ejpmr, 2025, 12(4), 624-629

EUROPEAN JOURNAL OF PHARMACEUTICAL AND MEDICAL RESEARCH

www.ejpmr.com

SJIF Impact Factor 7.065

Case Study

ISSN 2394-3211

EJPMR

MANAGING RECURRENT URINARY TRACT INFECTIONS WITH HERBAL THERAPY: A PILOT CASE STUDY

Mohd. Faizan[1]*, Yusra Qureshi[2] and Naseem Akhtar Khan[3]

[*1]MD Scholar, Moalajat A & U Tibbia, College, Karol Bagh, New Delhi, India.
[2]MD Scholar, Dept. of Amraz e Niswan wa Qabalat, NIUM, Bengaluru, Karnataka, India.
[3]Professor Naseem Akhtar Khan Head, Department of Moalajat A &U Tibbia College Karol Bagh.

***Corresponding Author: Mohd. Faizan**

MD Scholar, Moalajat A & U Tibbia, College, Karol Bagh, New Delhi, India.

Article Received on 08/03/2025 **Article Revised on 22/03/2025** **Article Accepted on 02/04/2025**

ABSTRACT

UTIs are a common health issue typically treated with antibiotics. However, the growing antibiotic resistance of Escherichia coli, responsible for 75% of UTI cases, presents a major challenge. This increasing resistance highlights the need for alternative treatments, with herbal medicine emerging as a promising option. UTIs (Ṭa'diya Majra-i-Bawl) are managed using plant-based remedies known for their antiseptic (Da'fe Ufoonat), anti-inflammatory (Muhallilat), and diuretic (Mudirrat) properties. Polyherbal formulations combining these medicinal herbs are believed to be effective against Escherichia coli infections. This case study aimed to evaluate the therapeutic potential of an Unani polyherbal formulation as a natural and effective UTI remedy. It was conducted on a patient with UTI symptoms, who was treated with a formulation containing 50% hydro-alcoholic extracts of Karonda (Carissa carandas), Khar-e-Khasak (Tribulus terrestris), Mako (Solanum nigrum), Beekh-e-Kasni (Cichorium intybus), Bhumi Amla (Phyllanthus niruri), and Chirayata Shireen (Swertia chirata). The patient received two capsules of 500 mg and Qurs-e-Kafoor (two tablets) twice daily for 21 days. Post-treatment assessment showed significant improvement in symptoms and urine analysis, with no recurrence observed during follow-up. The Unani formulation proved highly effective for UTI treatment, was well tolerated, and caused no adverse effects.

KEYWORDS: UTIs, Ṭa'diya Majra-i-Bawl, Qurs-e-Kafoor, Da'fe Ufoonat, Muhallilat, Unani polyherbal formulation.

INTRODUCTION

Urinary tract infections (UTIs) are among the most common infectious diseases worldwide, affecting approximately 150 million people annually. These infections can occur in the urethra (urethritis), bladder (cystitis), or kidneys (pyelonephritis) and are associated with significant morbidity and high medical costs. For instance, the economic burden of recurrent UTIs in the United States alone is estimated to exceed $5 billion each year. While symptoms vary depending on the infection site, UTIs can negatively impact both intimate and social relationships, ultimately reducing patients' quality of life.[1] UTIs are 2nd most common infectious disease, comprising a range of conditions such as asymptomatic bacteriuria (ASB), cystitis, prostatitis, and pyelonephritis. They result from bacterial multiplication in urinary tract, with significant bacteriuria defined as more than 10^5 organisms per milliliter in a midstream urine (MSU) sample. UTIs are classified as acute or chronic (urethritis or cystitis), symptomatic or asymptomatic, complicated or uncomplicated, and community- or hospital-acquired.[2] Clinical features are Urgency and frequency, Dysuria, Suprapubic pain before and after urination, Strangury, Cloudy, foul-smelling urine, and Visible or non-visible hematuria. Other systemic symptoms are generally mild or absent. However, acute pyelonephritis can occur if the infection spreads to the upper urinary tract, causing Fever, chills, vomiting, Low blood pressure, Loin pain, tenderness, and guarding. Only 30% of acute pyelonephritis cases present with cystitis or urethritis symptoms.[2,3] Females, particularly those who are postmenopausal, individuals engaging in new sexual activity (especially young women), those with an indwelling urinary catheter or urinary tract instrumentation, urinary tract stones, urinary stasis, diabetes mellitus, or immunosuppression, are at a higher risk of developing urinary tract infections (UTIs). Due to anatomical and physiological factors, UTIs are significantly more common in females. Women aged 15–44 are especially vulnerable, with 40% experiencing at least one UTI in their lifetime, compared to only 12% of men. The prevalence of UTIs in women is approximately 3% at age 20, increasing by 1% per decade. Recurrent UTIs predominantly affect females between the ages of 1

