, satisfaction, and practical acceptability of Homeopet UTI in pets with urinary symptoms. However, the uncontrolled, self-reported design, symptom inconsistencies, concurrent or previous treatments, and absence of laboratory confirmation limit causal inference. Controlled veterinary studies using standardized diagnoses, objective outcomes, and safety monitoring are warranted before definitive efficacy conclusions are drawn.

Keywords: Companion Animals; Urinary Tract Disorders; Homeopathy; Owner-Reported Outcomes; Veterinary Survey; Cats; Antimicrobial Alternatives; Urinary Tract Infection; UTI

Abbreviations: UTI: Urinary Tract Infections; CAM: Complementary and Alternative Medicine; AMR: Anti-Microbial Resistance

Introduction

Urinary tract infections (UTIs) and its recurrence have high prevalence in companion pets, particularly dogs and cats. The most common causative organisms are *Escherichia coli*, *Staphylococcus spp.*, *Enterococcus spp.*, and *Klebsiella spp* [1,2]. These bacteria are known to exhibit increasing antibiotic resistance, making conventional antibiotic treatments less effective [3,4]. Besides being significant discomfort for the animal, the incidence of associated serious complications including pyelonephritis and urolithiasis is also concerning¹. The typical symptoms of UTIs in pets include increased frequency of urination, straining to urinate, blood in the urine, leaking urine outside the pot, and probably licking the genital area [5,6]. Clinical signs of a successful treatment include resolution of these symptoms [7,8].

Conventional treatments for pet UTIs typically involve the use of antibiotics. However, use of antibiotics is known to be associated with several adverse effects and contribute to the growing global problem of antibiotic resistance [9,10]. Hence, complementary and alternative medicine (CAM) including homeopathy is progressively being preferred as a therapy of choice for common ailments of the pets by the pet owners and even veterinarians, as represented by a recent study⁴. Homeopathic medicines are among the most preferred CAM options. While conventionally, scientific evidence on efficacy of homeopathy is intentionally debated, positive experiences of pet owners and veterinarians on homeopathy in UTIs and other conditions of companion animals have been reported through various publications of large sample studies [11-15].

Like the patient reported outcomes or Self-reported Clinical Outcomes in the human medicines is now a standard practice in clinical studies, owner reported outcomes on surveys are picking up as a method in veterinary science [16-24]. By surveying pet owners, this study investigated effectiveness of homeopathic medicines in real-world.

Materials and Methods

Survey Framework

This study was a web-based facilitator driven user-response survey by the pet owners, who used Homeopet UTI Homeopathic Combination Medicine, indicated for UTI of small pets. All the respondents were asked to provide an informed consent on web before starting the survey. Each respondent was assigned a unique Respondent ID

after signing the consent statement. The IP Address of the computer from which the survey was responded was captured in the background. In combination with the ID of facilitator (Collector ID), the IP address of the computer from where responses were generated and was used for identification of the duplicate respondents and as further confirmation of the data traceability.

This online questionnaire is based upon a validated template used in previous studies. A provision for compensating the efforts of respondents to the survey was supported by Homeopet through unconditional educational grant. The respondents were remunerated for only if they completed the survey. The information of remuneration was disclosed only after the end of survey to retain unbiased, uninfluenced, true and honest responses. The assurance of genuineness of the respondents was achieved through reconciliation of information of source of the medicine. In addition, the respondents were consented for being contacted and when required, to crosscheck required information of being unique genuine user.

Question No.	Question Text
i	Respondent ID (Auto generated)
ii	Collector ID (Auto generated from the link sharing)
iii	Start Date and time (Auto captured)
iv	End Date and time (Auto captured)
v	IP Address (Auto captured)
vi	Email Address (disabled)
vii	First Name (disabled)
viii	Last Name (disabled)
1	Pet Type
2	Pet Breed
3	Pet Gender
4	Is your pet neutered?
5	Pet Age
6	Pet Weight in lbs
7	Response time to 'UTI+': Fast (5) – Slow (1)
8	How dosed?
9	How many times dosed daily?
10	In your opinion did 'UTI+' work?
11	Would you recommend 'UTI+'?
12	Does your pet go to the veterinarian?

Table 1: The Survey Framework.

