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Nephrotic syndrome treatment with Unani formulation

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Abstract

Nephrotic syndrome (NS) is a glomerular disorder characterized by significant proteinuria, hypoalbuminemia, hyperlipidemia, and edema, often resulting from increased permeability of the damaged renal glomerular basement membrane. Nephrotic pattern resembles to Du'f al-Kulya Barid in Unani medical literature. It's condition in which feathers don't perform their normal functions because of impairment in their disposition in their humoral status or anomalies in their structure due to ascendance of Barudat (*Dispassionateness*) in order. This case study focuses on a 52-year-old female diagnosed with idiopathic nephrotic syndrome, highlighting her clinical presentation, conventional treatment with steroids, and subsequent management with Unani medicine. The patient, dissatisfied with allopathic therapy, sought treatment at the Central Research Institute of Unani Medicine, Lucknow. The prescribed Unani regimen included various herbal formulations targeting liver and kidney functions. The patient's progress was monitored through clinical examinations and biochemical assessments over a three-month period. The results revealed significant improvements in laboratory parameters, including reduced urea, creatinine, and uric acid levels, as well as the resolution of edema and other symptoms. The Unani treatment utilized medications such as Sharbat Buzoori Moatadil, Majoon Dabeed ul Ward, Arq kasni and Jawarish Jalinoos, known for their diuretic, anti-inflammatory, and general tonic properties. The patient's response suggests the potential efficacy of Unani formulations in managing nephrotic syndrome. However, further research is warranted to explore the pharmacokinetics and pharmacodynamics of these formulations for a comprehensive understanding of their therapeutic effects. This case underscores the importance of integrating traditional medical approaches for improved and safe management of nephrotic syndrome.

Keywords: Sharbat Buzoori Moatadil, Majoon Dabeed ul Ward, Arq kasni and Jawarish Jalinoos

Introduction

Nephrotic pattern (NS) is a glomerular complaint generally characterized by gross proteinuria, hypoalbuminemia, hyperlipidemia, and supplemental edema and colorful complications. It's caused by increased permeability through the damaged basement membrane in the renal glomerulus, especially contagious or thrombo- embolic. It results from an abnormality of glomerular permeability that may be primarily due to a natural renal complaint in the feathers or secondary due to natural infections, diabetes, systemic lupus erythematosus, neoplasia, or certain medicine use [1-2] Nephrotic diseases (ND) are an suggestion of the intention of commodity wrong amongst order function, which is generally caused by damage to the clusters of small blood vessels (Glomeruli) that filters destruction and maintains the equilibrium of water into the blood [3-4]. In this condition, the mortal body excretes redundant protein (Massive proteinuria > 3 g in 24 h) in urine, redounded in low blood protein situations. Other common factors like; high- cholesterol situations (Hypercholesterolaemia > 7 mmol/ l), hypercoagulability and high triglyceride situations in blood but low situations of albumin (Hypoalbuminaemia < 3 g/dL) in the blood causes swelling of bases, ankles, stomach, and eyes occasionally the face (oedema due to sodium and water retention) [5-6]. Pathogenesis Common instantiations of the pattern are proteinuria, edema, hypoalbuminemia, hyperlipidemia, and hypercoagulability. Pathogenesis of proteinuria A disfigurement in tubular transport due to either from chemicals like Gold, Anti-microbial agents, Antineoplastic, Allopurinol, NSAID, Tenofovir or disfigurement in the bottom process [7]. Due to a disfigurement in tubular transportation protein excretion increases, causes increased GFR. Further due to Glomerular structure changes the endothelial cell face of GBM or podocytes get damaged, and a large quantum of protein leaks out in urine [8-9].