and 50. The most common bacterial cause of UTIs is Escherichia coli (53.77%), followed by Klebsiella pneumoniae (27.4%), Pseudomonas aeruginosa (8.56%), Proteus species (4.79%), Enterobacter species (1.71%), and Staphylococcus aureus (1.54%).(2) Recurrent UTIs are defined as two or more infections within six months or three or more within a year. Studies show that 50–80% of women will experience at least one UTI in their lifetime, with 20–30% experiencing recurrent episodes. A history of prior UTIs is one of the strongest predictors of recurrence. These infections may arise from bacterial persistence in the urinary tract or reinfection by new pathogens, significantly affecting the patient's quality of life. Non-pharmacological management includes adequate hydration to flush out bacteria, Frequent urination to prevent bacterial colonization, Urinary analgesics for symptom relief, and Hot Sitz baths to soothe irritation. Pharmacological management includes antibiotic therapy, which is the cornerstone of UTI management. Preferred antibiotics include Trimethoprim-sulfamethoxazole (160-800 mg twice daily for 3–7 days) and Nitrofurantoin (100 mg twice daily for 3–7 days). However, some antibiotics have some serious side effects: Fluoroquinolones may cause nausea, headache, dizziness, and appetite loss, and Nitrofurantoin may lead to nerve pain, lung reactions, and liver problems.[4]

UNANI CONCEPT OF URINARY TRACT INFECTION[5]

In classical Unani literature, Ṭaḍiya-i-Majra-i-Bawl is not explicitly mentioned as a distinct condition. However, the clinical features and treatment of related urinary disorders have been documented under various headings, such as hurqat-al-bawl, (burning micturition/dysuria), Iḥtibās al-Bawl (urine retention), Usr-al-Bawl (Dysuria), Taqṭīr al-Bawl (Dribbling of urine), Salasul bawl (Incontinence of urine) Lazaa- al-Mathāna (bladder irritation), Waram-i-Mathāna (cystitis), Waram-i-Kulliyya (pyelonephritis), and Waram-i-Ahleel (urethritis). Although classical Unani texts do not specifically mention microorganisms, a detailed analysis of Unani literature suggests that ancient Arab physicians profoundly understood infectious diseases. They described infections using terms like Tadiyah (infection) and Ufoonat (putrefaction). Avicenna (Ibn-e-Sina), in his famous medical encyclopedia Al-Qanoon-fit-tib (The Canon of Medicine), referred to microorganisms as Ajsam-e-Khabisah (harmful entities), demonstrating an early conceptual understanding of infectious processes long before modern microbiology emerged. The management is based on the use of Dafa-e-ta'affun (Antiseptic), Musakkin (Cooling/refrigerating agents), Dafa-e-humma (Antipyretic), Habis-ud-dam (Hemostatic), Musaffi-ud-dam (Blood purifier), Muhallil-e-Auram ahsha, and Mudir-e-bawl adviyaat (Visceral anti-inflammatory and Diuretic drugs). Muhallil-e-Auram adviyaat are supposed to subside the inflammatory component, Dafa-e-ta'affun (Antiseptic) is supposed to kill the microbial agent and Mudir-e-bawl adviyaat induce free flow of the urine from the urinary bladder and clear off the infections. Therefore, based on the above Usool-e-ilaaj, the proposed Unani Polyherbal Formulation has been chosen for the treatment of Urinary Tract Infection.

