

Use of Traditional Chinese Veterinary Medicine to Treat Chronic Kidney Disease in Dogs and Cats: Four Cases

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Abbreviations

CKD	Chronic kidney disease
HEG	Herbal extract granules
IRIS	International Renal Interest Society
TCVM	Traditional Chinese Veterinary Medicine
USG	Urine specific gravity

Abstract

Chronic kidney disease is defined as the inability of the kidneys to efficiently filter the blood of waste products for over 3 months. In Traditional Chinese Veterinary Medicine, chronic kidney disease is often caused by 1 or more of the following patterns: Kidney *Qi*/*Yang* Deficiency, Kidney *Yin* Deficiency, Kidney *Qi* + *Yin* Deficiency, and Kidney *Jing* Deficiency. As seen in these case examples, acupuncture and Chinese herbal medicine can be used effectively for the treatment of chronic kidney disease in dogs and cats.

Case Studies

Note: all Western/allopathic diagnostics and therapies were provided by veterinarians not associated with the authors. When information such as blood pressure measurement, urinalysis results, or blood parameters is absent in this report, it was not available to the Traditional Chinese Veterinary Medicine (TCVM) practitioners/authors. For these reasons, complete staging information from the International Renal Interest Society (IRIS, www.iris-kidney.com) could not be provided for all cases.

Case 1

A 13-year-old 36-kg castrated male Alaskan malamute was presented for TCVM evaluation and treatment for renal disease. The patient had a 3-year history of urinary incontinence and was recently hospitalized for severe renal disease. It was not clear from the records if this was an acute-on-chronic crisis or a primary acute process that led to permanent renal damage, as no diagnostics were available to review prior to presentation to the emergency care veterinarian for this condition. The patient was hospitalized

for an undisclosed number of days with minimal improvement. In the 2 weeks between hospital discharge and presentation to the TCVM practitioner, he remained inappetent and had lost 14 kg body weight. Additionally, he was weak and able to walk only about ½ mile per day instead of his usual 3 miles. Limited blood testing results provided at presentation showed a BUN of 99 mg/dL (range, 6 to 31) and a creatinine of 7.7 mg/dL (range, 0.5 to 1.6). IRIS staging was not done as the lack of documented history precluded determination of whether the renal disease was acute or chronic. If chronic, it would have been IRIS stage 4 chronic kidney disease (CKD); sub-staging was not possible.

On TCVM examination, the dog’s ears and back were cool to the touch, and he preferred to be warm. The pulse was deep and weak, and tongue pale and wet. A TCVM diagnosis of Spleen *Qi* and Kidney *Qi*-*Yang* Deficiency was made based on signs of inappetence, weight loss, lethargy, urinary incontinence, elevated renal values, and this TCVM exam. An acupuncture treatment was performed with dry needles at GV-20 and traditional points *Bai Hui* and *Shan Gen*, plus electroacupuncture for 20 minutes (10 minutes at 20 Hz + 10 minutes at 80-120 Hz using the dense and disperse setting) with stimulation at the following pairs of points: BL-20 bilaterally; BL-21 bilaterally; BL-26 bilaterally; and ST-36 paired with GB-34. Herbal formulas *Xiang Sha Liu Jun Zi* (Eight Gentlemen, Jin Tang Herbals, Reddick, FL) (5 g, BID, PO) for 4 weeks, and *You Gui Wan* (Jin Tang Herbals) (2.5 g, BID, PO) for 4 weeks were prescribed. *Xiang Sha Liu Jun Zi* tonifies Spleen *Qi* and drains Damp (1). *You Gui Wan* warms Kidney *Yang* (1). The owner declined TCVM food therapy recommendations.

The dog responded well to acupuncture. He ate an entire bowl of food immediately after the needles were withdrawn. This was the first time he had eaten this much food in one sitting since his acute illness. After 2 biweekly acupuncture sessions and 1 month of daily herbal medicine, his appetite was normal, he could walk about 1.5 miles daily, and he had gained about 4.5 kg. Diagnostic testing was either not performed or results were not available during this time.

Four weeks after the initial visit, the patient was doing well. Appetite and water intake were reported to be normal. He appeared happy, could maintain regular exercise, and weighed a healthy 45.5 kg. However, episodes of urinary incontinence continued. His tongue was pale, and his pulse was still weak. The BUN was 88 mg/dL, and creatinine was 8.1 mg/dL, similar to initial presentation. The changes in his clinical signs and BUN and creatinine levels indicated that Spleen *Qi* Deficiency was resolved, but Kidney *Qi* Deficiency persisted. He was treated with the following acupuncture protocol: 1) dry needles (all points bilateral as appropriate) at BL-23, BL-26, KI-3, KI-7, KI-10, and ST-36; and 2) aquapuncture (cyanocobalamin 1000 mcg/mL, 0.2 mL per point) at CV-4, CV-6, BL-22, and BL-39. *Xiang Sha Liu Jun Zi* was discontinued. *You Gui Wan* was continued at the current dose. *Suo Quan Wan* (Jin Tang Herbals) was added at a dose of 4 g, PO, BID. *Suo Quan Wan* (Stopping Waterfall) is used for urinary incontinence involving Kidney *Qi* and Yang Deficiencies (1).

About 3 months after the first visit, the urinary incontinence resolved. The patient continued to be treated with acupuncture once every 3 to 5 months as needed for maintenance. Overall, he had a great quality of life with normal appetite and water intake and the ability to enjoy long daily walks. However, his BUN continued to be elevated, usually around 80 to 100 mg/dL, and the creatinine levels ranged from 8 to 12 mg/dL. He died 3 years later at the age of 16 years as a result of congestive heart failure, per the owner and referring veterinarian.