The survey was conducted using twelve basic questions (Table 1) of which six (Question 1 to 6) were related with the demographic characterization, two (Question 8 and 9) were related with posology and four (Question 7, 8, 10 and 11) were related with effect of medicine and user satisfaction. A question (Question 12) was added to confirm if the pet was examined by the veterinary physician to check that UI was medically identified. In addition, there were two questions related with the symptoms of UTI. The first question collected the data of symptoms presence and severity at baseline and second question was symptom cure or severity after the treatment. These questions had the symptoms of UTI+ listed thereunder.

Response to all questions was mandatory, however, intermediate saving after completion of the demographic procedure was enabled to ensure that no data is lost during transit or if the respondents were willing to complete the survey later.

The Investigational Medicine – Homeopet UTI

Homeopet UTI is the investigational product is homeopathic product based on a combination of hyper dilute highly succussed potentized ingredients in an inactive base of ethanol and water. The Investigational product contains no active chemical ingredients thus activity is in conventional terms cannot be expected. However, its efficacy and safety can be clearly observed clinically by understanding the resolution of clinical features of the medicines or reducing their severity.

Results

Of the 165 owners representing 166 pets, 113 owners completed the survey. Of these 113 owners, one owner provided data for two pets, resulting in a total of 114 pets with completed data available for analysis. Of these, 112 were cats and two were dogs. The record of all respondent disposition was recorded with the STROBE-vet method to maintain data integrity and bias-free study reporting (Figure 1).

Of the 112 cat, 53 (47.32%) were males and 59 (52.67%) females, 104 (92.86%) were neutered. Mean age was 8.25 ± 4.66 years and weight was 12.64 ± 7.73 pounds. Between the two dogs, one was male and another was female, both neutered. The mean age was 6 years and weight was 62.5 pounds (Table 2). This in all, there were 114 animals, 52.63% females and 92.98% neutered $P=0.3$.

Among the reported comorbidities, 4(3.51%) pets had obesity, 3 (2.63%) had Diabetes, while excretory system

diseases reported as chronic kidney disease and Renal Calculus, was in 1 case each. Remarkably, this group had several individual endocrine conditions besides diabetes and obesity, including ovarian agenesis, hypothyroidism, Cushing's Syndrome and pancreatitis ($P=0.02$), (Table 3). While there is little relevance of analyzing the data under these subsets due to small numbers or unique patients, there is a possible pathophysiological impediment on the outcome of the group as a whole.

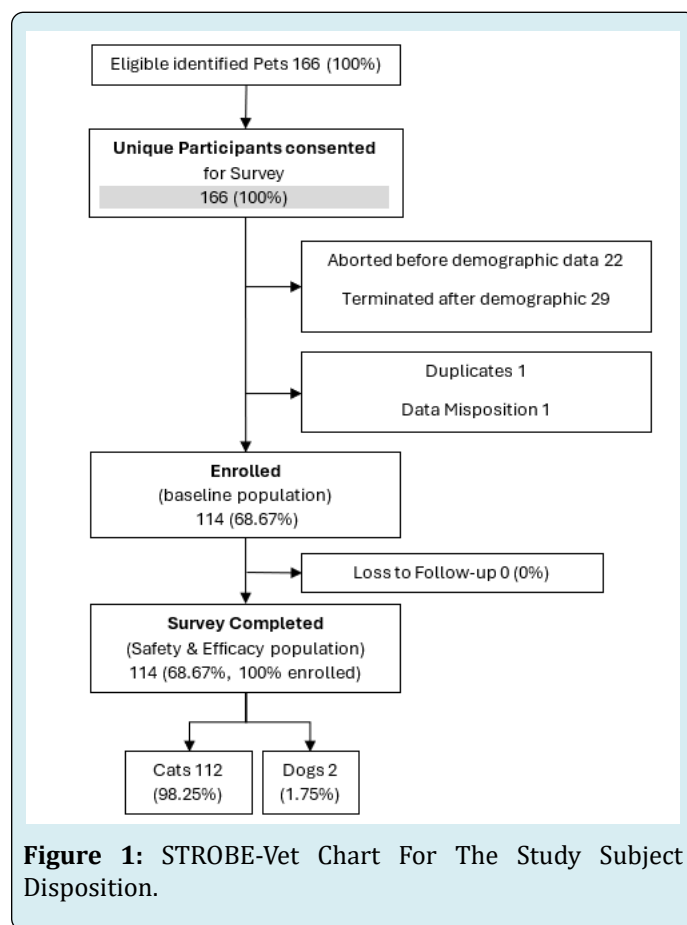


Figure 1: STROBE-Vet Chart For The Study Subject Disposition.

