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Efficacy of *Sufoof-e-Kabab Chini (Piper cubeba)* in Hypertension Induced Chronic Kidney Disease - A Case Report

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ABSTRACT

Chronic Kidney Disease (CKD) has been recognized as a major health problem worldwide with rising incidence, pronounced morbidity and mortality. Early diagnosis, prevention and management of CKD have acquired great importance for health providers. This abstract is a case report of 47 years old male patient diagnosed with Hypertension induced CKD stage 3b presented with altered serum creatinine level which was unable to revert back to normal levels with the conventional medical therapy. After taking basic parameters, *Sufoof-e-Kabab chini* (Piper cubeba) was given for 42 days. It was observed that there was a significant improvement in subjective symptoms as well as in objective parameters. No adverse effects were observed during and after the study. Based on observations, it is pretended that *Sufoof-e-Kabab chini* may prove to be effective in management among non-dialysis dependent CKD patients.

Key-words: *Kabab Chini*; (Piper cubeba); CKD; Serum Creatinine; Unani; case report

INTRODUCTION

Chronic Kidney Disease (CKD) is Kidney damage for ≥3 months, as defined by structural or functional abnormalities of the kidney, with or without decreased GFR, manifest by either Pathological abnormalities or Markers of kidney damage, including abnormalities in the composition of blood or urine or abnormalities in imaging tests and or GFR <60ml/min/1.73m^2 for ≥3 months, with or without kidney damage. [1] Worldwide prevalence of CKD is 8-16% in populations with Diabetes, Hypertension, Glomerulonephritis, Autosomal Dominant Polycystic Kidney Disease, Cystic and tubulointerstitial nephropathy. [2] According to global burden of disease study in 2010, CKD ranked 18th with high mortality [3] and the incidence of End Stage Renal Disease (ESRD) is 150-200 per million of population (pmp). [4] As per epidemiological data of the Indian society of nephrology (ISN) registry, 47.5% of patients of CKD presented to nephrologist at stage 5, 25.5% at stage 4, 19.6% at stage 3, 4.9% at stage 2 and 2.5% at stage 1. [5] In India, DM and HTN account of 40-60% cases of CKD. [6] Hence, it is the need of the time to find alternate treatment to control further progression of CKD.

In Unani System of Medicine (USM), CKD is termed as *Ḍu'f al-Kulya* and its etiology is *Sue Mizaj Gurdah*, *Hūzal al-Kulya* (Renal atrophy), *Gurdah ki sakht ka dheela ho jana* (Hypertrophy of nephron which occurs due dominancy of *Ratab Mizaj*, or *Kasrate Bawl* / Polyuria); any type of *Sadma* (shock/ blow) that occurs to kidney. [7-10] *Ibne Hubal Baghdadi* stated, "*Kushadgi* of *Majari Gurdah or loosening in kidney tissue* causes alteration in filtration of kidney" [10] whereas, *Ibn Zuhar* described *Quwwate Jaziba* (Power of absorption) of kidney gets weaken in *Ḍu'f al-Kulya* and excessive *Rutubate Fuzliya* is formed in

body, which results in puffiness / swelling all over body and *Istisqa ziqi* (Ascites)". [11]

USM deals with holistic approach in the treatment by following its principle of *Usool Bil Zid*, and emphasising on the elimination of cause and use of drugs with *Mulattif* (Demulcent), *Mudirr-e-Bawl* (Diuretic), *Dafa-e-Ta'fun* (Antiseptic) properties. [10,12,13] Several single drugs such as *Kharbuza*, *Khayar*, *Rewand*, *Khar-e-Khasak*, [14] *Kababa*, *Darchini* [15] and compound formulations like *Jawarish Zarooni*, *Laboob Kabeer*, *Majoon-e-Jalinoos* [16] *Banadiqul Bazoor* [10] *Qurs-e-Tabasheer*, *Qurs-e-Gulnar* [15] etc. are recommended in kidney diseases with nephro-protective properties.

The normal *mizaj* (temperament) of kidney is *Haar* (Hot) and *Ratab* (Wet), as it receives 25% of cardiac output but due to predisposing factors of CKD, it gets deviated from its original temperament and becomes *Barid* / Cold i.e. *Sue mizaj barid*. So, the drug named *Kabab Chini* (Piper Cubeba) with *Haar Yabis mizaj* 2nd degree [12] was selected. Hence, it is hypothesised that *Kabab Chini* may prove to be effective in regulating the impaired function of kidney as a result of CKD.