In TCVM, urinary incontinence and CKD can both have an underlying TCVM pattern diagnosis of Kidney *Qi* Deficiency. Urinary continence can also be affected by Spleen *Qi*. While a full discussion is outside the scope of this paper, the resolution of urinary incontinence in a patient with Kidney *Qi* Deficiency is an indication of improved Kidney *Qi*.

This case demonstrates the successful use of acupuncture and Chinese herbal therapy to manage poor appetite, urinary incontinence, lethargy, and exercise intolerance in a dog with CKD. Despite persistently and significantly increased BUN and creatinine, the patient had a good quality of life until he passed away, reportedly from other causes.

Case 2

A 10-year-old 32.3-kg spayed female mixed breed dog was presented with a 1-year history of CKD. Her stool, appetite, and water intake were within normal limits. Her BUN was 95 mg/dL, and creatinine was 4.7 mg/dL, indicating IRIS stage 3 renal disease. Additional diagnostic results were not available at the time of presentation; therefore, sub-staging was not possible. Upon TCVM examination, her body felt hot to the touch. She was panting more than normal, and preferred cool places. The skin and hair coat were dry and flaky, and chronic, active ear and skin infections were noted. The stifles were stiff bilaterally due to presumed osteoarthritis. She was tender on palpation of BL-23, the back-*shu* association point for the Kidney. Her tongue was red and dry, and pulse was fast and weak.

These signs point to a diagnosis of Kidney *Yin* Deficiency. The dog was prescribed acupuncture treatment and the herbal medicine *Liu Wei Di Huang Wan* (Rehmannia 6, Jin Tang Herbals), at a dose of 3.5 grams, PO, BID. This classic formula is used for Kidney *Yin* Deficiency to nourish Yin and support the Kidney (1). The owner declined TCVM food therapy recommendations. Acupuncture therapy included dry needling (bilaterally where appropriate and available) at GV-20, BL-23, traditional point *Shen-shu*, KI-3, KI-7, KI-10, and SP-6. The panting, hot body, dry skin, and red tongue were much improved after 2 monthly acupuncture sessions and 2 months of daily herbal medication. For another 6 months, she was given acupuncture treatments once every 2 to 4 months, and *Liu Wei Di Huang Wan* was decreased to 2 grams BID, for persistent but improved Kidney *Yin* Deficiency.

Nine months after her initial treatment, the BUN had decreased from a high of 95 to 51 mg/dL, and creatinine had decreased from 4.7 to 3.1 mg/dL. The patient enjoyed a good quality of life for an additional 5 years, until the owner reported that she was euthanized at age 15 years due to “poor quality of life,” presumably associated with the CKD.

This case demonstrates a significant improvement in available renal parameters, but still within IRIS stage 3 CKD. Better access to her diagnostic results would have allowed a more careful evaluation of her treatment, but this was not possible.

Case 3

A 16-month-old intact female Labrador Retriever presented for TCVM evaluation and treatment in July 2021 for presumptive congenital renal dysplasia, renal insufficiency, and urinary incontinence, as diagnosed by a board-certified internal medicine specialist 6 weeks prior to presentation. Records indicate the patient was IRIS stage 3, non-proteinuric and normotensive; however, specific blood

pressure measurements were not available. Laboratory results provided at presentation revealed an SDMA level of 30 µg/dL (normal range, < 14), creatinine 3.0 mg/dL, BUN 35 mg/dL, and urine specific gravity (USG) 1.005 (range, 1.015 to 1.050). Urine culture was negative for bacterial growth. She had chronic intermittent vomiting, semi-soft stool at the end of the day, good appetite, and was being fed a commercial renal support kibble and some canned food. She was receiving lactated Ringer's solution subcutaneously twice weekly and was given a daily probiotic (brand not reported).

A TCVM examination showed that she was a Fire constitution (one of 5 base personalities described in TCVM) with excellent *Shen* (a clear and bright mind). Her tongue was red and big; the pulse was deep, thin, and fast. Her ears, feet, head, and body were hot. No further abnormalities were noted. The TCVM pattern diagnosis was Kidney *Jing* Deficiency with Kidney *Qi* and *Yin* Deficiencies. The patient received dry needle acupuncture at points GV-14, GV-20, *Bai-hui*, BL-20, BL-21, BL-23, BL-24, *Shen-shu*, *Shen-peng*, and *Shen-jiao*. Vitamin B12, in the form of 1 mL cyanocobalamin (1000 mcg/mL) (Vedco), was used to inject *An-shen* and BL-39 bilaterally. Concentrated *Jin Suo Gu Jing* (Jin Tang Herbals) was prescribed (1.5 g, PO, BID) for Kidney *Qi* Deficiency, along with Concentrated *Rehmannia 6* (1 g, PO, BID) for Kidney *Yin* Deficiency. *Jin Suo Gu Jing* tonifies Kidney *Qi* and consolidates Kidney *Jing* (1). Green beans were added to the diet for snacks, as they are said to tonify Kidney *Yin* and strengthen the Spleen; home-cooking with an appropriate nutritionally-balanced recipe was not an option for the client.

