



## Research Article

### A PILOT STUDY ON THE EFFICACY OF SIDDHA MEDICINE *SEENTHIL SARKARAI* IN THE MANAGEMENT OF *MOOTHIRAKIRICHARAM* (URINARY TRACT INFECTION)

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#### ABSTRACT

**Objective:** The present pilot study was designed to evaluate the efficacy of *Seenthil sarkarai*, a Classical Siddha medicine in *Moothirakiricharam* (Urinary Tract Infection) patients.

**Method:** This study was approved by IEC and registered in Clinical Trial Registry of India and was conducted at the National Institute of Siddha, Tambaram, Chennai, India. The investigator recruited 20 patients of both male and female with an inclusion and exclusion criteria. All the patients were treated with *Seenthil Sarkarai* at the dose level of 2 grams two times a day with warm water for 21 days. Dietary regimen was advised for the patients. Study outcome was studied with negative Urine culture and also based on the improvement in the reduction of Burning micturition, Frequency of micturition, Dysuria with fever, Foul smelling urine.

**Results:** The symptoms such as burning micturition, persistent urge to urinate, foul smelling urine, and presence of bacteriuria reduced markedly within 21 days of duration. Out of 20 patients, 12 patients were completely relieved from the compliance of UTI with negative Urine culture. The symptoms of UTI were markedly reduced in remaining 8 patients. There were no adverse effect reported during the study and no recurrence of UTI was noticed in 12 patients who were completely cured.

**Conclusion:** Results suggest that the trial drug *Seenthil Sarkarai* is effective and safe for the management of *Moothirakiricharam* (UTI) and in alleviating recurrences.

**KEYWORDS:** *Seenthil sarkarai*, Siddha medicine, *Moothira Kiricharam*.

#### INTRODUCTION

Urinary tract infection (UTI) (*Moothira-kiricharam*) is considered to be the most common and frequent bacterial infection among all age groups. Urinary tract infection may be defined as the presence of pathogens (microorganisms) in any part of the urinary system. Women are significantly more likely to experience UTI than in men. Almost 50-60 % women will experience UTI during their lifetime. Short urethra and behavioral changes such as ignoring or resisting the urge to urinate, usage of spermicide or diaphragm, stress, poor hygiene are tend to be the risk factors for women. *Escherichia coli* is the most common infecting organism and *Proteus*, *Klebsiella*, *Citrobacter*, *Enterobacter*, and *Pseudomonas* spp are the other gram-negative microorganisms causing UTI. Gram-positive pathogens, such as *Enterococcus fecalis*, *Staphylococcus saprophyticus*, and group B streptococci can also cause urinary tract infections<sup>1</sup>.

*Seenthil Sarkarai* is a traditionally extracted one which is prepared from *Tinospora cordifolia*. In Siddha literature, this medicine is indicated for Cystitis which is the main symptom in Urinary tract infection. One of the main reasons for the patients to choose Siddha medicine is increased bacterial resistance to antibiotics. In Siddha system of medicine the disease pathology mainly relies upon the variations of Three *Dhoshas* viz. *Vatham*, *Pitham*, *Kabam*<sup>2</sup>. In Siddha a large number of drugs have been used for the management of UTI and to prevent its recurrence. The present clinical study hypothesis is that *Seenthil Sarkarai* is effective in the prophylaxis of urinary tract infection (*Moothirakiricharam*).

#### Urinary Tract Infection & Siddha Philosophy

The symptoms of UTI are scanty or persistent urge to urinate, burning micturition, dysuria, and sometimes hematuria, etc. According to Siddha Philosophy these symptoms are due to derangements in the *Pitham* and *Kapham* dhoshas<sup>3</sup>. The only taste

that subsides both the aggravated *Pitham* and *Kapham dhoshas* is the Bitter taste. So the selected drug *Seenthil Sarkarai* (made by *Tinospora cordifolia*-*Seenthil* stem) can soothe both the aggravated *Pitham* and *Kapham dhoshas* due to its bitter taste.<sup>4</sup>

#### **Seenthil Sarkarai – Method of Preparation<sup>5</sup>**



**Fig 1: Seenthil Sarkarai**

Clean the *Seenthil* stem (*Tinospora cordifolia*) and crush it. Soak the crushed drug in water and stir well. Next day remove the coarse part of the drug from the water. Keep the water in the vessel under the sunlight for two to three hours until sedimentation occurs. Pour out the clear supernatant water and collect the sediment. Add some more water to this and remove the remaining coarse powder. Allow the starch to settle down and collect it and then make it to dry.

**Dosage & Duration:** 2 gm twice a day after food with warm water for 21 days. (Fig 1)

It is indicated for splenomegaly, jaundice, cold, cough, vomiting, cystitis and urinary tract infection.<sup>6</sup>

#### **MATERIALS AND METHODS**

This pilot study was conducted in Ayothidoss Pandithar Hospital in the OPD of Gunapadam, National Institute of Siddha, Tambaram Sanatorium, Chennai-47 in accordance with standard protocol after obtaining the approval of the Institutional Ethical Committee (IEC) (NIS/IEC/10/2016-17/12-20.05.2016). The study was registered retrospectively in the Clinical Trial Registry of India (CTRI Reg No: CTRI/2017/05/008558). Before enrollment into the study the informed consent was obtained from the patients.

