Effect of herbal Unani formulation on Nephrotic syndrome: A case study

Misbahuddin Azhar
Regional Research Institute of Unani Medicine, Post Box No 70, Near Head Post Office, Aligarh-202 001, Uttar Pradesh, India
E-mail: ccrum619@gmail.com

Received 20 March 2018, revised 24 July 2018

According to Philosophy of Unani medicine, Du’f al-Kulya is a condition in which the kidneys do not perform their normal function because of impairment in their temperament or alteration in their humoral status or anomalies in their structure. Du’f al-Kulya Barid is caused by the impairment of the temperament of kidneys specially cold impaired temperament leading to swelling, white coloured urine, decreased thirst, feeling of coldness at the site of kidney. These symptoms are very much closer to the condition of ‘Nephrotic syndrome’. That’s the real logic to use traditional herbal Unani formulation for the treatment of nephritic syndrome. The present case report is based on traditional use of herbal Unani formulation for the treatment of nephrotic syndrome. The evidence-based data is provided to support the traditional use of this valuable herbal Unani Formulation (HUF). To generate the biochemical and clinical data from a patient treated with HUF for nephrotic syndrome. A 57-year-old female from Punjabi Sikh community from capital Delhi was diagnosed nephrotic syndrome and treated for four months with a combination of Unani herbal drugs. The patient was advised to take 10 g of powder of HUF twice with Arq Mako and Arq Kasni 20 mL each diluted with equal amount of plain water in the morning and evening. The treatment was continued for four months and investigations for renal functions were carried out and patient was clinically examined at each visit. Laboratory reports and clinical sign and symptoms revealed that HUF reduces serum creatinine, urea and swelling on face and body. Increased blood pressure was declined compared to base line reading. In the present case study, the HUF has shown promising nephroprotective activity by significantly reducing serum creatinine, urea and protein leakage in urine.

Keywords: Nephrotic syndrome, Polyherbal, Unani, Nephroprotection, Du’f al-Kulya


Nephrotic syndrome (NS) comprises signs of nephrosis, large proteinuria, hypo-albuminemia and hyper-lipidemia. It resembles to Du’f al-Kulya Barid in Unani medical literature. It is condition in which kidneys do not perform their normal functions because of impairment in their temperament or alteration in their humoral status or anomalies in their structure due to predominance of Barudat (coldness) in kidney. The accumulation of cold humours in kidney cause alteration in structure and function of kidney especially in excretion and reabsorption of fluid through proximal tubules. The quantity and quality of urine in terms of their normal colour and appearance is altered. In all cases of NS injury to glomeruli is an essential feature. It may be primary, being a disease specific only to kidneys, or may be secondary, being a renal manifestation of a systemic general illness. Nephrotic syndrome may affect adults and children of both sexes but the causes are different in adults, infants and childhood nephrotic syndrome. It is a condition in which 3 g or more protein excreted through urine per day due to increased permeability of glomerular membrane. Hypoproteinemia leads to low colloidal osmotic pressure that in turn allow large amount of fluid to filter into the interstitial spaces and also into potential spaces of the body casing edema. Hyperproteinuria causes increased permeability of the filtering membrane of the kidney leading to pass red blood cells through the pores and causes hematuria. NS may be primary, include minimal change nephropathy, focal glomerulosclerosis, membranous nephropathy, hereditary nephropathies, while secondary NS include diabetes mellitus, lupus erythematosus, viral infections commonly hepatitis B&G viruses and HIV, amyloidosis and paraproteinemias. NS may be classified as steroid sensitive, steroid resistant, steroid dependent, or frequently relapsing from a therapeutic point of view. The features of nephrotic syndrome are morning sub orbital edema/face puffiness, pitting edema over the legs, ascites, hypertension, anemia, dyspnea along with
raised ESR due to increased fibrinogen and other plasma contents. In some cases foamy or frothy urine, due to a lowering of the surface tension due to severe proteinuria. The treatment of nephrotic syndrome is usually symptomatic or it may directly address the injuries caused to the kidneys. For symptomatic treatment diuretics, statins or fibrates and resinous sequesters of bile acids, anti-coagulant, antibacterial drugs, ACE inhibitors, vitamin D along with correct energy intake, e.g., less than 1 g of protein/kg body weight/day have been advised to the patients in the form of lean cuts of meat, fish, and poultry, consumption of water not greater than the level of diuresis and restriction of salty diet like canned soups, canned vegetables containing salt, luncheon meats including prepared foods, fast foods, soy sauce, ketchup, and salad dressings are being prescribed. While kidney damage is treated by prescribing corticosteroids like prednisone at a dose of 60 mg/m² of body surface area/day for 4–8 weeks. After this period the dose is reduced to 40 mg/m² for a further four weeks. Frequent relapses are treated by cyclophosphamide or nitrogen mustard or cyclosporin or levamisole. In *Unani* medical system the treatment of Du‘f al-Kulya Barid is hot and wet drugs and procedures. The *Unani* Pharmacopoeia is very rich and uses three sources of medicine, i.e., herbal, mineral and animal origin. The concept of *Muqawwiyat* (tonics) and organo-therapy are unique in *Unani* System of Medicine. Such drugs are used to tone-up the important organs and strengthen to save them against the possible harmful substances. In organo-therapy the same organ of goat and sheep have been specially prepared mixing with some specific herbal drugs for toning up the affected organ.

**Aim of the study**

To treat nephrotic syndrome patients with Herbal *Unani* Formulation.