The patient returned 4 weeks later and was reported to be doing well, with resolution of the vomiting and soft stool. Changes noted on examination included improvement to her body surface temperature (normal to a little warm), a tongue color that was pale purple in the caudal area (Kidney position), and pulses that felt thin, weaker on the left, slippery, wiry, and fast. While improvement was evident, the TCVM pattern diagnosis remained the same. She received dry needle acupuncture at GV-14, GV-20, *Bai-hui*, BL-21, BL-24, ST-36, and KI-3. She also received electroacupuncture at 20 Hz for 30 minutes at the following paired points bilaterally: BL-20, *Shen-shu*, *Shen-peng*, *Shen-jiao*, BL-25, BL-26, and BL-23. Cyanocobalamin (1000 mcg/mL) was injected subcutaneously at *An-shen* and BL-39. Concentrated *Jin Suo Gu Jing* was increased to 2 g BID, and Concentrated *Rehmannia 6* was increased to 1.5 g BID.

Eight weeks after initial presentation, the patient was reported to be doing well, with the exception of persistent urinary incontinence. She had vomited once that morning, which the owner attributed to overactivity. On examination,

her tongue was purple with a slight coating, and her pulse was superficial and even. Stomach *Qi* Rebellious, a TCVM pattern that describes vomiting, was added to her TCVM diagnoses. She received dry needle acupuncture at GV-20, ST-36, KI-3, KI-7, KI-10, BL-60, and LI-10. Electroacupuncture was performed at the 20 Hz setting for 30 minutes, using leads connecting BL-20 to BL-21, *Shen-shu* (left side) to *Shen-shu* (right side), GV-5 to *Bai-hui*, and BL-35 to *Shen-jiao*. She received cyanocobalamin (1000 mcg/mL) injected at PC-6, CV-12, and GB-34. Concentrated *Rehmannia 6* was discontinued, as her signs of Kidney *Yin* Deficiency had improved. *Jin Suo Gu Jing* was continued. Concentrated *Jin Gui Shen Qi* (Jin Tang Herbals) (1.5 g, PO, BID) was added for Kidney *Qi-Yang* Deficiency (1).

As of November 2022, the patient continued to do well 16 months after her initial visit. Serum chemistry values over the course of 18 months continued to be stable, with the November 2022 creatinine level being 2.7 mg/dL and BUN 37 mg/dL (SDMA not obtained), indicating IRIS stage 2 CKD. **Table 1** contains data on the known monitoring diagnostics for this patient, from just prior to presentation to the latest available. Her signs of incontinence waxed and waned but were overall improved. The dog received monthly acupuncture and BID herbal therapy consisting of a combination of 2 herbal formulas from the following, adjusted at each visit based on examination findings and history: *Rehmannia 6*, *Jin Gui Shen Qi*, *Jin Suo Gu Jing*, and *Epimedium Formula* (Jin Tang Herbals). *Epimedium Formula* is primarily used to support Kidney *Jing* (1). The patient was lost to follow-up after November 2022, as the owner acquired a TCVM practitioner closer to her home; however, during the treatment period the dog maintained a good quality of life with mild improvement in her IRIS staging.

Date	May 2021	December 2021	May 2022	September 2022
BUN (range, 9-31 mg/dL)	31	24	33	37
Creatinine (range, 0.5-1.5 mg/dL)	2.9	2.6	3.0	2.7
SDMA (range, 0-14)	34	36	38	NR
Phosphorus (in mg/dL)	NR	5	NR	NR
USG	NR	1.031	NR	1.031
Urine protein	NR	Neg	NR	Neg
Blood pressure (normal, 120/80)	NR	NR	NR	NR

Case 4

A 13-year-old neutered male domestic long-haired cat presented in April 2022 for TCVM evaluation and treatment of IRIS Stage 3 CKD of about 1.5 years' duration. In the same week as initial presentation, the patient's BUN was 25 mg/dL (range, 16 to 36); serum creatinine was 3.1 mg/dL (range, 0.8 to 2.4); serum phosphorus was 4.0 mg/dL (range, 3.1 to 7.5); SDMA was 19 (range, 0 to 14); Hct was 21.8% (range, 30.3 to 52.3); and reticulocytes were 3800/ μ L (range, 3000 to 50,000). Urinalysis and blood pressure results were not available; blood pressure was not obtainable due to patient demeanor, per the referring DVM's records. In cats, these lab results indicate IRIS stage 3 CKD with a non-regenerative anemia. Sub-staging was not possible due to lack of information. The patient also had documented kidney and bladder stones (confirmed with radiographs and abdominal ultrasound) and previous history of urethral obstruction and pyelonephritis, all of which are outside the scope of this writing and are only mentioned in terms of concurrent medications. At presentation, the patient was receiving prazosin (0.1 mg/kg, PO, 3 times daily), pradofloxacin (7.7 mg/kg, SID), lactated Ringer's solution (150 mL subcutaneously, SID), and an unnamed topical flea/tick prevention monthly. He was eating a prescription dry renal diet (K/d with chicken dry, Hill's Pet Nutrition Inc.). The owner reported normal activity for his age but with increased sleeping, normal appetite, and increased drinking and urination compared to other cats in the household without renal disease. His stool was reported as dry and hard, and he did not have any temperature preferences. He was not vomiting, and there was no coughing or sneezing.

On TCVM examination, the patient was aggressive. His ears and body were warm, tongue was red, and coat was unkempt. Pulse evaluation was not possible due to demeanor. The patient was diagnosed with Kidney *Yin* Deficiency as evidenced by the history of increased drinking and urination, hard and dry stools, warm body, and red tongue. Had the pulses been examined, they would have been expected to be deep, weak, thin, and fast, with the left side appreciated as being weaker than the right.