#### **Plan of Study**

Twenty patients of either sex, of age groups between 14 & 60 years of age with complaints like difficulty in micturition, burning micturition, persistent urge to urinate, foul smelling urine etc., were recruited from the outpatient department of the Department of Gunapadam, Ayothidoss Pandithar Hospital, National Institute of Siddha and were enrolled in this study after proper clinical and physical examinations as per the screening and selection proforma. Complete clinical examinations,

haematological investigations, routine and microscopic examinations of urine, culture and sensitivity test of urine were done on each patient. The presence of infection was confirmed by urine culture using a 'mid-stream' urine sample.

In this study, the patients with UTI who suffered from medical renal disease, pregnancy, any serious systemic illness, other infectious diseases like AIDS, tuberculosis were excluded.

The patients were instructed and explained the merits and modalities of treatment. Antibiotic and alkalisng drugs, which are commonly used in UTI, were withdrawn. *Seenthil Sarkarai* was given at a dose of 2 grams twice a day after food for 21 days. The patients were assessed weekly on the basis of their symptoms and clinical findings for 21 days. All the laboratory investigations were also done before and after the treatment to evaluate the clinical efficacy of *Seenthil Sarkarai*.

#### **Observations**

**Age incidence:** Twenty cases of UTI were allocated in which the youngest patient was 21 years old while the oldest was 60 years old.

**Sex incidence:** In the present clinical study, the majority of patients were female (95%) and only 1 patient (5%) was male.

**Culture study of urine:** Bacteriuria was found in 100% cases showing three different types of micro-organisms. *E. coli* was the most common micro-organism present in 60 % cases. During the course of therapy, bacterial count gradually fell and after 21 days of treatment, bacteriuria was persistent only in 8 cases and in 12 cases, urine was found sterile. (Table 1)

#### **Subjective and objective parameters**

20 patients complained of burning micturition, 17 patients had frequency of urination, 8 patients had severe dysuria with mild fever and 12 patients complained of foul smelling urine as a presenting symptom (Table II). Urine culture was done in all the 20 patients before starting the treatment. The culture was positive in 100% of patients. Out of these 20 patients, 12 patients had *E. coli*, 7 patients had *Klebsiella* and 1 patient had *Citrobacter* sp.

#### **Study Outcome**

Study outcome was studied based on the urine culture reports, improvement in the reduction of clinical symptoms and prevention of recurrence of Urinary tract infection for at least 3 months.

**Table 1: Trial drug *Seenthil Sarkarai* was recorded after every seven days**

S.No	Age	Sex	Before Treatment	After Treatment
			Colony count CFU/ml	Colony count CFU/ml
1	60	F	>1,00,000	1,000
2	29	F	1,00,000	70,000
3	48	F	>1,00,000	>1,00,000
4	41	F	50,000	10,000
5	21	F	70,000	60,000
6	47	F	30,000	1000
7	42	F	>1,00,000	>1,00,000
8	41	F	>1,00,000	60,000
9	48	F	1,00,000	No Growth
10	34	F	10,000	No Growth
11	53	F	1,00,000	No Growth
12	50	F	1,00,000	No Growth
13	44	F	70,000	No Growth
14	55	F	25,000	No Growth
15	58	F	>1,00,000	No Growth
16	49	F	80,000	No Growth
17	55	F	1,00,000	No Growth
18	47	M	15,000	No Growth
19	27	F	>1,00,000	No Growth
20	49	F	>1,00,000	No Growth

The response to the trial drug *Seenthil Sarkarai* was recorded after every seven days. There was marked relief in burning micturition (90%) and frequency of micturition (82.35%). 11 out of 12 patients relieved from foul smelling urine (91.67%), whereas all the patients had complete relief of dysuria with mild fever after 21 days. (Table 2)

**Table 2: Clinical Response after 21 days**

Symptoms	No. of patients	Relief	
		No. of patients	%
Burning micturition	20	18	90
Frequency of micturition	17	14	82.35
Dysuria with mild fever	8	8	100
Foul smelling urine	12	11	91.67

The causative pathogen citrobacter sp. was completely eliminated, whereas 8 of 12 cases of *Escherichia coli* and 3 of 7 cases of *Klebsiella* showed negative culture. It also suggest that the drug *Seenthil Sarkarai* is specifically sensitive to *Escherichia coli*, *Klebsiella*, *citrobacter sp.* (Table 3)