**Materials and methods**

A female patient of age 57 yrs from Indian *Punjabi* background diagnosed with rheumatoid arthritis in 2015 in a reputed allopathic hospital of capital Delhi. Physician put her on steroids and prescribed Prednisolone 80 mg alternate day, calcium carbonate and Vitamin D3 once a day, Pantoprazole 40 mg twice a day, multivitamin once a day and Febuxostat 40 mg once a day. In the early week of May 2017 patient has developed swelling on face and body, mild hypertension, and her lab investigations showed urea 84 mg/dL, creatinine 2.46 mg/dL, uric acid 12.4 mg/dL, total calcium 8.9 mg/dL, phosphorous 3.60 mg/dL, alkaline phosphatase 85 U/L, total protein 5.60 g/dL, albumin 3.13 g/dL, A:G ratio 1.27. In urine total protein was 60.10 mg/dL, creatinine 118.21 mg/dL, protein and creatinine ratio 0.51. Urine Albumin +++ and 24 h urinary proteins was 1528 mg/day. Patient was provisionally diagnosed with nephrotic syndrome/focal segmental glomerulosclerosis (FSGS). Kidney biopsy showed renal parenchyma is represented by upto 6 glomeruli and tubule-interstitium, 2 glomeruli are globally sclerosed, 1 obsolescent glomerulus shows segmental sclerotic lesion at one level. 10-15 % interstitial fibrosis with moderate acute tubular injury, mild focal nonspecific chronic inflammation and mild to moderate atherosclerosis. She came to CCRUM headquarters in the last week of May 2017 for consultation for any role of *Unani* System of Medicine in case of nephrotic syndrome.

In review of *Unani* classical literature and scientific studies conducted, many plants have shown nephroprotective activities in different models. After history, clinical examination and analysis of lab reports a HUF was prepared to treat the patient. Herbal *Unani* formulation (HUF) comprising of four *Unani* herbs, viz. Revand Chini (Rheum emodi wall.), Khar-e-Khasak-Khurd (Tribulus terrestris L.), Filfil Siyah (Piper nigrum L.) and Zanjabeel (Zingiber officinale Rosc.) in a particular ratio. All the ingredients of the plants are mentioned in *Unani* medical literature for the treatment of Du‘f al-Kulya Barid. The therapeutic actions of single drugs are resolvent, diuretics, lithotriptic, deostuent, anodyne, analgesic, anti-inflammatory, antidote, antiseptic, blood purifier, tonic for kidney and liver. Phyto-constituents and various extracts of these plants have already showed nephroprotective activity in different experimental models.

The patient was advised to take 10 g powder of HUF with *Arq Mako* and *Arq Kasni* (distillate of *Solanum nigrum* L. and *Chichorium intybus* L.) 20 mL each, diluted with equal amount of plain water in the morning and evening empty stomach. Patient was advised to visit the physician at regular interval and also advised regarding the consumption of water not greater than the level of diuresis with restriction of salty diet like canned soups, canned vegetables containing salt, luncheon meats including prepared foods, fast foods, soy sauce, ketchup, and salad dressings. The treatment continued for four months and
Results
Swelling on face and body disappeared and patient felt quite normal and was performing her day to day activities independently after one and half month of treatment. The kidney function report in the end of Sept. 2017 significantly reduced the urea from 84 to 48 mg/dL, creatinine from 2.46 to 1.35 mg/dL and uric Acid from 12.40 to 3.30 mg/dL in comparison to the report of May 2017 (baseline).

The patient witnessed an increase in her renal function parameters in July 2017. The reported urea was 106 mg/dL, creatinine 2.99 mg/dL, uric Acid 9.5 mg/dL, total calcium 9.0 mg/dL, phosphorous 4.60 mg/dL, alkaline phosphatase 81 U/L, total protein 6.0 g/dL, albumin 3.33 g/dL, A:G ratio 1.25, sodium 135.0 mEq/L, potassium 4.18 mEq/L, chloride 105 mEq/L. In urine total protein 60.10 mg/dL, creatinine 118.21 mg/dL, protein and creatinine ratio 0.51 (Table 1).

Analysis of investigations revealed that HUF reduces serum creatinine, urea and uric acid level. Clinical examination revealed reduction in swelling on face and body and blood pressure in comparison to her base line reading by (Table 2). However, the leakage of protein in urine is not significantly controlled.

Discussion
According to principles of diagnosis and treatment of Unani medical literature for Du‘f al-Kulya Barid, the prescribed drugs are hot and dry temperament in nature, that helps the body to maintain the required temperature of the organs for performing their normal function. Unani scholars have described various drugs for the treatment of kidney disorders. The ingredients of herbal Unani formulation have resolvent, diuretics, anti-inflammatory, antiseptic, blood purifier, tonic for kidney and liver properties. Apart from that actions mentioned in Unani classical literature many scientists proved their nephroprotective activity in various animal models as said earlier in material and method. The pharmacokinetics and dynamics of these drugs are not present in Unani literature, but these medicines are beneficial in many ways, if used on the line of treatment as mentioned in Unani literature. Now a day several of them are claimed for the management of kidney disease and some of them are scientifically proved in experimental models. Systematic research is need of the time to explore the phyto-constituents of herbal Unani drug/formulations and their pharmacodynamics and kinetics. The significant reduction in serum creatinine, urea and uric acid level swelling of body and face, blood pressure after four month of therapy showed that HUF is effective in a case of nephritic syndrome. This type of clinical and laboratory finding will be helpful for scientists, physicians, researchers working in the field of nephrology and provide better and safe medicines to patients.

References
4 Tabri R, Firdaus Ul Hikmat fit Tib, (Urdu translation by Rashid Ashraf Nadvi), Chapter IX, (CCRUM publication, New Delhi), 2010, 528-535.