Limited aquapuncture was tolerated by the patient. Using a 1:1 ratio of cyanocobalamin 1000 mcg/mL diluted in sterile 0.9% saline, 1.5mL of this mixture was administered at the following points: GV-20, BI-23, BI-28, *Shen-shu*, and *Shen-peng*. As the first goal was to dissolve the urinary tract stones, Concentrated Crystal Stone Formula (Jin Tang Herbals), (0.4 g PO, BID) was prescribed. It was recommended to offer some canned version of the current renal diet in order to provide more moisture.

The patient continued to receive acupuncture for renal and bladder health every 3 to 6 weeks, based on the clinical signs and the owner's schedule. Because of persistent *Yin* Deficiency, the diet was changed from chicken-based to an ocean fish-based renal diet from the same manufacturer. According to TCVM food energetics, chicken is warming, and most ocean fish species are neutral to cooling and better support *Yin* (2). In September 2022, *Jin Gui Shen Qi* Concentrate (0.4 g, PO, BID) was added to support kidney health. From April 2022 to the time of this writing (July 2023), the patient's BUN, creatinine, and Hct were stable to improved, with reduction in IRIS staging from 3 to 2. SDMA and phosphorus levels continued to increase, although phosphorus remained within normal reference ranges. **Table 2** shows diagnostic results over time that were available to the authors.

Table 2: Abnormal and relevant diagnostic parameters over time for Case 4 (13yo MN domestic longhair feline), euhydrated according to records (NR = not reported)

Date	December 2021	April 2022 (presentation)	October 2022	February 2023	July 2023
BUN (range, 16-36 mg/dL)	29	25	28	30	27
Creatinine (range, 0.8-2.4 mg/dL)	2.7	3.1	3.1	2.8	2.8
SDMA (range, 0-14)	NR	19	21	33	31
Phosphorus (range, 3.7-7.5 mg/dL)	4.4	4.0	4.6	4.3	5.3
Hct (range 30.3-52.3 %)	27.9	21.8	26.5	22.7	28.5
USG	1.038	NR	NR	1.004	1.015

In retrospect, this patient could have benefited from prescribing *Liu Wei Di Huang Wan* for Kidney *Yin* Deficiency at his first visit, in addition to the Crystal Stone Formula. Additionally, changing the renal diet from a chicken to an ocean fish-based formula should ideally have been recommended earlier in the course of treatment for the same reason.

Commentary

Chronic kidney disease is one of the most common diseases in older cats. It is estimated that more than 50% of all cats and up to 7% of dogs will develop CKD (3, 4). In general, the long-term prognosis for dogs with CKD is guarded to poor, and the prognosis for cats is variable and unpredictable.

Research shows that the median survival from the time of diagnosis in dogs and cats is 226 days and 771 days, respectively, with a median survival of stage 3 CKD cats of 778 days (4, 5). In a more recent small study, the median survival time for dogs with stage 3 CKD was 11 months (range, 0.5 to 38 months) and with stage 4 CKD was 2 months (range, 0.3 to 13 months) (6). Cases 1 and 2 in this report survived 3 and 5 years, respectively, after the start of TCVM therapy, demonstrating survival far past the average. Survival information cannot be predicted for cases 3 and 4 as they were still alive at the time of this writing; however, the patient in case 4 has survived over 1000 days since the time of diagnosis, which is past the reported 95% confidence interval range (445 to 910 days) of stage 3 CKD cats in one study (5). Although no statistical information can be inferred from the cases presented, they suggest the need for clinical research to investigate whether a properly applied integrative approach can provide superior survivability compared to allopathic care alone in dogs and cats with CKD.

Chinese herbal medicine has been used to treat animals for thousands of years in China (7). Evidence-based studies indicate that herbal medicine and acupuncture can benefit humans and cats with CKD, improving both quality of life and survival times (8, 9). To the authors' knowledge, no similar studies in dogs have been published.

In Western medicine, CKD is diagnosed and staged using IRIS criteria. The IRIS staging can be used to aid in the monitoring and assessment of TCVM treatment outcomes but is not necessary for developing a TCVM diagnosis or treatment protocol. In some of the cases provided here, the authors had limited access to records of medical care provided by others and were largely unable to monitor these patients via complete IRIS staging. The BUN and creatinine levels were most often available from the primary care team and were used, in conjunction with clinical signs and repeated TCVM examinations, to assess patient response to treatment. The minimal goals in TCVM treatment of CKD are to slow progressive loss of kidney function, improve clinical signs (appetite and body weight), maintain quality of life, and achieve a greater life span than what is generally possible with a western medical approach alone. The more ambitious goal is to improve biochemical parameters associated with CKD, at least temporarily. The use of TCVM to aid in management of CKD entails acupuncture, herbs, and food therapy, modified as indicated by the specific TCVM pattern(s) seen in the patient.

TCVM pattern diagnosis and treatment for CKD

There are 4 primary TCVM patterns seen in patients with CKD: Kidney *Qi/Yang* Deficiency with or without Spleen *Qi* Deficiency, Kidney *Yin* Deficiency, Kidney *Qi/Yang* Deficiency

with Kidney *Yin* Deficiency, and Kidney *Jing* Deficiency. Each pattern, including clinical signs, examination findings, and TCVM treatment options is discussed in detail below. **Table 3** provides a quick reference of TCVM patterns and treatments for CKD in dogs and cats.