CASE PRESENTATION

A 61-year-old married woman presented with complaints of Dysuria, Urgency, Low backache, suprapubic pain, strangury, and not being able to empty your bladder. Her medical history included previous allopathic treatments, which had led to serious side effects such as nausea, headache, loss of appetite, dizziness, diarrhea, and hair loss. However, the specific details of the medications used were unavailable. Despite undergoing conventional treatments, she experienced recurrent episodes of UTIs without satisfactory relief. The patient sought Unani treatment at the Moalajat (Medicine) Outpatient Department of Ayurvedic and Unani Tibbia College, Karol Bagh, New Delhi 110005. A thorough clinical examination and medical history review were conducted, and diagnostic tests, including routine blood tests, CT, BT, thyroid profile, random blood sugar (RBS), and urine examination, were advised. Based on the findings, the patient was diagnosed with Recurrent UTI. She had no history of asthma, diabetes mellitus, Hypertension, allergies, or other systemic diseases, and no significant family history was noted. Her systemic examination revealed no abnormalities, and her vital signs were within normal limits. The treatment plan was formulated following classical Unani principles, emphasizing a holistic approach. Her temperament (Mizaj) was evaluated based on the ten classical parameters (Ajnas-e-Ashra), which are used to assess an individual's constitution in Unani medicine. The treatment was designed to address both internal and external factors influencing her condition, following the holistic principles of Unani medicine. Based on the Mizaj analysis, the patient was found to have a bilious temperament, which aligns with descriptions found in classical Unani medical texts. Her progress was systematically monitored through weekly follow-up assessments conducted at baseline and after the study. These evaluations were based on clinical symptoms assessed using the UTI Symptom Assessment (UTISA) questionnaire score and urine analysis reports. The scoring criteria were as follows: Mild (1-7), Moderate (8-14), and Severe (15-21) as shown in Table No 2. The patient was thoroughly informed about the nature of Unani treatment and its potential benefits. She provided written informed consent for the possible publication of her case in a medical journal, with strict assurance that her and her family's identities would remain confidential.

Interventions

1. Medications

The patient was treated with a 50% hydroalcoholic extract of an Unani polyherbal formulation containing medicinal ingredients with the following therapeutic properties: Dafa-e-Ta'affun (Antiseptic), Muḥallil-i-

Awrām-i-Ahsha (Visceral anti-inflammatory). Mudir- i -Bawl (Diuretic), Musakkin-i-Alam (Analgesic), Musakkin (Cooling/Refrigerating agent), Dafa-e-Humma (Antipyretic), Musaffi-ud-Dam (Blood purifier). The treatment regimen consisted of two capsules (500 mg), taken orally twice daily, and Qurs-e-Kafoor (two tablets twice daily) for three weeks, administered with plain water after meals. The polyherbal extract was procured from Vital Herbs, Uttam Nagar, Delhi, India, as detailed in Table No. 2. The Qurs-e-Kafoor formulation is an Unani pharmacopeial compound drug marketed by Hamdard, a GMP-certified company.

Table no. 1: Composition of Unani formulation.