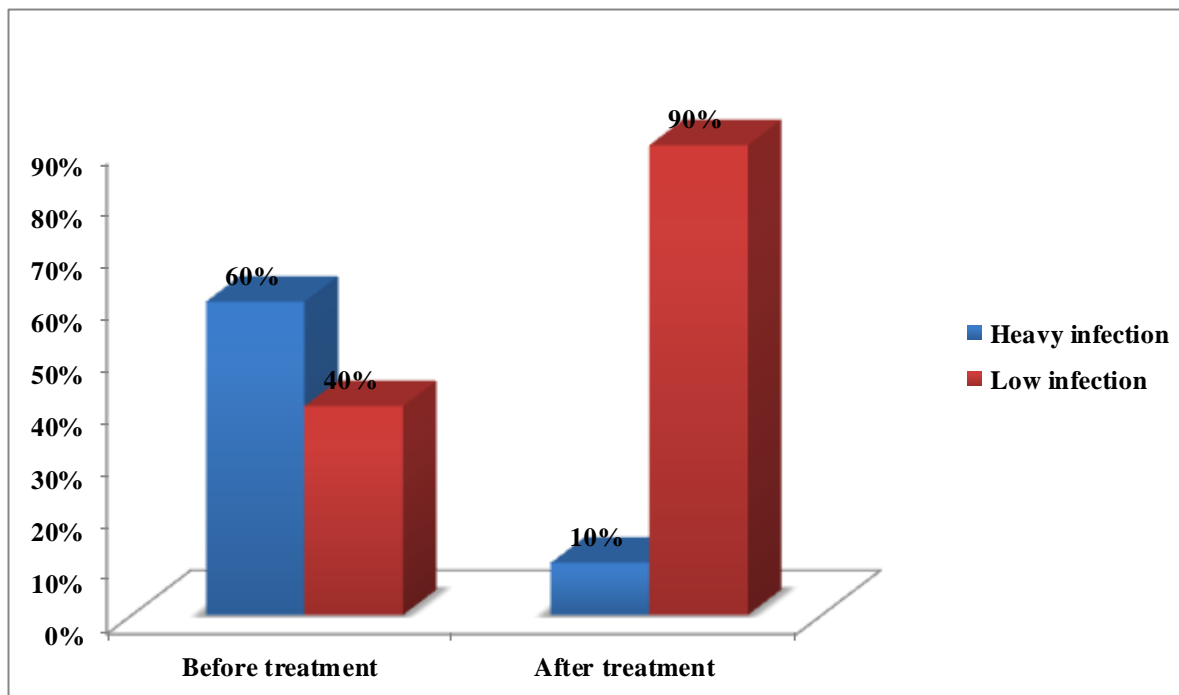
**Table 3: Effect of *Seenthil Sarkarai* on the pathogens**

Organism	Culture positive before treatment	Culture negative after treatment	
		No.	%
<i>E. coli</i>	12	8	66.67
<i>Klebsiella</i>	7	3	42.86
<i>Citrobacter sp</i>	1	1	100

## RESULTS

Clinical symptoms such as burning micturition, frequency of micturition, foul smelling urine, dysuria with mild fever were relieved during the treatment. On completion of treatment, no drug dependency and side effects were observed. There was no recurrence of UTI in 4 patients who were completely cured, during the follow up period of up to 3 months and in all other patients the symptoms of UTI and bacterial load was markedly reduced.

### Statistical Data



### Statistical data

Before treatment	After treatment	
	Heavy Infection	Low infection
Heavy infection	2	10
Low Infection	0	8

The statistical data was evaluated using McNemar Test.

Statistics <sup>a</sup>

	Before & after treatment
N	20
Exact Sig. (2-tailed)	.002 <sup>b</sup>

- Since the p value is less than 0.05, which is statistically significant ( $p < 0.02$ ), the finding of the study showed that the *Seenthil Sarkarai* was effective among the UTI Patients.

## DISCUSSION

The cost effective and highly efficient drug which has been mentioned in Classical Siddha literature for the management of *Moothira kiricharam* (UTI) was used for the trial. A total number of 30 cases were screened and 20 cases was recruited and given treatment in the Gunapadam OPD. After completion of the study, the patients were advised to visit the OPD of Gunapadam for 3 month for follow up. The results obtained provide promising good result. Among 20 cases, 60% shows excellent improvement and 40% shows moderate

improvement. These results were based completely on the urine culture test and clinical improvements.

## CONCLUSION

The trial drug *Seenthil Sarkarai* has been quite effective in controlling and relieving clinical symptoms of *Moothira kiricharam* (UTI) significantly, which is observed clinically and statistically. The present study also demonstrated antimicrobial efficacy of the drug against the common pathogens *Escherichia coli*, *Klebsiella*, *citrobacter sp.* At the end of the study, the associated symptoms like burning

micturition, frequency of micturition relieved significantly and urine pus cells and epithelial cells responded well with *Seenthil Sarkarai*. It does not show any toxic effect during the course of therapy. Hence, it can be concluded that *Seenthil Sarkarai* can be used safely for effective control of *Moothira kiricharam* (UTI).

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