Demographics		
	Cat	Dog
N	112	2
Age	8.29 ± 4.66	6
Weight	11.75 ± 7.74	62.5
Male	53 (47.32%)	1 (50%)
Female	59 (52.67%)	1 (50%)
Neutered	104 (92.85%)	2 (100%)

Table 2: Demographics.

Comorbidities		
	N	%
Chronic Kidney Disease	1	0.88
Congenital ovarian agenesis	1	0.88
Cushing's Syndrome	1	0.88
Diabetes	3	2.63
Dehydration	1	0.88
Diarrhea	1	0.88
IBD	1	0.88
Megacolon	1	0.88
Hyperthyroidism	1	0.88
Miliary Dermatitis	1	0.88
Obesity	4	3.51
Pancreatitis	1	0.88
Renal Calculus	1	0.88
Mood Swings	1	0.88
Bleeding Diathesis	1	0.88

Table 3: Comorbidities and Medical History.

Among the Previous Treatments, 12 (10.53%) pets were on current Antibiotic Medication Nutraceuticals specific to UTI were given to 5 (4.39%), other homeopathic Medicines were being given to 4 (3.51%) and other Homeopet Products were given to 19 (16.67%) pets, $P < 0.001$, (Table 4).

Previous Treatment History		
Medication	n	%
Antibiotic	12	10.53
Nutraceutical	5	4.39
Other homeopathic Medicine	4	3.51
Other Homeopet Products	19	16.67
unknown	2	1.75

Table 4: Previous Medication and Treatment Response History.

Homeopet UTI was dispensed by the owners in different forms. The medicine was given in water to 13 (11.4%), in food to 47 (41.23%) while was directly dropped in mouth of 54 (47.37%) pets. Most (48 (42.11%)) pets received 3 doses per day and close to one third (34 (29.82%)) received

2 doses per day, while 19 (16.67%) received minimal dose of 1 per day and 13 (11.4%) received four or more doses a day (Table 5).

Posology for Homeopet UTI		
	Median	Q1,Q3
Doses per day	2	[2,3]
Frequency / repetition	N	%
Once a day	19	16.67
Twice a day	34	29.82
Thrice a day	48	42.11
Four times a day	3	2.63
Five times a day	1	0.88
More than 5 times a day	9	7.89
Dispensing details	N	%
Given in Water	13	11.4
Given in food	47	41.23
Given by direct inoculation	54	47.37

Table 5: Posology of Homeopet UTI in the Study.

The presenting symptoms analyzed for disease response observation included General Urinary tract issues 77 (67.54%), Straining while peeing 45 (39.47%), Incontinence 12 (10.53%), Strong smelling urine 30 (26.32%), Stress related urination 21 (18.42%), Polyurea 35 (30.7%), Oliguria 38 (33.33%). The main associated symptoms included Urinating outside Litterbox 10 (8.77%) and Hematuria 4 (3.51%). Struvite crystals were associated presenting symptoms in 2 (1.75%) while Dribbling, Dysuria (meowing during micturition), Psychological Stress, and Urethritis were present in one pet each. In 67 (58.77%) pet the symptoms were Intermittent while in 47 (41.23%) the symptoms were constant (Table 6).

In the symptomatology analysis, a trend was observed that several symptoms which were not reported in the presenting symptoms for baseline, were response as resolved by many owners (Table 6). This issue was identified by sample rechecks and it was observed that in baseline, the symptoms of many pets were sporadically different and there were different symptoms dominating the disease clinical picture. However, during the course of disease and treatment, almost all primary symptoms appeared in the pet, and they got cured.

Presenting Clinical Features				
	Baseline respondents		Respondents for grading	
Primary Symptoms	N	%	N	%
General Urinary tract issues	77	67.54	109	95.61
Straining while peeing	45	39.47	101	88.6
Incontinence	12	10.53	0	0
Strong smelling urine	30	26.32	91	79.82
Stress related urination	21	18.42	86	75.44
Polyurea	35	30.7	98	85.96
Oliguria	38	33.33	98	85.96
Other	20	17.54	8	7.02
Dribbling	1	0.88	1	0.88
Dysuria (meowing during micturition)	1	0.88	1	0.88
Hematuria	4	3.51	2	1.75
Psychological Stress	1	0.88	0 ^a	0
Struvite crystals	2	1.75	0 ^a	0
Urethritis	1	0.88	0 ^a	0
Urinating outside Litterbox	10	8.77	2	1.75
Prophylactic or adjuvant use				
Promote a healthy upper urinary tract	30	26.32	30	26.32
Promote a healthy lower urinary tract	32	28.07	32	28.07
Symptom Intermittency				
Intermittent	67	58.77		
Constant	47	41.23		
a – no response is considered as failure to resolve for next level analysis				