Table 3: Quick reference to TCVM pattern diagnosis and treatment of CKD in dogs and cats		
Pattern	Clinical Signs	Recommended Acupoints & Herbal Formulas
Kidney <i>Yang/Qi</i> Deficiency (± Spleen <i>Qi</i> Deficiency)	Weakness in back, poor dentition, hearing loss Dysuria or urinary incontinence Warm-seeking behavior, cold extremities General debility/weakness, edema in limbs or ventral abdomen Inappetence, loss of body weight Tongue: pale and wet Pulse: deep and weak (especially on the right)	BL-20, BL-21, BL-23, BL-24, BL-26, ST-36, LI-10, KI-3, KI-7, KI-10, CV-4, CV-6, <i>Shan-gen</i> for anorexia Formulas: <i>Jin Gui Shen Qi</i> or <i>You Gui Wan</i> (± <i>Xiang Sha Liu Jun Zi</i>)
Kidney <i>Yin</i> Deficiency (± Spleen <i>Qi</i> Deficiency)	Thin and shriveled (dehydrated) appearance, dry skin/haircoat, dry mouth/nose, warm and dry paws Warm ears/back, cool-seeking, panting (worse in the afternoon or at night) Generalized erythema, hearing loss, infertility Inappetence, loss of body weight Tongue: red and dry Pulse: deep, thready and weak (especially on the left)	BL-22, BL-23, SP-6, KI-3, KI-6, KI-7, KI-10, GV-14 Formulas: <i>Liu Wei Di Huang Wan</i> (± <i>Xiang Sha Liu Jun Zi</i>)
Kidney <i>Qi/Yang</i> + <i>Yin</i> Deficiency	Subdued manner, general weakness, fatigue Warm or cool-seeking, cold or hot ears/body, panting frequently (worse at night) Edema in limbs or ventral abdomen, sore lumbar region Poor teeth, hearing loss, copious clear urine or urinary incontinence Tongue: Swollen, pale, wet, or red/dry tongue Pulse: Weak, deep, or thin and fast	GV-3, GV-4, <i>Bai-hui</i> , <i>Shen-shu</i> , <i>Shen-peng</i> , <i>Shen-jiao</i> , BL-26, KI-7, KI-10, CV-4, CV-6, BL-22, BL-39 Formulas: <i>Jin Gui Shen Qi</i> given in the morning <i>Liu Wei Di Huang Wan</i> given in the afternoon
Kidney <i>Jing</i> Deficiency	Premature aging, bad teeth, brittle bones Poor neonatal growth and development Developmental bone diseases Congenital defects Tongue: pale or red Pulse: weak	BL-20, BL-21, BL-22, BL-23, BL-26, BL-39, KI-3, SP-3, ST-36, CV-4, CV-6 Formula: <i>Epimedium Formula</i>

TCVM treatment focuses on 4 main modalities: acupuncture, herbal medicine, food therapy, and *Tui-na* (medical massage), the latter of which will not be discussed here. From a TCVM perspective, all branches of TCVM can support kidney health by manipulating *Qi* (the body's energy), Blood and Body

Fluids, *Yin and Yang* (effectively thermoregulation and the sense of being hot or cold), and *Jing* (the essence that underlies the creation of all living things, simply considered to be genetics and the ability to reproduce). Healthy *Qi*, Blood, Body Fluid, *Yin*, *Yang*, and *Jing* are all necessary for normal kidney function. Imbalances (disease) within the kidneys will likewise affect these substances (10).

In the treatment of CKD, acupuncture relies on the stimulation of acupuncture points (acupoints) on the surface of the body to effect changes internally. Some methods of acupoint stimulation include the application of pressure (acupressure), insertion of a needle (dry needle acupuncture), application of a small electrical current across needles (electroacupuncture), and the injection of a liquid into an acupoint (aquapuncture). In the U.S., sterile cyanocobalamin is often used to stimulate acupoints as it is inexpensive, non-toxic, and does not sting when injected. Care should be taken not to use excessive amounts of cyanocobalamin in patients with advanced CKD due to the potential for reduced excretion of cyanide in these patients (11). Acupoints primarily along the Kidney meridian and several Classical acupuncture points are commonly used to treat diseases involving the kidneys. Individual points have specific actions, with some overlap between the actions of many of these points (12).

Like acupuncture, Chinese herbal therapy and food therapy have been used extensively in China to treat imbalances within the body. Both of these treatment branches depend on the actions of plants, animal-based ingredients, and minerals, all of which can affect change within the body. While herbal formulas have been used extensively to treat CKD in Asia, few studies are available in English to review their actions, and no studies could be found involving the treatment of CKD with the formulas described in this paper. Some research investigating the efficacy of individual herbs contained in classic formulas for treating CKD is available. *Shan Zhu Yu* (Corni fructus), ascribed in TCVM with the ability to tonify Liver and Kidney *Yin*, has been shown to reduce renal fibrosis in rats by inhibiting oxidative stress (13). *Huang Qi* (astragalus root) is primarily used to tonify *Qi*. Astragalus was shown to slow CKD progression in partially nephrectomized rats (14). A cell model of CKD demonstrated renoprotective effects of paeoniflorin, an active compound in *Mu Dan Pi* (*Paeonia suffruticosa*) (15). In TCVM, this herb is used in CKD formulas primarily to prevent Blood Stagnation that can result from the richness of other herbs within the formulas. *Dang gui* (angelica) is described as a Blood tonic in TCVM. A recent study of its use in a rat model of CKD showed correction of anemia with improvement of erythropoietin production as well as reduction in kidney inflammation (16).

A longitudinal cohort study monitoring people with CKD taking *Dang gui* demonstrated dose- and time-dependent kidney protective effects and survival benefits (17). Many herbs in Chinese formulas for CKD have not been studied using currently accepted research practices.