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2. Pathogenesis of hypoproteinemia Hypoproteinemia favours supplemental filtration; the loss of tube water into the interstitial space leads to hypovolemia, which triggers thirst, the release of ADH and rennin- angiotensin-aldosterone system^[10]. Increased water input and increased reabsorption of sodium chloride and water offer to sustain the edemas, while aldosterone promotes renal excretion of K and H³. Pathogenesis of albuminuria leads to develop hypokalemia and alkalosis^[11]. It occurs due to redundant loss of albumin demonstrated by serum electrophoresis. The attention of larger proteins actually tends to increase because of the dropped oncotic pressure in the vascular system leads to increased filtration of tube water around the fringe and therefore to a attention of the other blood ingredients^[12] supplemental filtration capillaries are eased not only by the dropped oncotic pressure but also by damage to the capillary wall that may likewise be subject to seditious changes^[13]. As a result of protein filtration in the fringe, protein attention and oncotic pressure rise in the interstitial spaces, so that the filtration balance shifts in favour of the interstitial space^[14]. 4. Pathogenesis of edema. The classical explanation for edema conformation is a drop in tube oncotic pressure, as a consequence of low serum albumin situations, causing extravasations of tube water into the interstitial space^[15]. The performing compression in tube volume leads to stimulation of the renin- angiotensin-aldosterone axis and antidiuretic hormone. The attendant retention of sodium and water by the renal tubules contributes to the extension and conservation of edema^[16-17]. 5. Pathogenesis of thrombosis Cases with nephrotic pattern are at increased threat for thrombosis due to urine losses of antithrombotic proteins similar as antithrombin III and proteins C and S, increased prothrombotic factors similar as increased platelet number, platelet activation and aggregation and increased situations of factor V, VIII, Von Willebrand factor, α 2- plasmin asset, plasminogen activator asset 1, fibrinogen, implicit central hypovolemia, immobility and increased prevalence of infection^[18]. Nephrotic pattern resembles to Du'f al-Kulya Barid in Unani medical literature. It's condition in which feathers don't perform their normal functions because of impairment in their disposition in their humoral status or anomalies in their structure due to ascendance of Barudat (*Dispassionateness*) in order. The accumulation of cold humours in order cause revision in structure and function of order especially in excretion and reabsorption of fluid through proximal tubules. The volume and quality of urine in terms of their normal colour and appearance is altered^[19-22]. In unani system of medicine not much literature is present for nephrotic syndrome. But as the condition is caused because of alteration in humoral status Ie baris so treatment is hot and wet in the form of drugs and procedures^[31]. Moreover, Muqawwiyat also needed to tone up the

strength of the organ. Same mode of treatment is used in the current case study.

Case Report

A 52-year-old female was previously diagnosed with nephrotic syndrome in a reputed allopathic hospital, in Lucknow. She was on steroids, pantaprazole 40 mg twice a day, calcium carbonate and vitamin D₃ once a day, prednisolone 40mg once a day and multivitamins once a day. She came to OPD of Central Research Institute of Unani Medicine, Basaha, Kursi Road, Lucknow with a complaint of pain in her lower back right and left side, abdominal pain was severe in intensity, diffuse in nature, both feet and legs, swelling around the eyes, and generalised body swelling. She had no fever, recent illnesses, or hematuria but had a history of mild hypertension, chronic constipation and poor diet. She went under treatment by different doctors and hospitals but could not relief completely and got irritated by taking allopathic medications. She was conscious and alert on physical examination, not pale or jaundiced, with bilateral pitting pedal oedema of 4+. There was generalised anasarca. Her blood pressure was mildly high (160/100 mm Hg), pulse rate was 82 beats/min, and temperature was 36.5 °C. Laboratory findings reported in month of august 2023 showed urea 83.78 mg/dL, creatinine 5.59 mg/dL, Uric acid 8.57 mg/dL, Total Serum sodium 5.59 mg/dL, Total calcium 8.18 mg/dL, total protein 6.6 mg/dL, albumin 4.4g/dL, Blood Urea Nitrogen 145.13 mg/dL and whole abdominal Scan Mild hepatomegaly with grade 1 fatty changes. Mild increased cortical echoes and irregular margins of bilateral kidneys. Since the patient was from a very lower middle-class background she wanted to start unani therapy and didn't want any further investigations. Hence, diagnosis of idiopathic nephrotic syndrome (NS) with fatty liver secondary to poor diet was made.

Main Therapy

As per references available in the classical Unani literature, sharbat bazoori moatdil, as prescribed in a dose of 10 ml (2 tsf) twice a day, majoon dabeed ul ward 5 gram twice a day, arq qasni 20 ml diluted with water, habb e asgandh 2 pills thrice a day, habb e Mubarak 2 pills twice a day, habb e zehar mohra 2 pills twice a day, safoof tabkhir 5 gram twice a day, jawarish jalinoos 5 gm (Table no. 1). Hence the goal of therapy was to correct the liver and kidney functions which directly or indirectly. Patient was advised to visit the physician at regular intervals and also advised regarding the water consumption not greater than level of diuresis with restriction of salty diet, fast foods, ketchup and salad dressings. Treatment continued for 4 months with regular clinical and biochemical check-ups.