Table 6: Clinical Presentation by Indication.
P <0.001

Because of the disparity between presenting symptoms and resolved symptoms, traditional method of statistics could not be applied. Hence, an indirect comparative method of independent time-point analysis on heat map and count and score factorial analysis with matrix division was observed (Table 7,8). The follow-up instance heat map revealed that symptoms like General Urinary tract issues, straining while peeing, Polyurea, Oliguria were effectively resolved with Homeopet UTI, while Strong smelling urine and Stress related urination were not completely relieved in the given time; P =0.006, (Table 7). A further confirmatory

analysis was performed to understand the relative position of the symptoms between presentation and resolution using the factorial relationship analysis, followed by matrix division and factorial weighted average. The analysis includes the scores and counts of individual features at follow up as compared with the scores and counts at baseline. The general urinary tract issues and straining while peeing scored the most satisfactory scores while strong smelling urine, stress related urination were still the lowest scorers even in indirect comparison; p<0.0001, (Table 8).

Resolution of clinical presentation							
Primary Symptoms - Heatmap	5	4	3	2	1	0	<0
General Urinary tract issues	44	30	10	5	3	15	2
Straining while peeing	28	23	9	2	7	29	3
Strong smelling urine	14	13	15	9	6	31	3
Stress related urination	15	11	8	4	5	41	2
Polyurea	24	17	10	7	6	33	1
Oliguria	31	12	5	10	3	35	2

Table 7: Clinical Outcomes as Per User Responses. P =0.006

Resolution of clinical presentation		
Primary Symptoms	Factorial Score	Weighted factorial score
General Urinary tract issues	0.67	3.36
Straining while peeing	0.47	2.36
Strong smelling urine	0.35	1.73
Stress related urination	0.26	1.31
Polyurea	0.42	2.08
Oliguria	0.42	2.08
Other Symptoms		
Dribbling	0.22	5
Dysuria (meowing during micturition)	0.22	5
Hematuria	0.44	2.5
Psychological Stress	0	0
Struvite crystals	0.22	2.5
Urethritis	0	0
Urinating outside Litterbox	0.44	1

Table 8: Factorial Analysis of the Responses. P <0.001

Effect of Medicine		
Response Time Rank	Count	Percentage
0 (Immediate)	25	21.23
1 (Quick)	43	38.05
2 (Fast)	26	23.01
3 (Average)	16	14.16
4 (Late)	2	1.76
5 (Very Late)	2	1.76
Whether medicine worked (owner response)		
Yes	112	98.25
No	2	1.75
User Satisfaction (Will you recommend to others)		
Yes	113	99.12
No	1	0.88

Table 9: User's Overall Analysis of Response and User Satisfaction. P <0.001

In all, 85 (74.56%) respondents reported the response time to be average or earlier, while 25 (21.93%) reported that there was an immediate effect. The ranking was also

observed to be influenced by how the pet responded to any previous treatment (Figure 2, Table 9,10).

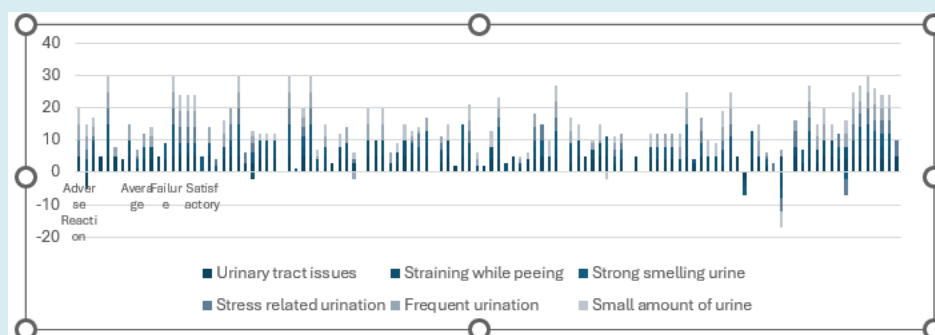


Figure 2: Comb Flair Analysis of Responses to Clinical Presentation on Scale of 1-5, for Data-Normalcy, Random Distribution, and Distribution Frequency and Span. Most of the Data Demonstrates High Satisfaction on Most Parameters.