TCVM food therapy can work within allopathic nutritional guidelines to provide an integrative approach to feeding patients with CKD. In TCVM, foods are assigned temperatures (cold, cooling, neutral, warm, or hot) according to their effects on the body (**Table 4**). For example, a jalapeño pepper can make the eater feel hot although their actual body temperature has not significantly changed; this is energetically a “hot” food. In addition, foods are assigned actions according to which body parts and *Zhang-fu* organ systems are affected. Examples include foods that drain Dampness (such as barley or lentils), open the surface (coriander), or tonify Blood (beef, beets, carrots). Foods that tonify a patient’s TCVM deficiencies and energetically enter the Kidney channel, while also being lower in phosphorus, can contribute to nutritionally and energetically balanced diets appropriate for renal patients at all stages. Avoidance of dry foods is of particular importance in TCVM food therapy, since maintaining hydration and body fluids is a challenge in these patients. **Table 4** lists foods that can be used to create nutritionally and energetically balanced home-prepared renal diets or for top-dressing commercially available prescription renal diets.

Regardless of the branch(es) of TCVM used, proper treatment depends on the correct pattern diagnosis. The most common diagnostic system in TCVM is termed Eight Principles and utilizes an extensive history and patient examination to determine imbalances in the previously-mentioned substances, the presence or absence of pathogenic factors, and identification of the organ system(s) affected. Chronic kidney disease encompasses patterns of Deficiency affecting the Kidney organ system. Deficiencies simply describe the lack of (TCVM) substances, rather than the presence of pathogens, which are called *Excesses* in TCVM. Below are 4 common TCVM pattern diagnoses seen in CKD.

1. Kidney *Qi/Yang* Deficiency with or without Spleen *Qi* Deficiency. The clinical signs of Kidney *Qi* Deficiency can include dysuria, weakness in the back, urinary incontinence, warm-seeking behavior or cold extremities, poor dentition, hearing loss, general debility/weakness, and/or edema in limbs or ventral abdomen. On examination, the tongue is pale and wet and the pulse is deep and weak, especially on the right side. If Spleen *Qi* Deficiency is present, decreased appetite, soft stools, and/or muscle atrophy may also be observed. Acupuncture points to treat

Kidney Qi Deficiency with or without Spleen Qi Deficiency include BL-23, BL-24, BL-26, *Shen-shu*, *Shen-peng*, *Shen-jiao*, KI-7, KI-10, CV-4, CV-6, and BL-39. A patient with Yang Deficiency will also have cold ears/back/extremities, a pale and/or purple tongue, and a deep and weak pulse. For these patients, moxibustion (a heating technique) can be added at acupuncture points *Bai-hui*, GV-3, and GV-4. For Kidney Qi Deficiency or mild Kidney Yang Deficiency, herbal formula *Jin Gui Shen Qi* can be prescribed. **Table 5** lists the ingredients and actions of this classic Chinese

herbal formula. The dose is 1 g per 10 kg body weight, BID, PO. The dosage will be less for a more concentrated form of the formula, as is available from some TCVM herb suppliers. For the concentrated form of herbal extract granules (HEG), the starting dose would be 0.25 to 0.5 g per 10 kg body weight. For Kidney Yang Deficiency, the herbal formula *You Gui Wan* (**Table 6**) can be prescribed at a dose of 1 g per 10 kg body weight, BID, PO (**Table 5**). For concentrated HEG, the dose is 0.25 to 0.5 g per 10 kg.

Table 4: Foods for creating renal diets that are moderate or low in phosphorus [additional information on phosphorus levels from: Kaiser Permanente (<https://tinyurl.com/kaiserPlevels>) and KidneyFund (<https://tinyurl.com/kidneyfundP>).]

Ingredient	TCVM Temperature	Pertinent TCVM Actions
Black beans	Neutral	Tonifies Kidney Jing/Yin
Black-eyed peas	Neutral	Tonifies Spleen Qi, Kidney Jing
Chickpeas	Neutral	Tonifies Spleen Qi
Kidney beans	Neutral	Tonifies Kidney Qi/Jing, Qi
Lentils	Neutral	Tonifies Spleen Qi
Pinto beans	Neutral	Tonifies Spleen Qi, Kidney Qi, Kidney Jing
Beef	Neutral	Tonifies Qi, Blood
Chicken (dark)	Warm	Tonifies Qi, Kidney Jing
Clam	Cold	Tonifies Yin
Duck	Cool	Tonifies Yin
Eggs	Neutral	Tonifies Kidney Jing
Lamb	Hot	Tonifies Yang, Qi
Turkey (dark)	Cool	Tonifies Yin, Spleen Qi
Shrimp	Warm	Tonifies Kidney Yang/Qi, Spleen Qi
Asparagus	Cool	Tonifies Qi/Yin/Body Fluids
Green beans	Neutral	Tonifies Spleen Qi, Kidney Yin
Broccoli	Cool	Tonifies Yin
Green peas	Neutral	Tonifies Kidney Qi, Spleen Qi
Squash, winter	Warm	Tonifies Spleen Qi
Sweet potato	Neutral-Warm	Tonifies Spleen Qi, Body Fluid
Rice, brown	Cool	Tonifies Kidney Qi, Spleen Qi
Rice, white	Neutral	Tonifies Spleen Qi
Pasta	Neutral to cool	Tonifies Spleen Qi
Oatmeal	Warm	Tonifies Qi, Kidney Yang
Blackberry	Warm	Tonifies Kidney Jing
Cranberry	Cool	Tonifies Kidney Qi and Yin
Goji berry	Neutral	Tonifies Kidney Yin/Jing
Mulberry	Cold	Tonifies Kidney Yin
Raspberry	Warm	Tonifies Kidney Qi