Patient Information: A 47 years old male, married patient of Bangalore city appeared in Medicine OPD of National Institute of Unani Medicine Hospital, with the chief complaints of heart burn, generalised weakness, loss of appetite and tiredness for the past 6 months. His personal history reveals that he studied up to 8th standard and painter by occupation for the past 25 years and earned up to Rs.15,000/- per month, having mixed dietary habits, long history of alcoholic consumption with smoking index of 270, although his appetite was normal with regular bowel and bladder habits, sleep was sound and adequate.

According to the patient, he was apparently well approximately 6 months ago. Then he developed complaint of generalised weakness, loss of appetite, tiredness which affects his daily activities. Moreover, six years back he had Hypertension along with left hemiparesis, and treated with amlodipine 5mg once a day, and two years back he developed 3-4 episodes of vomiting associated with giddiness which was managed conservatively, after one month of the later incidence, further he developed the same complaints with left sided chest pain which was non-radiating. He was diagnosed as bilateral renal parenchymal disease of grade II through ultrasound of abdomen and pelvis along with Hypertensive heart disease, confirmed through certain investigations like ECG showed tall T wave in V2 and V3 leads and 2D Echo suggests concentric left ventricular hypertrophy with sclerotic aortic valve with ejection fraction 60%, cardiac enzymes (troponin T, CK, CKMB) and serum electrolytes were found within normal limits. Patient was advised to take Tab. Amlodipine 5 mg and Tab. Enalapril 2.5 mg once in a day.

Clinical findings: On general physical examination, patient was dull looking with BMI of 26.81. There was no Pallor, icterus, cyanosis, lymphadenopathy and generalised or local oedema, lack of sleep, muscular twitching, hiccough, and anuria. His vitals and all systemic examinations were within normal limits.

Diagnostic Assessment: At the time of initial assessment, the serum creatinine was 2.34mg/dl by Jaffe reaction method (reference range, 0.6-1.3mg/dl), blood urea was 48mg/dl (reference range, 10-50mg/dl), eGFR was 39.03 ml/min (by using formula Cockcroft gault equation which gives estimated creatinine clearance) indicates CKD stage 3b, urine routine and microscopy showed albumin traces, occasional epithelial cells and pus cells/hpf whereas, Complete blood count, Erythrocyte sedimentation rate, Liver function test (SGOT, SGPT, Alkaline Phosphate), Lipid profile (Total Cholesterol, Serum Triglyceride, LDL, VLDL, HDL) were within normal limits. Echocardiogram was suggested of T wave inversion in lead aVL and V1. Abdominal ultrasound is suggestive

of bilateral renal parenchymal disease grade II.

Informed consent: A written informed consent was obtained prior to the intervention.

Therapeutic Intervention: Patient was given 02 capsules of *Sufoof-e-Kabab Chini*, a total dose of 4gms/day divided into three times orally after taking meal for 42 days along with previous medicines (i.e. Tab. Amlodipine 5 mg and Tab. Enalapril 2.5 mg once in a day). Salt restricted and low protein diet (0.8gm/kg/day) along with daily intake of 1-1.5 litres of water (in addition to usual consumed beverages) was advised to the patient. Whereas, Foods like red meat, egg yolk, green leafy vegetables were avoided.

Follow-up and outcomes: Both subjective (anorexia and fatigue) and objective (blood urea, serum creatinine and urine routine and microscopy) parameters were assessed on weekly follow-ups (0^{th}, 7^{th}, 14^{th}, 21^{st}, 28^{th}, 35^{th} and 42^{nd} days). (Table no. 1)

Table no. 1: Efficacy assessment of *Sufoof-e-Kabab Chini* on objective parameters