Previous medication status	Count	Corresponding Mean	Analysis of correlation	Value
Adverse reaction	8	3.625	$R_{\text{Prior Treatment Only}}$	-0.7904
Failure	5	4	R_{all}	-0.5163
Average	4	2.967	F_{Mean}	0.8865
Satisfactory	22	3.045	$P_{\text{F-test}}$	<0.00001
No previous medication	75	2.387		

Table 10: Relationship Of Ranking Assignment with Previous Medication Effect.

Discussion

This survey was among the critical studies of patient response to medicine for urinary tract infection of the domestic pets. UTI of domestic pets is among the conditions that can transfer from animals to humans and can lead to other global medical issues. Veterinary use of antibiotics for UTI lacks significant primary clinical evidence and is mainly an extrapolation of human clinical studies [25-32]. Both these issues, in global healthcare translate into an emerging medical problem of Antimicrobial Resistance (AMR), of which 20–70% is suspected to be of veterinary origin, varying by regions [25]. Outcomes of this study are indicative of merit of non-antibiotic treatment, especially the homeopathic medicines in the UTI of domestic animals. In this study, majority owners, approximately three fourth of the population, who responded to this survey, agreed on a positive effect of Homeopet UTI+ in a quick or average time relief in the Urinary Tract Symptoms. Approximately 44% of the reported clinical features were relied completely (Rank 4-5).

Ling, et al. described UTIs as a common indication for antimicrobial use in veterinary practice, while Weese, et al.

emphasized that not all cases presenting with lower urinary tract signs are bacterial in origin and may not always require antimicrobial therapy. Jessen LR, et al. reported a major gap in veterinary evidence is the lack of standardized treatment durations [3]. Yet, conventional treatment of UTI in pets mainly relies on antibiotics [30]. While the antibiotic regimens require stringent compliances and careful management, non-compliance and extended use both are among commonly reported issues [32]. Another critical problem rising from repetitive and prolonged use of antibiotics is cost of treatment, which may also remain a contributor of non-compliance with the therapy [2]. Hence, a need for multidimensional consideration of treatment options in UTI requires research beyond antibiotic dependency. Among various options, the pet owners are adopting complementary therapy options for various ailments of their pets, including UTI. Chou HI, et al. in their experimental study in 12 dogs demonstrated effectiveness of cranberry extract in preventing recurrent UTI in dogs [27]. Segev, G et al. in a 34 dogs' study demonstrated non-inferiority of biotherapeutic ASB E. coli 212 as compared to antibiotic therapy [28].

Hamre, et al. demonstrated effectiveness and replicability of homeopathic medicine in various conditions,

with replicability from meta-analysis of various studies [29]. Farrington, et al. reported acceptable safety, efficacy and user satisfaction on a postmarketing user-response-based survey of homeopathic medicine for canine incontinence [31].

Conzemius and Evans demonstrated that caregiver-reported outcomes in veterinary medicine reflect meaningful clinical changes, particularly in conditions where objective endpoints are difficult to measure in routine practice. The user-reported survey of the homeopathic product Homeopet UTI for Domestic Pets with urinary symptoms found very high owner-reported “success” rates. For example, 98% of respondents said the medicine “worked” in their cat and 99% would recommend it. Most owners (~60%) observed symptom improvement “quickly” or “fast” (≤ 2 days) after starting the remedy. Such high symptom-resolution rates suggest strong owner belief in efficacy.

Nonetheless, the survey does highlight that many owners are using and reporting good results with homeopathic UTIs support, Meeting demand unmet by standard care. For clinicians, these data suggest that some clients will use Homeopet UTI and may perceive improvements.

Limitations

This study was a survey-based study, hence, the outcomes are less standardized than in a clinical study. However, as this was an independent survey conducted by a person independent of the sponsor and was completely unbiased from the product effect, the reports were unbiased. There is a scope for improvement towards more scientifically supported evidence such as laboratory tests from well-designed studies.

Conclusion

This study demonstrates safety and efficacy of Homeopet UTI, a patented combination homeopathic medicine, in treatment of urinary tract infection of the domestic pets, as reported by the owners. It also provides real-world information about how the product is given, how often it is used, and which symptoms owners noticed improving the most. This study indicates feasibility for conduct of further research on this product.

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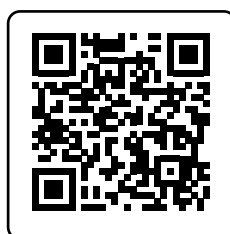
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