Test Drugs (Extract)	Part used	Dose per capsule	Actions (Afa'al)
Karonda (Carrisa carandas linn.)	Fruit	166mg	Muḥallil-i-Awrām (Anti-inflammatory), Musakkin-i-Alam (Analgesic), Anti-oxidant, Hepatoprotective.[6]
Khar khasak (Tribulus terristris Linn)	Fruit	100mg	Anti-microbial, (Musakkin-i-Alam) Analgesic, Muḥallil-i-Awrām (Anti-inflammtory).[7]
Mako (Solanum nigrum Linn)	Fruit	42mg	Anti-microbial, Muḥallil-i-Awrām -i-Ahshah (Visceral Anti-inflammatory), Antioxidant, Musakkin-i-Alam (Analgesic), Hepatoprotective.[8]
Beekh-e-Kasni (Cichorium intybus)	Root	42mg	Anti-microbial activity, Muhallil-e-Auram-e-Ahshah (Visceral Anti-inflammatory), Antioxidant, Hepatoprotective effect.[9]
Bhumi amla (Phyllanthus niruri)	Whole plant	50mg	Anti-bacterial activity, Muḥallil-i-Awrām (Anti-inflammatory), Antioxidant, Hepatoprotective, Immunomodulatory action, and Antispasmodic.[10]
Chirayata shireen (Swertia chirata)	Whole plant	100mg	Anti-microbial activity, Muḥallil-i-Awrām (Anti-inflammatory), Antioxidant, Hepatoprotective.[11]
Qurs-e-Kafoor (Camphor)	Tablet	Two tablets	Da'fe Ufoonat (Antiseptic Properties), Muḥallil (Resolvant), Mubarrid (Refigerant), Musaffi-ud-Dam (Blood purifier).[12]

2. Diet and lifestyle modifications

The patient was advised to incorporate fiber-rich foods into her diet, including fruits (berries, blueberries, pomegranate juice), vegetables, and yogurt, to help combat bacterial infections, eliminate harmful bacteria from the body, and relieve bladder pressure. She was also instructed to avoid spicy and acidic foods (such as oranges, lemons, and limes) as they can irritate the bladder. Additionally, the following lifestyle modifications were recommended to prevent recurrence: drinking plenty of water, avoiding wearing tight underwear, refraining from using hot tubs, etc.

