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Clinical Efficacy of *Hammam* (Steam Bath) in the management of *Du'f-i-Kulya* (Renal insufficiency / renal debility)

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Abstract

Chronic Kidney Disease (CKD) refers to a gradual loss of renal function over time. It is usually asymptomatic in the initial stages and thus hard to diagnose. According to the Unani System of Medicine (USM), this is seen as a *Murrakkab* (compound) disease and can be correlated under the broad term- *Du'f-i-Kulya* (Weakness of the Kidney).

The main etiologies are diabetes, hypertension, and glomerulonephritis. Risk factors like age, family background, cardiovascular disease, and obesity play a part in its onset. CKD is diagnosed using blood tests to measure creatinine levels and urine tests for proteinuria. CKD stages range from mild impairment (Stage 1) to total kidney failure (Stage 5). Treatment involves managing underlying conditions, diet modification, and medication. Later stages can be treated using dialysis or a kidney transplant.

Early diagnosis and treatment are essential in slowing the course of disease and decreasing complications such as cardiovascular diseases. Ongoing monitoring and education of the patient are critical to enhancing outcomes for patients with CKD. Worldwide, CKD occurs in about 10-15% of the population. Contributing factors to this figure include diabetes, hypertension, and an increasing elderly population. The World Health Organization emphasizes that CKD is a significant cause of morbidity and mortality, especially in low- and middle-income nations. Although the majority of the population suffering from CKD choose traditional treatment, many challenges to healthcare create problems in the management of CKD. Thus, it becomes a need of the hour to discover an alternative solution for the efficient management of the disease.

Treatment modalities of the Unani System of Medicine consist of three principal branches *viz, Ilaj Bil Tadbeer wat Taghziya*, *Ilaj Bil Dawa*, *Ilaj Bil Yad*. One of the Famous *Tadabeers*, *Hamam-i-Buhari* (steam bath), is Effective in lowering the disease burden of CKD by lowering the levels of Serum Urea and Creatinine and causing subjective betterment in the patients. The term *Hammam* is itself derived from the Arabic root *Hamm*, which signifies "spreader of warmth" or that which produces heat. As per Ibn-i-Sina, the term *Hammam* has been taken from the word '*Alhamim'*, that is, the intensity of summer heat. The term *Hammam* is used to indicate a bathroom or toilet in most dialects of colloquial Arabic. *Hammam* such as *Riyazat* and *Dalk* belongs to *Asbab-i-ghair zaroriyah*, which implies that they are not necessary for the survival of life, but if they are done, they keep the body healthy if the body is healthy, and they regain health if the body becomes ill or diseased. The current research is concerned with the presentation of such a case with raised and abnormal Renal Function Study and how effective the *Ilaj Bil Tadbeer* (Regimen) - *Hamam-i-Bukhari* (steam Bath) is, in the management of the condition.

Keywords Unani, *Hamam-i-Bukhari*, chronic kidney disease, *Ilaj*, *Riyazat*

Introduction

Chronic Kidney Disease (CKD) is a chronic and progressive disease in which there is a gradual loss of kidney function over time. It tends to be asymptomatic during its initial stages, and thus detection at an early stage is difficult. According to Unani System of Medicine (USM) this is seen as a *Murrakkab* disease which includes all three main states of a disease *viz, Sue Mizaj*, *Sue Tarkeeb* and *Tafarruke Ittesal* and can be termed *Du'f-i-Kulya*. The leading causes are diabetes, hypertension, and glomerulonephritis. Age, family history, cardiovascular disease, and obesity are the risk factors leading to its development.

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CKD is diagnosed by blood tests that measure creatinine levels and by urine tests that detect proteinuria. CKD stages vary from mild kidney damage (Stage 1) to total kidney failure (Stage 5). Successful management includes management of underlying conditions, lifestyle changes, and medication. Later stages could be treated with dialysis or a kidney transplant. Early identification and management are crucial in slowing the progression of disease and minimizing complications, such as cardiovascular diseases. Long-term monitoring and education of the patient are necessary to enhance outcomes for patients with CKD. CKD estimates globally are around 10-15% of the population. Contributing factors towards prevalence are diabetes, hypertension, and the increased aging of the population. The World Health Organization draws attention to the fact that CKD is a leading cause of morbidity and mortality, especially in low- and middle-income countries. *Ibn-e-Rushd* [2], the renowned Unani Physician, stated that the functions of the kidney rely on its *Quwwas* (Faculties). For all living organisms, some functions are essential in maintaining life. For these functions to occur, some *Quwa* (power) is essential [1]. In accordance with the conceptual basis of USM, there are three kinds of power in every human being for sustaining life and continuing the generation: *Quwa Tabaiyah* (Natural faculty), *Quwa Nafsania* (psychic and mental faculty) and *Quwa Haywaniya* (vital faculty)- the three powers existing in the human body. Every organ is equipped with a power by which physiological activity is performed by that organ. Whenever any faculty remains weak, kidney disorders occur.These faculties may be further classified as under:

1. *Quwwat-e-Mumayyaza* (power of discrimination)
2. *Quwwat-e-Hazima* (digestive power)
3. *Quwwat-e-Jaziba* (absorptive power)
4. *Quwwat-e-Masika* (retentive power)
5. *Quwwat-e-Dafia* (power of excretion)

The disorder of the kidney is a general term which is used when the kidney does not work and due to it many diseases occur, *viz, Huzal-e-Kulliya* (renal hypertrophy), *Du'f-i-Kulya* (weakness of the Kidney), *Auram-e-Kulliya* (nephritis), *Qurooh-e-Kulliya* (renal ulcer), *Hissat-e-Kulliya* (Nephrolithiasis), *Suemijaz-e-Kulliya* (alteration of Mijaz of Kidney), *Laghri-e-Kulliya* (renal dystrophy), *Dubella-e-Kulliya* (renal atrophy), *Suddad-e-Kulliya* (Renal obstruction), etc.

These diseases can be caused because of the alteration of *Mizaj* (Temperament), *Akhlat* (Humours) and *Quwwa* (Faculties). If any one of them underwent an alteration in the kidney, diseases would manifest [3, 4]. The augmented burden of *Quwwat-e-Jaziba* (Absorptive faculty) leads to weakening of *Quwwat-e-Masika* (retentive power) and *Quwwat-e-Hazima* (digestive power), which lead to formation of *nao-pukhta* (unmetabolised) urine. The kidney disease can also be caused due to a change in *Mizaj* (temperament) or *Amraz Alliya* (compound diseases) or both [2, 6, 7].

According to the Unani Scholars, the kidney disorders can be divided into the following categories

- *Iltihabi* (inflammatory disease)
- *Ghair Iltihabi* (Non-inflammatory disease)
- *Amraz-e-Shirki* (associated with other disease)

***Iltihabi* (inflammatory disease)**

Inflammatory diseases are due to a change in *Akhlat* (Humours) e.g. *Warm-e-Kulliya Haad* (acute nephritis), *Warm-e-Kulliya Muzmin* (chronic nephritis) [3, 4, 6].

***Ghair Iltihabi* (Non-Inflammatory disease)**

Noninflammatory kidney diseases occur due to weakness of Quwwas (faculties) e.g., *Du'f-i-Kulya*, *Laghri-e-Kulliya* etc. 5

***Amraz-e-Shirki* (associated with other diseases)**

Sometimes the kidney may be involved due to liver diseases, and sometimes vice versa. As per *Mizaj* (Temperament), the kidney ailments can be categorized on the basis of *Quwwas* (faculties) and *Akhlat* (Humours).

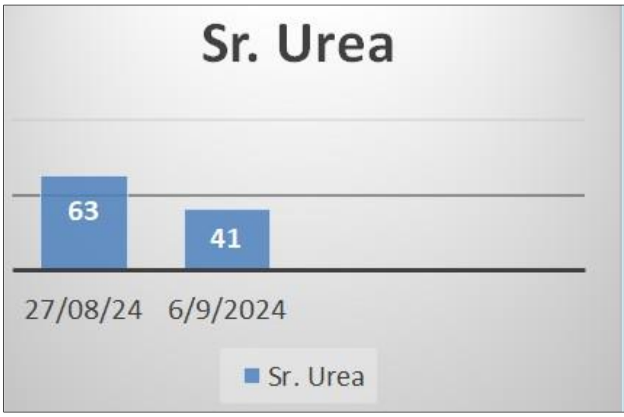
Classification according to the *Quwwa* (Faculties). Weakness of *Quwwas* (Faculties) leads *to Zauf-e-Kulliya* (Weakness of Kidney), which also comprises other signs such as the aforementioned kidney ailments.

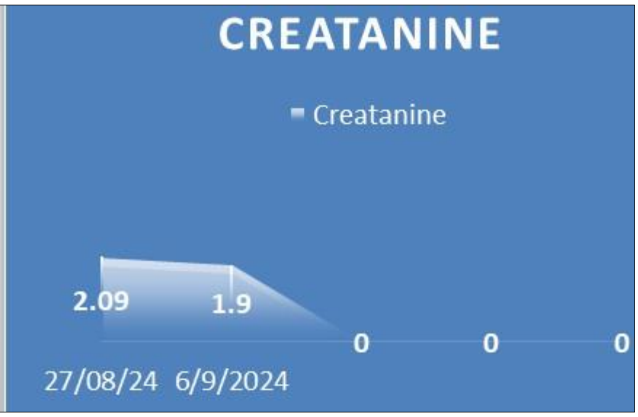
The term *Hammam* is adapted from the Arabic root *Hamm*, and it means "spreader of warmth" or the one that generates heat.[1] According to Ibn-i-Sina, the term *Hammam* is taken from *alhamim*, which refers to the intensity of summer heat. The term *Hammam* is utilized as bathroom or toilets in most dialects of vernacular Arabic. *Tadabeer* such as *Riyazat* and *Dalk* is the components of *Asbab-i-ghair Zaroriyah* [2, 3], i.e., they are not necessary for the continuation of life, but if done, they help sustain the health if the health exists and help restore the health if the body is sick or diseased [3].