Table 5: Ingredients and actions of Jin Gui Shen Qi (Kidney Qi Pill from the Golden Cabinet) (18, 19)

Latin Name	Pinyin Name	Percentage of Formula	Action/Function Within the Formula
<i>Rehmannia glutinosa</i>	<i>Shu Di Huang</i>	30	Tonifies Kidney Yin and Jing
<i>Corni officinalis, fructus</i>	<i>Shan Zhu Yu</i>	15	Tonifies Kidney and Liver Yin
<i>Dioscorea opposita</i>	<i>Shan Yao</i>	15	Tonifies Kidney and Spleen Qi
<i>Poria cocos</i>	<i>Fu Ling</i>	11	Promotes urination, drains damp, sedates turbidity, prevents Phlegm from tonic herbs
<i>Paeonia suffruticosa</i>	<i>Mu Dan Pi</i>	11	Prevents Stagnation from tonic herbs
<i>Alisma orientalis</i>	<i>Ze Xie</i>	11	Promotes urination, drains Damp, sedates turbidity, prevents Phlegm from tonic herbs
<i>Cinnamomi cassia</i>	<i>Gui Zhi</i>	3.5	Tonifies Kidney Yang
<i>Aconitum carmichaeli</i>	<i>Fu Zi</i>	3.5	Tonifies Kidney Yang

Table 6: Ingredients and actions of You Gui Wan (Restore the Right) (1, 18)

Latin Name	Pinyin Name	Percentage of Formula	Action/Function Within the Formula
<i>Rehmannia glutinosa</i>	<i>Shu Di Huang</i>	21.1	Tonifies Kidney Yin and Jing
<i>Dioscorea opposita</i>	<i>Shan Yao</i>	10.5	Tonifies Kidney and Spleen Qi
<i>Corni officinalis, fructus</i>	<i>Shan Zhu Yu</i>	15	Tonifies Kidney and Liver Yin
<i>Lycium chinensis</i>	<i>Gou Qi Zi</i>	7.9	Nourishes Liver and Kidney Yin
<i>Cuscuta chinensis</i>	<i>Tu Si Zi</i>	10.5	Tonifies Kidney Yang, Yin, and Jing
<i>Cervus (not used in most current formulas)</i>	<i>Lu Jiao Jiao</i>	10.5	Nourishes Kidney and Blood
<i>Angelica sinensis</i>	<i>Dang Gui</i>	10.5	Tonifies Liver and Kidney Yang, nourishes Blood
<i>Eucommia ulmoides</i>	<i>Du Zhong</i>	7.9	Nourishes and activates Blood
<i>Cinnamomum aromaticum</i>	<i>Rou Gui</i>	5.3	Warms and tonifies Kidney and Spleen Yang
<i>Aconitum carmichaeli</i>	<i>Fu Zi</i>	5.3	Tonifies Kidney Yang

Table 7: Ingredients and actions of *Xiang Sha Liu Jun Zi* (Eight Gentlemen) (1)

Latin Name	Pinyin Name	Percentage of Formula	Action/Function Within the Formula
<i>Astragalus membranaceus</i>	<i>Huang Qi</i>	29	Tonifies <i>Qi</i> , promotes diuresis
<i>Glycyrrhiza uralensis</i>	<i>Gan Cao</i>	14.5	Harmonizes
<i>Panax ginseng</i>	<i>Ren Shen</i>	9.7	Tonifies Spleen, replenishes <i>Yuan Qi</i>
<i>Angelica sinensis</i>	<i>Dang Gui</i>	4.8	Tonifies Liver and Kidney <i>Yang</i> , nourishes Blood
<i>Citrus reticulata</i>	<i>Chen Pi</i>	8	Regulates Spleen <i>Qi</i> , dries Damp
<i>Cimicifuga foetida</i>	<i>Sheng Ma</i>	9.7	Clears Heat and lifts Spleen <i>Qi</i>
<i>Bupleurum chinense</i>	<i>Chai Hu</i>	9.7	Raises Yang <i>Qi</i> , moves Liver <i>Qi</i>
<i>Atractylodes macrocephala</i>	<i>Bai Zhu</i>	14.6	Tonifies Spleen <i>Qi</i> , dries Damp

For inappetence, *Xiang Sha Liu Jun Zi* (Eight Gentlemen) can be added in at 1 g per 10 kg body weight, BID, PO (Table 7). Again, for concentrated HEG the dose is 0.25 to 0.5 g per 10 kg.

2. Kidney *Yin* Deficiency. The clinical signs of Kidney *Yin* Deficiency include a thin and shriveled (dehydrated) appearance, dry skin or haircoat, dry mouth/nose, warm and dry palmar surfaces, cool-seeking behavior, panting (worse in afternoon or at night), generalized erythema, hearing loss and/or infertility problems. On examination, the tongue is red and dry, and the pulse is deep, thready, and weak, especially on the left side of the body. Acupuncture points to treat Kidney *Yin* Deficiency include KI-3, BL-23, SP-6, KI-6, KI-7, KI-10, BL-22, and GV-14. If inappetence is present, the practitioner should also treat *Shan-gen*, BL-20, and BL-21. *Liu Wei Di Huang Wan* (Rehmannia 6) is the appropriate herbal formula for Kidney *Yin* Deficiency and is also dosed at 1 g per 10 kg body weight, BID, PO or, if using the concentrated HEG, 0.25 to 0.5 g per 10 kg (Table 8). For inappetence, *Xiang Sha Liu Jun Zi* (Eight Gentlemen) is often added at 1 g per 10 kg body weight, BID, PO (for concentrated HEG, 0.25 to 0.5 g per 10 kg).