	Blood Urea	Serum Creatinine	Urine routine and microscopy	eGFR
Baseline (0^{th} day)	48mg/dl	2.34mg/dl	-Albumin: Traces -Epithelial cells: occasional/hpf -Pus cells: occasional/hpf	39.03 ml/min (CKD stage 3b)
1^{st}follow up (7^{th} day)	45mg/dl	1.8mg/dl	- Albumin: Traces - Epithelial cells: 2-3/ hpf - Pus cells: occasional/ hpf	49.87 ml/min
2^{nd}follow up (14^{th} day)	49mg/dl	1.9mg/dl	- Albumin: Traces - Epithelial cells: 4-5/ hpf - Pus cells: 1-2/ hpf	47.24 ml/min
3^{rd}follow up (21^{st} day)	40mg/dl	1.9mg/dl	- Albumin: Traces - Epithelial cells: 1-2/ hpf - Pus cells: occasional/ hpf	47.24 ml/min
4^{th}follow up (28^{th} day)	48mg/dl	1.8mg/dl	- Albumin: Nil - Epithelial cells: 1-2/ hpf - Pus cells: occasional/ hpf	49.87 ml/min
5^{th}follow up (35^{th} day)	45mg/dl	1.7mg/dl	- Albumin: Traces - Epithelial cells: plenty/ hpf - Pus cells: 6-7/ hpf	52.80 ml/min
6^{th}follow up (42^{nd} day)	40mg/dl	1.2mg/dl	- Albumin: Traces - Epithelial cells: 8-10/ hpf - Pus cells: 4-5/ hpf	74.80 ml/min (CKD stage 2)

Table no. 2: Efficacy assessment of *Sufoof-e-Kabab Chini* on subjective parameters

Subjective Parameters	0^{th} day Baseline	7^{th} day	14^{th} day	21^{st} day	28^{th} day	35^{th} day	42^{nd} day
Anorexia	12	16	18	18	20	22	22
Easy fatigability	23	20	20	15	15	13	13

Grading scale for subjective parameters: Anorexia assessment was done by FAACT (Functional Assessment of Anorexia/ Cachexia Therapy) Questionnaire, [17] in which a total score ≤ 30 is considered to indicate the presence of anorexia. Whereas, fatigue assessment was done by Fatigue Assessment Scale (FAS), [18] in which a total score 10 indicating the lowest level of fatigue and 50 denoting the highest [<10: Mild, >11-20: Mildly-Moderate, >21-30: Moderate, >31-40: Moderately Severe and >41-50: Severe]. So, the patient was moderately affected by fatigue. (Table no. 2)

On last follow up (i.e. on 42^{nd} day), eGFR was 74.80 ml/min (CKD stage 2), serum creatinine was 1.2mg/dl (within normal range) and urine routine and microscopy showed albumin traces, 8-10 epithelial cells/hpf, 4-5 pus cells/hpf. But throughout the study, patient did not have any urinary tract related complaints. Complete blood count, Erythrocyte sedimentation rate, Liver function test and Lipid profile remains within reference ranges throughout the monitoring period which was done before and after the study.

DISCUSSION

Aforementioned significant effects may be attributed to the medicinal

properties of *Kabab Chini*. As the *mizaj* (Temperaments) of this drugs is *Haar Yabis* and it possess *Mulattif* (Demulcent), *Mudirr-e-Bawl* (Diuretic), *Dafa-e-Ta'fun* (Antiseptic), properties by which the drug flushed out the retained toxins from the kidney and does restoration and normalization of *Mizaj-e-Tabayi*. [10,12,13] Several in vitro and in vivo pharmacological studies have been reported that *Kabab Chini* possess proven diuretic, [19] antioxidant, [20] antinociceptive, antipyretic and antimicrobial properties. [21] The diuretic effects are achieved by increasing urine volume significantly and also increasing sodium ion excretion along with potassium ion retention, this effect may be produced by stimulation of regional blood flow or vasodilation or by inhibition of tubular reabsorption of water and anions. [19] The antioxidant property prevents the further renal toxicity as there is an association between oxidative stress and nephrotoxicity. [20]

A clinical trial is underway with the same drug in non-dialysis dependent CKD patients to find its efficacy on large scale.

CONCLUSION

Based on outcome of the single case observation, it can be inferred that *Sufoof-e-Kabab chini* (Piper cubeba) in non-dialysis dependent hypertension induced CKD case may prove to be strengthen the effectiveness in reducing serum creatinine level and increasing eGFR and may help to reduce further complications due to renal parenchymal damage.

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Conflict of interest: None declared

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