

# Avicenna-inspired and conventional medicine-based dietary treatments for renal atrophy

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## DESCRIPTION

Renal atrophy is one kidney condition that causes nephron loss, whereas tubular atrophy is the loss of parenchymal renal cells that characterises chronic kidney disease (CKD). One of the characteristics of chronic renal disease is tubular atrophy. Throughout the past ten years, there has been an upsurge in the use of complementary and alternative medicine (CAM) in the treatment of chronic illness in the United States. As a preventive and therapeutic method, the management of CKD based on herbal traditional medicine is advised, and medicinal plants with kidney-protective properties are prescribed. With a history spanning more than a thousand years, traditional Persian medicine (TPM) is a temperamental, age-old form of medicine. Depending on the stage of the disease, there are many treatments for CKD. CAM use in the treatment of chronic disease The normal interaction of four fundamental elements—hot, cold, wet, and dry is what creates temperament. Additionally, dystemperament occurs when the temperament of the entire body or an organ changes. The kidney dystemperament occurs when the kidney's function is disrupted. "Hozal-e-Kolye" can result from these conditions. This study aimed to explain HK (the same tubular atrophy considering their similar symptoms) and introduce some foods as a complementary food management based on TPM. HK in TPM occurs when the kidney becomes thin, which means that its fat gets low or is eliminated [1,2].

This is a review study using the keyword "Hozal-e-Kolye" (the same tubular atrophy) to search the most important clinical and pharmaceutical TPM textbooks (not derived from other books), such as "Avicenna's" The Canon of Medicine (10th and 11th centuries), "Exir-e-Azam" by Chishti (19th century), "Tuhfat Al-momenin" by Tonkaboni (17th century), and " After that, all of the foodstuffs that were taken out of the study were searched in scientific data banks like Medline using the following keywords to find any activities that were related to improving kidney function: renal atrophy, tubular atrophy, kidney disease, end-stage renal disease, and chronic kidney disease Finally, a table with the results was created [3].

When the impaired kidney function continues for at least three months, CKD is diagnosed. Due to the presence of kidney damage, this disorder causes a decrease in kidney function. The pathophysiology of CKD complications is heavily reliant on the glomerular filtration rate (GFR). Proteinuria plays a significant role in the progression of CKD as pathology. Kidney failure occurs when the GFR is less than 15 ml/min/1.73 m<sup>2</sup>, necessitating dialysis

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**Word count:** 1049 **Tables:** 00 **Figures:** 00 **References:** 05

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**Received:** 02.01.2023, Manuscript No. ipaom-23-13519; **Editor assigned:** 04.01.2023, PreQC No. P-13519; **Reviewed:** 16.01.2023, QC No. Q-13519; **Revised:** 21.01.2023, Manuscript No. R-13519; **Published:** 28.01.2023

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or transplantation for treatment. fluid and electrolyte imbalance, acid base abnormalities, carbohydrate intolerance, calcium and phosphate abnormalities, metabolic bone disease, hematologic abnormalities, gastrointestinal abnormalities, dermatological abnormalities, and neuromuscular abnormalities (impaired ability to excrete leading to sensitive hypertension and edema due to reduced GFR), The kidney and the small intestine are the primary sites of phosphorus homeostasis, and these patients are at risk for cardiovascular diseases. Additionally, nocturnal polyuria, a symptom of renal insufficiency and CKD, occurs at night. The majority of the phosphate that is consumed is excreted in the urine. The renal tubular defect causes hypophosphatemia. Although the proximal tubule of the kidney absorbs 80% of phosphorus, a tubular defect like tubular atrophy prevents this process from occurring. As a result, this condition causes hypophosphatemia and phosphaturia. The phosphaturia causes the color of the urine to become white. The renal tubules play a significant role in maintaining homeostasis in the body. Phosphate, glucose, amino acids, bicarbonate, and sodium are transported primarily through the proximal tubules. These tubules have either primary or secondary dysfunctions. A number of conditions, including aminoaciduria and hypophosphatemia, arise when these tubules are damaged. The majority of renal tubulopathies are characterized by polyuria, growth failure, and resistant rickets (in children). Phosphaturia is what causes white urine and is present in tubular dysfunction [4].

Antiglomerular basement membrane disease, medullary cystic kidney disease type I (a mutation in the mucin 1 gene), chronic tubulointerstitial diseases, allergic interstitial nephritis, granulomatous interstitial nephritis, vesicoureteral reflux and reflux nephropathy, lithium salts, the calcineurin inhibitor (CNI) immunosuppressive agent's cyclosporine and tacrolimus

Theoretically, any organ of the body has a typical temperament, according to TPM scholars. Individual function is excellent in an ideal state of health, whereas dystemperament occurs when the body as a whole or an organ's temperament changes. To put it another way, it develops when there is an imbalance in the quality or quantity of humors, such as phlegm, bile, blood, and black bile<sup>13</sup>. This condition is called kidney dystemperament,

and it occurs when the kidney's temperament changes and its function is disrupted. "Hozal-e-Kolye" (HK) may result from this kidney disorder. In TPM, HK occurs when the kidney becomes thin (its fat decreases or disappears), hot, or cold. At high kidney temperatures, the kidney fat is lost due to the warmth, and at low kidney temperatures, the kidney equalizer is disrupted. The TPM community held the belief that HK was brought on by a variety of factors, including kidney dystemperament and evacuation (in TPM, evacuation refers to the expulsion of a great deal of fluid from the body, including excessive hemorrhage, diarrhea, severe vomiting, the expulsion of excess sperm and the excessive use of purgative or diuretic medications, which results in severe dehydration). White urine, polyuria, weight loss, persistent low back pain, and low libido are all signs of HK<sup>11, 12, 13, and 14</sup>. According to some TPM researchers, the HK process's kidney fat loss is to blame for eye weakness and headaches. The other book stated that mild pain in the back of the head is one of the HK symptoms [5].

## CONCLUSION

The causes of tubular atrophy in both CM and TPM serve as the foundation for treatment. The diet plays a significant role in both of these treatments. In Chinese medicine, protein restriction is discussed. However, some researchers have demonstrated that a restricted protein diet supplemented with keto analogues (a diet of essential amino acids such as phenylalanine and Valine) can delay the progression of CKD without malnutrition. In TPM, correction of the kidney dystemperament is done by some foodstuffs prescribed in addition to fattening foodstuffs, including some nuts and seeds, meats, and natural drugs. In CM, some chemical drugs are prescribed instead of that In CM, nutrition therapy is recommended to slow the progression of CKD and prevent malnutrition. According to the findings, certain foodstuffs should be avoided in CM.

## ACKNOWLEDGEMENT

None.

## CONFLICT OF INTEREST

None.

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