A study conducted in the Journal of Renal Failure states that Sauna bathing decreased systolic blood pressure without affecting heart rate, resulting in a significant decrease in plasma epinephrine and norepinephrine. Therefore, it might be an effective adjunctive therapy for chronic systolic CHF [9, 12]. After one to two hours' sauna bath, the patient's body weight decreased by 1.5- 2kg [13]. Sweat fluid mainly contains sodium chloride, potassium, nitrogen metabolites such as urea, ammonia, uric acid, and creatinine [14]. Urea is the major nitrogen-containing metabolic product of protein catabolism, accounting for about 75% of the non-protein nitrogen eventually excreted. The mean sweat fluid urea concentration could reach 5.5 to 50 times the serum concentration; therefore, urea excretion via sweating is important when the renal function is impaired [15].

Timeline

2024-08-27	Serum Urea Level-63mg/dl Serum Creatinine Level-2.09mg/dl
2024-08-30	Steam Bath sitting No:1
2024-09-02	Steam Bath Sitting No:2
2024-09-06	Serum Urea Level- 41mg/dl Serum Creatinine Level-1.32mg/dl





Discussion

The presented case highlights the potential role of *Hammam* (steam bath) as a therapeutic intervention in managing renal dysfunction, specifically in a patient with elevated serum urea (63 mg/dL) and creatinine (2.09 mg/dL) levels. Despite the absence of overt symptoms, the biochemical markers indicated early renal insufficiency. Following two sessions of *Hammam* therapy, a notable reduction in urea (41 mg/dL) and creatinine (1.32 mg/dL) was observed, suggesting improved renal filtration and detoxification. This correlates with the Unani principle of *Ilaj Bil Tadbeer* (Regimenal therapy), which emphasizes non-pharmacological approaches to maintain equilibrium of the body.

In Unani medicine, *Hammam* is theorized to enhance *Quwwat-e-Dafia* (excretory faculty) by promoting diaphoresis, thereby aiding the elimination of metabolic waste products, including nitrogenous compounds like urea and creatinine. The mechanism parallels findings in contemporary studies on thermal therapy, where sauna bathing has been shown to reduce serum urea and creatinine through sweat-mediated excretion. For instance, research indicates that sweat can contain urea concentrations 5-50 times higher than serum levels, offering a compensatory excretory route in renal impairment. Additionally, thermal therapy may improve microcirculation and reduce oxidative stress, factors implicated in CKD progression.

The cardiovascular benefits of heat therapy, such as lowered blood pressure and sympathetic activity, further support its utility in CKD management, given the frequent comorbidity of hypertension and cardiovascular disease in these patients. The observed weight loss post-*Hammam* (1.5-2 kg) likely reflects fluid loss and toxin clearance, reducing the renal solute load. This synergizes with Unani concepts of *Tadbeer-e-Mizaj* (temperament correction), where thermal modulation helps balance humoral excesses (e.g., Balgham or phlegmatic imbalance) linked to renal debility.

While promising, these findings necessitate cautious interpretation. The short-term biochemical improvements in a single case cannot establish causality or long-term efficacy. Larger, controlled studies are required to validate *Hammam's* role in CKD, optimize protocol duration/frequency, and assess safety in advanced stages. Furthermore, integrating *Hammam* with conventional therapies (e.g., glycemic control, antihypertensives) could offer a holistic approach, addressing both symptoms and disease progression.

Patient Perspective

A male patient aged 52 with C/O weakness & Inability to lift his Left UL & Difficulty in moving his left lower limb for 3 years visited our OPD with OP No: 494. The patient did not have any history of constipation. On routine blood investigations, his serum urea and creatinine levels seem to be raised but subjectively patient did not exhibit any symptoms indicating this raise. The required Clinical Examinations were done and the patient was admitted in In-Patient Department.

Conclusion

This case underscores *Hammam's* potential as an adjunctive therapy in early CKD, leveraging Unani principles of detoxification and homeostasis. By bridging traditional wisdom and modern pathophysiology, such regimens may offer cost-effective, non-invasive strategies to mitigate renal burden. Future research should explore mechanistic pathways, standardized protocols, and patient-centered outcomes to validate its inclusion in integrative CKD care.

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