Table 1: Medication Details

Formulation	Dosage	Timings	how to take
Sharbat bazoori moatdit	10 ml	Bd empty stomach	With plain water
Majoon Dabeed ul ward	5 gm	Bd empty stomach	With plain water
Arq qasni	20 ml	Bd empty stomach diluted with water	With plain water
Habb e zehar mohra	2 tablets	Bd	With plain water
Jawarish Jalinoos	5 gm	Bd after meal	With plain water
Habb e asgandh	2 tablets	Bd empty stomach	With plain water
Dawa us shifa	2 tablets	Bd	With plain water

Results

Laboratory findings KFT reported in first week of october 2023 showed reduction of urea from 83.78 to 40.0 mg/dL, creatinine from 5.59 to 1.67 mg/dL, Uric acid from 8.57 to 6.2 mg/dL, Total Serum sodium 5.59 mg/dL, in comparison to august, 2023 report. Patient was able to perform day to day activities without pain, and there was marked disappearance of swelling of both feet and legs, around the eyes, and generalised body swelling.

The patient's reports further showed marked improvement in November, 2023. The reported urea was 36.0 mg/dL , creatinine 1.01 mg/dL, uric acid 6.7 mg/dL, Total calcium 8.18 mg/dL, alkaline phosphates, phosphorus, total protein 6.2 mg/dL, albumin 4.8 g/dL, sodium 137.1 mmol/L, potassium 3.7 mmol/L, chloride, calcium 8.28 mg/dL, Blood Urea Nitrogen 145.13 mg/dL. In urine total protein, creatinine and protien creatinine ratio

Table 1: Effect of formulation on biochemical parameters in blood and urine

Parameters	At baseline Blood	After 4 months of treatment
Urea	83.78	28.3
Creatinine	5.59	0.77
Uric acid	9.4	5.6
Total Calcium	8.18	8.12
Phosphorus	4.35	3.03
Alkaline Phosphatase	130.2	7.30
Total Protein	6.6	6.04
Albumin	4.4	4.5
A:G ratio	3.68	3.69
Sodium	130.2	130.8
Potassium	3.82	3.6
Chloride	108	105.1
Glucose(F)	72	78
Glucose(PP)	124	122
Urine		
Total Protein	61.20	48.80
Creatinine	94.20	52.23
P:C ratio	0.64	0.93
Signs and symptoms	Initial value	After 4 months of treatment
Weakness	++++	+
Loss of appetite	+++	+
Odema	++	0
Dyspnea on walking	++++	+
Blood pressure (mm Hg)	160/100	130/90
USG	Mild Hepatomegaly with Grade fatty changes.	Mild increased cortical echoes and irregular margins of bilateral kidneys.

Discussion

According to unani literature, scholars prescribed various medications as nephroprotective and to treat various kidney disorders. Management approach toward a patient with nephrotic syndrome depends on the presentation of symptoms and patient desire. Unani scholar describes that Ghair Tabayi Khilt Balgham (Abnormal phlegm) is cause of Du'af-al-kulya barid hence, in Mundij Balgham and Mushil is the plan of treatment to eliminate it. The prescribed formulation in this study composed of murakkabat (Compound drugs) having phyto-constituents with possible beneficial properties such as Mundij (Concoctive), Muhallil al-Waram (Anti-inflammatory), Musakkin Alam (Analgesic), Mulattif (Demulcent), and Muqawwie Aam (General tonic) , diuretics, blood purifier, liver and kidney tonics [23-24].

Sharbat Buzoori Moatadil mainly acts as diuretic (*Mudirr-e-baul*) [25]. Its chief ingredient *Bekh-e-Kasni* (*Cichorium intybus* root) with potential effect as anti-inflammatory and nephroprotective activities [26]. *Tukhm-e-kheera* (*Cucumis sativus*) shown to have anti-urolithiatic activity by hastening the process of dissolving the stones in kidney [26].