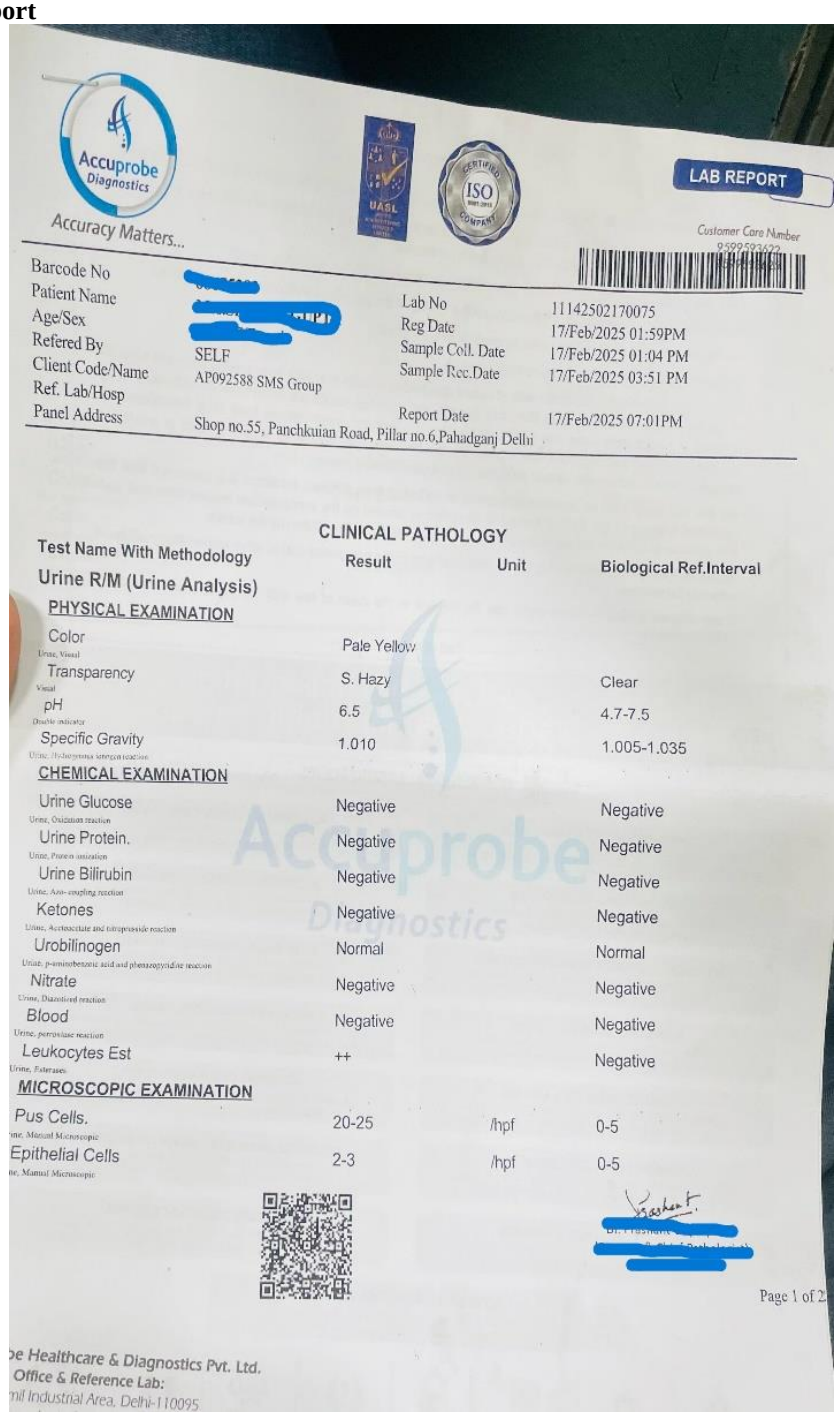
RESULTS

The patient experienced significant improvement in her UTI symptoms after seven days of treatment with Unani medicine. By the 21st day, all symptoms had considerably improved, as reflected in the UTI Symptom Assessment (UTISA) questionnaire score and urine analysis. According to the UTISA score, the initial score of 18 fell under the severe UTI category. However, there was a significant improvement, with the score decreasing to 7, indicating a mild condition by the end of the treatment, as shown in Table No.3. Additionally, urine analysis demonstrated a notable improvement in pus cells, which initially ranged from 20-25/ hpf before treatment and decreased to a normal range of 1-2/ hpf. She expressed high satisfaction with the results, as evidenced by the improved UTISA score and urine analysis report, as shown in figures 1 & 2.

Table no 2: Results on UTISA questionnaire scores.

UTISA questionnaire	BT	AT	Reduction in Symptoms (%)
Frequency of urination	3	1	**33.3%**
Urgency of urination	3	1	**33.3%**
Pain or burning when passing urine	3	1	**33.3%**
Not being able to empty your bladder /passing only small amounts of urine	3	2	**33.3%**
Pain or uncomfortable pressure in the lower abdomen/pelvic area caused by your UTI	2	1	**50%**
Low back pain	2	1	**50%**
Blood in your urine	0	0	-
Total Score	18 (Severe)	7 (Mild)	**38.8%**

Urine Analysis Report



Accuprobe Diagnostics
Accuracy Matters...

LAB REPORT

Customer Care Number
9599593622

Barcode No		Lab No	11142502170075
Patient Name		Reg Date	17/Feb/2025 01:59PM
Age/Sex		Sample Coll. Date	17/Feb/2025 01:04 PM
Refered By	SELF	Sample Rec.Date	17/Feb/2025 03:51 PM
Client Code/Name	AP092588 SMS Group		
Ref. Lab/Hosp		Report Date	17/Feb/2025 07:01PM
Panel Address	Shop no.55, Panchkuian Road, Pillar no.6,Pahadganj Delhi		