3. Kidney *Qi/Yang* + Kidney *Yin* Deficiency. The clinical signs for this combination pattern can include inappetence, diarrhea, body weight loss, fatigue, back/rear weakness, either warm or cool-seeking behaviors, cold or hot ears and body, and/or panting (worse at night). On examination, the tongue can be either pale/wet or red/dry, and the pulse is weak with or without being fast. Acupuncture points to treat Kidney *Qi/Yang* + Kidney *Yin* Deficiency include GV-3, GV-4, *Bai-hui*, *Shen-shu*, *Shen-peng*, *Shen-jiao*, BL-26, KI-7, KI-10, CV-4, CV-6, BL-22, and BL-39. If inappetence is present, it is helpful to again add *Shan-gen*, BL-20,

Table 8: Ingredients and actions of *Liu Wei Di Huang Wan* (Rehmannia 6) (1, 18)

Latin Name	Pinyin Name	Percentage of Formula	Action/Function Within the Formula
<i>Rehmannia glutinosa</i>	<i>Shu Di Huang</i>	32	Tonifies Kidney <i>Yin</i> and <i>Jing</i>
<i>Corni officinalis, fructus</i>	<i>Shan Zhu Yu</i>	16	Tonifies Kidney and Liver <i>Yin</i>
<i>Dioscorea opposita</i>	<i>Shan Yao</i>	16	Tonifies Kidney and Spleen <i>Qi</i>
<i>Alisma orientalis</i>	<i>Ze Xie</i>	12	Promotes urination, drains Damp, sedates turbidity
<i>Paeonia suffruticosa</i>	<i>Mu Dan Pi</i>	12	Prevents Stagnation from tonic herbs
<i>Poria cocos</i>	<i>Fu Ling</i>	12	Promotes urination, drains damp, tonifies Spleen <i>Qi</i>

and BL-21. A combination of *Jin Gui Shen Qi* plus *Liu Wei Di Huang Wan* (Rehmannia 6) is the appropriate herbal formula prescription. Recommended dosing is 0.5 g per 10 kg body weight of each, BID, PO, or for concentrated HEG, 0.25 g per 10 kg. *Xiang Sha Liu Jun Zi* is used for appetite with this pattern at 1 g per 10 kg body weight, BID, PO (concentrated HEG 0.25 to 0.5 g per 10 kg).

4. Kidney *Jing* Deficiency. The clinical signs for Kidney *Jing* Deficiency can include premature aging, poor dentition, brittle bones, poor neonatal growth and development, inadequate skeletal development, developmental bone diseases, congenital defects, and/or a preponderance of signs toward either Kidney *Yin* or Kidney *Yang* Deficiency as described above. On examination, the tongue is pale or red, and the pulse is weak. Acupuncture points to treat Kidney *Jing* Deficiency include KI-3, BL-23, BL-26, SP-3, ST-36, BL-21, BL-20, CV-4, CV-6, BL-22, and BL-39. Epi-medium Formula is the appropriate herbal formula for Kidney *Jing* Deficiency (Table 9). Recommended starting dosage is, again, 1 g per 10 kg body weight BID, PO for regular strength or 0.25 to 0.5 g per 10 kg for concentrated HEG.

Table 9: Epimedium Formula (percentages proprietary) (19)

Latin Name	Pinyin Name	Action/Function Within the Formula
<i>Lycium chinensis</i>	Gou Qi Zi	Nourishes Liver and Kidney Yin
<i>Polygonum multiflorum</i>	He Shou Wu	Nourishes Blood and Jing
<i>Rehmannia glutinosa</i>	Shu Di Huang	Nourishes Kidney Yin and Jing
<i>Cullen corylifolium</i>	Bu Gu Zhi	Tonifies Kidney Yang, strengthens bones
<i>Angelica sinensis</i>	Dang Gui	Nourishes Blood, tonifies Kidney and Liver Yang
<i>Astragalus membranaceus</i>	Huang Qi	Tonifies Qi
<i>Cynomorium songaricum</i>	Suo Yang	Tonifies Kidney Yang
<i>Cuscuta chinensis</i>	Tu Si Zi	Tonifies Kidney Yang, Yin, and Jing
<i>Epimedium koreanum</i>	Yin Yang Hua	Tonifies Kidney Yang and Jing
<i>Paeonia lactiflora</i>	Bai Shao Yao	Nourishes Liver Yin and Blood
<i>Codonopsis pilosula</i>	Dang Shen	Tonifies Qi
<i>Ophiopogon japonicus</i>	Mai Men Dong	Nourishes Yin
<i>Dipsacus asper</i>	Xu Duan	Tonifies Kidney Yang
<i>Scrophularia ningpoensis</i>	Xuan shen	Cools Blood
<i>Citrus reticulata</i>	Chen Pi	Moves Qi

In summary, TCVM can be used successfully to manage CKD in dogs and cats. Ideally, an integrative approach utilizing both Western and TCVM principles is applied as deemed appropriate by the practitioner, based on the individual patient. Clinical signs and diagnostics can be used to monitor quality of life and disease progression.

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Dr. Huisheng Xie is the owner of Jing Tang Herbals, a manufacturer of TCVM herbal formulas. Dr. Terri Rosado declares no conflicts of interest.

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