Arq kasni *Tukhm-e-Kasni* (*Cichorium intybus*), *Afsanteen* (*Artemisia absinthium*), *Izkhar Makki* (*Cymbopogon jwarancusa*), *Zarawand Mudahraj* (*Aristolochia rotunda*) *Gul- e-Ghafis* (*Gentiana dahurica*), and *Tukhm-e-Kasoo* (*Cuscuta reflexa*) obtained as *Mudirr-e-Baul* (diuretic) drugs, may excrete out the raised conjugated bilirubin; water soluble bile through urine, and can help to flush out easily elevated unconjugated bilirubin possibly by converting into conjugated bilirubin; water soluble bile from kidney [27].

Jawarish Jalinoos (JJ) is a classical semisolid Unani formulation having *Muqawwi-e-Aam* (General tonic), JJ is indicated for the management of *Zof-e-Aza-e-Raeesa* (weakness of vital organs), *Zof-e-Kabid* (Weakness of liver), *Khafqan* (Palpitation), *Dard-e-Sar* (headache), *Kasrat-e-Baul* (polyurea), and *Hissat-e-Kulliyya wo Masana* (urinary stones) [28-29].

Majoon Dabeed ul Ward have *Muhallil al-Waram* (Anti-inflammatory/resolvent) property.

Although pharmacokinetics and pharmacodynamics of these drugs are not clear in unani literature but the actions of these drugs showed beneficial results as nephroprotective activities in animal models proved in various scientific studies. These medicines when used in management of

kidney disease according to the line of treatment mentioned in unani classical literature showed magnificent results and some of them also proved in various scientific studies.

Further research needs to be done to evaluate the phyto-constituents of Unani drug/formulations and their pharmacodynamics and kinetics. The reduction in serum creatinine, urea and uric acid levels, swelling of body and

face, blood pressure after giving the therapy for 4 months showed that the formations used is effective in a case of nephrotic syndrome. This type of clinical and laboratory study is the need of the hour for scientists, physicians, researchers giving their efforts and time in the field of nephrology to provide better and safe medicines.

Sharbat-e-bazoori moatadil: 25-50 ml.	Majoon Dabeed ul ward (NFUM)
<ol style="list-style-type: none"> 1. Bikh -e-kasni 100 gm 2. Bikh-e-Badiyan 50 gm 3. Tukhme-kharbuza 50 gm 4. Tukhm-e-kasni 50 gm 5. Tukhm-e-khayarza 50 gm 6. Tukhm-e-khiyar 50 gm 7. Khar-e-khasak khurd 50 gm 8. Qand Sugar 500 gm 9. Water Water As per need 	<ol style="list-style-type: none"> 1. Izkhar Makki 20 g. 2. Agar (Ood) 20 g. 3. Balchhar 20 g. 4. Banslochan 20 g. 5. Tukhm Kaasani 20 g. 6. Tukhm Kasoos 20 g. 7. Tukhm Karafs 20 g. 8. Taj Qalmi 20 g. 9. Darchini 20 g. 10. Zarawand Mudahraj 20 g. 11. Qust Shireen 20 g. 12. Gul-e-Surkh 300 g. 13. Gul-e-Ghafis 20 g. 14. Luk Maghsool 20 g. 15. Majeeth 20 g. 16. Qiwam Shakar 2.4 kg 17. Zafran 2.9 g. 18. Arq Gaozaban 30 ml 19. Mastagi 20 g. 20. Ghee 5 g. 21. Action Mudirre bawl and Muhallil waram 22. Therapeutic Use In Waram Jigar, Waram Meda, Waram Rahim, Zofe Jigar and Zofe Meda.
Jawarish Jalinoos	
<ol style="list-style-type: none"> 1. Mastagi 25 g 2. Sumbul- Teeb 10 g 3. Heel Khurd 10 g 4. Saleekha 10 g 5. Darchini 10 g 6. Khulanjan 10 g 7. Qaranfal 10 g 8. Sad Kufi 10 g 9. Zanjabeel 10g 10. Filfil Daraz 10 g 11. Filfil Siyah 10 g 12. Qust Shirin 10 g 13. Oode Balsan 10 g 14. Asaroon 10 g 15. Habbul Aas 10 g 16. Chiraita Shireen 10 g 17. Zafran 10 g 18. Sugar/Honey 	

Conflict of Interest

Not available

Financial Support

Not available

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