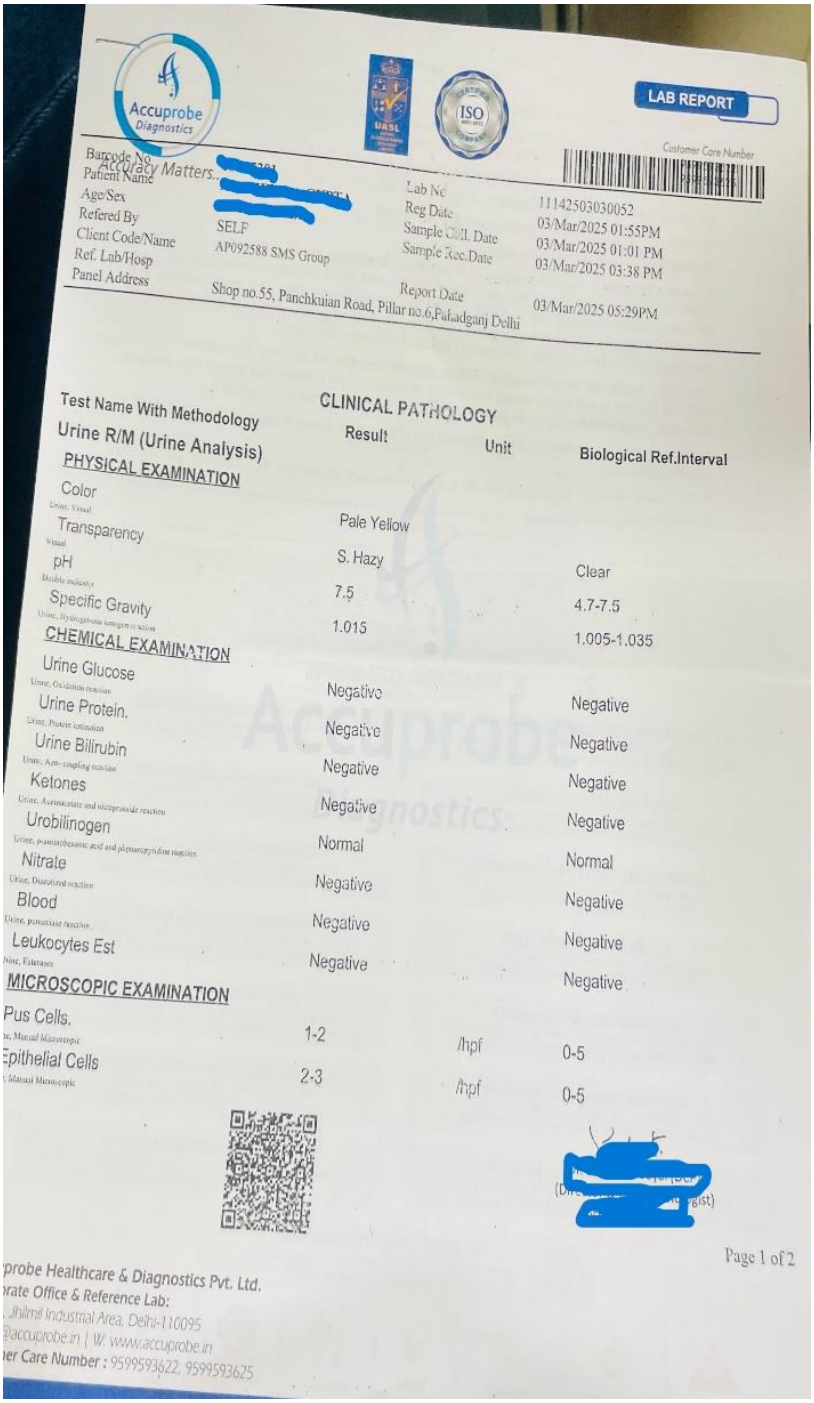
CLINICAL PATHOLOGY

Test Name With Methodology	Result	Unit	Biological Ref.Interval
Urine R/M (Urine Analysis)			
PHYSICAL EXAMINATION			
Color	Pale Yellow		
Transparency	S. Hazy		Clear
pH	6.5		4.7-7.5
Specific Gravity	1.010		1.005-1.035
CHEMICAL EXAMINATION			
Urine Glucose	Negative		Negative
Urine Protein.	Negative		Negative
Urine Bilirubin	Negative		Negative
Ketones	Negative		Negative
Urobilinogen	Normal		Normal
Nitrate	Negative		Negative
Blood	Negative		Negative
Leukocytes Est	++		Negative
MICROSCOPIC EXAMINATION			
Pus Cells.	20-25	/hpf	0-5
Epithelial Cells	2-3	/hpf	0-5

Page 1 of 2

e Healthcare & Diagnostics Pvt. Ltd.
Office & Reference Lab:
nif Industrial Area, Delhi-110095

Fig. No. 1: Before-Treatment.



Accuprobe Diagnostics

Accuracy Matters

LAB REPORT

Barcode No. [redacted]
Patient Name [redacted]
Age/Sex [redacted]
Refered By SELF
Client Code/Name AP092588 SMS Group
Ref. Lab/Hosp
Panel Address Shop no.55, Panchkuian Road, Pillar no.6,Paharganj Delhi

Lab No 11142503030052
Reg Date 03/Mar/2025 01:55PM
Sample Coll. Date 03/Mar/2025 01:01 PM
Sample Rec.Date 03/Mar/2025 03:38 PM
Report Date 03/Mar/2025 05:29PM

CLINICAL PATHOLOGY

Test Name With Methodology	Result	Unit	Biological Ref.Interval
Urine R/M (Urine Analysis)			
PHYSICAL EXAMINATION			
Color	Pale Yellow		
Transparency	S. Hazy		Clear
pH	7.5		4.7-7.5
Specific Gravity	1.015		1.005-1.035
CHEMICAL EXAMINATION			
Urine Glucose	Negative		Negative
Urine Protein.	Negative		Negative
Urine Bilirubin	Negative		Negative
Ketones	Negative		Negative
Urobilinogen	Normal		Normal
Nitrate	Negative		Negative
Blood	Negative		Negative
Leukocytes Est	Negative		Negative
MICROSCOPIC EXAMINATION			
Pus Cells.	1-2	/hpf	0-5
Epithelial Cells	2-3	/hpf	0-5

Page 1 of 2

probe Healthcare & Diagnostics Pvt. Ltd.
rate Office & Reference Lab:
Jhilmil Industrial Area, Delhi-110095
@accuprobe.in | W: www.accuprobe.in
er Care Number : 9599593622, 9599593625

Fig. No. 2: (After-Treatment).

DISCUSSION

UTIs remain a significant global health concern, with increasing antimicrobial resistance (AMR) limiting the efficacy of conventional antibiotics. While these antibiotics are widely used in modern medicine, their long-term use is associated with adverse effects. In light of these challenges, the present study explores the therapeutic potential of Herbal medicine in managing UTIs. Unani medicine is an ancient holistic system of healing that offers a range of herbal formulations with potent antimicrobial properties. This study investigates the efficacy of a polyherbal Unani formulation in managing UTIs, with a focus on its antibacterial activity. The effectiveness of this Unani formulation can be attributed to the antimicrobial properties of its constituents. The methanolic extract of C. carandas leaves exhibited significant antibacterial activity, particularly against Staphylococcus aureus, while the ethyl acetate extract showed activity against E. coli. Studies suggest that these extracts demonstrate superior antimicrobial effects compared to tetracycline. P. niruri has demonstrated potent anti-E. coli activity due to kaempferol and rutin. Quercetin, in particular, disrupts E. coli cell membranes, altering their permeability and rendering drug-resistant strains more susceptible to treatment. The leaves of T. terrestris exhibit antibacterial

activity against E. coli, making them a valuable component in the management of UTI-related infections. **Cichorium intybus** contains umbelliferone, a coumarin with strong antibacterial effects against E. coli. Ethanolic extracts of **Solanum** nigrum have demonstrated significant antimicrobial activity, with maximum inhibition zones of 16.88 mm, 11.33 mm, and 19.25 mm against E. coli at a concentration of 200 mg/ml. **Swertia chirata** contains swertiamarin, oleanolic acid, and ursolic acid—alkaloids known for their antibacterial properties. The essential oil of C. camphora has been shown to exhibit broad medicinal properties, including antimicrobial, anti-inflammatory, and antioxidant effects. The obtained Minimum Inhibitory Concentrations (MICs) and Minimum Bactericidal Concentrations (MBCs) confirm the high susceptibility of E. coli strains to camphor essential oil. Importantly, E. coli biofilm formation is a major contributor to antimicrobial resistance and persistent infections. The ability of this Unani polyherbal formulation to counteract E. coli biofilms further supports its effectiveness in UTI management.

CONCLUSION

The findings of this case report suggest that the Unani polyherbal formulation may serve as a promising alternative in the treatment of Recurrent UTIs. The antimicrobial activity of its plant-based constituents highlights the potential of traditional medicine in addressing the growing crisis of antibiotic resistance. Further large-scale clinical studies are warranted to validate these results and explore the broader applications of Unani medicine in infectious disease management.

REFERENCES

1. McCann E, Sung AH, Ye G, Vankeepuram L, Tabak YP. Contributing Factors to the Clinical and Economic Burden of Patients with Laboratory-Confirmed Carbapenem-Nonsusceptible Gram-Negative Urinary Tract Infections. Clinicoecon Outcomes Res., 2020; 12: 191–200.
2. Mancuso G, Midiri A, Gerace E, Marra M, Zummo S, Biondo C. Urinary Tract Infections: The Current Scenario and Future Prospects. Pathogens, 2023 Apr 20; 12(4).
3. Alan W. Partin & Roger R. Dmochowski & Louis R. Kavoussi & Craig A. Peters & Alan J. Wein. Campbell Walsh Wein Urology. 12th ed., 2.
4. Aggarwal N, Leslie SW. Recurrent Urinary Tract Infections, 2025.
5. Ahmad T, Khan AB, Latafat T. URINARY TRACT INFECTION (TADIYA MAJAR-E-BAUL) IN THE LIGHT OF UNANI SYSTEM OF MEDICINE: AN OVERVIEW. Journal of Pharmaceutical & Scientific Innovation, 2015 Oct 30; 4(5): 242–6.
6. Saeed W, Ismail T, Qamar M, Esatbeyoglu T. Bioactivity Profiling and Phytochemical Analysis of Carissa carandas Extracts: Antioxidant, Anti-Inflammatory, and Anti-Urinary Tract Infection Properties. Antioxidants (Basel), 2024 Aug 27; 13(9).
7. Chhatre S, Nesari T, Somani G, Kanchan D, Sathaye S. Phytopharmacological overview of Tribulus terrestris. Pharmacogn Rev., 2014 Jan; 8(15): 45–51.
8. Chen X, Dai X, Liu Y, Yang Y, Yuan L, He X, et al. Solanum nigrum Linn.: An Insight into Current Research on Traditional Uses, Phytochemistry, and Pharmacology. Front Pharmacol., 2022; 13: 918071.
9. Street RA, Sidana J, Prinsloo G. Cichorium intybus: Traditional Uses, Phytochemistry, Pharmacology, and Toxicology. Evid Based Complement Alternat Med., 2013; 2013: 579319.
10. Kaur N, Kaur B, Sirhindi G. Phytochemistry and Pharmacology of *Phyllanthus niruri* L.: A Review. Phytotherapy Research, 2017 Jul 17; 31(7): 980–1004.
11. Kumar V, Van Staden J. A Review of Swertia chirayita (Gentianaceae) as a Traditional Medicinal Plant. Front Pharmacol., 2015; 6: 308.
12. USMANI QI, JAHAN N, SOFIYA. KAFUR (C. CAMPHORA L.)–AN UPDATED REVIEW OF ITS ETHNOPHARMACOLOGY, PHYTOCHEMISTRY AND PHARMACOLOGY. Int J Pharm Pharm Sci., 2022 Oct 1; 10–7.