

Naturopathic Treatment of Renal Failure Patients

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2011

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Learning Objectives

1. To understand how to safely work with patients with renal failure, and to know the limits of natural medicine.
2. To provide improved tools for helping patients with renal failure naturally.
3. To review major drugs for patients with chronic renal failure.

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When Kidneys Fail

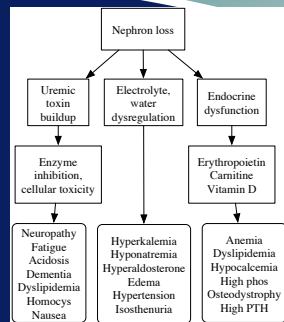
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Major Causes

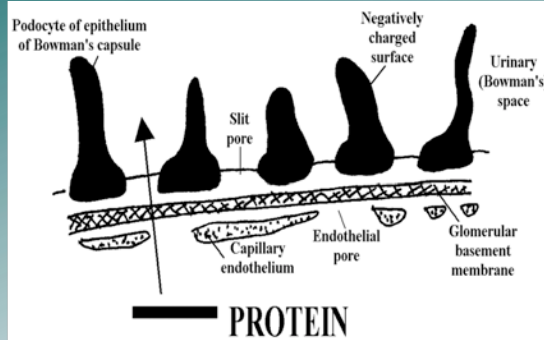
- Diabetic nephropathy
- Hypertensive nephropathy
- Inflammatory/autoimmune diseases (glomerulonephritides)

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Pathogenesis of CRF

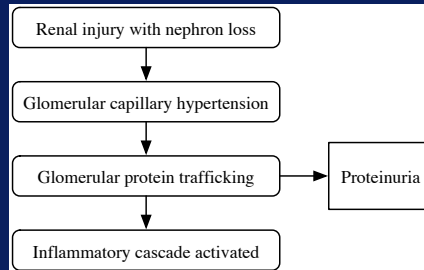


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Importance of Protein Trafficking



Ann Rev Med 2000;51:315-27

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Definitions of CRF

Stage	GFR/symptoms
I	60-99 ml/min, SCr nl, no sx
II	60-99 ml/min, SCr up, no sx
IIIa	45-59 ml/min, mild/no sx
IIIb	30-44 ml/min, mild-moderate sx
IV	15-29 ml/min, moderate sx
V	<15 ml/min, sx, or on dialysis

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Nomenclatural Morass

- Chronic renal failure = Clinical syndrome with many possible causes
- Always try to determine the pathologic syndrome causing the renal failure (eg hypertensive nephropathy, diabetic nephropathy, glomerulonephritis)
- Treat the cause and the symptoms

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Limits and Possibilities

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Natural Medicine and CRF

- Lack of understanding of renal physiology
- Excessive focus on the liver
- Mainstream medical ignorance of what we do
- Failure to think outside the conventional box
- We can help people with CRF, have to work cooperatively (esp. patients on dialysis)
- Fear means seek knowledge

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Things Not to Do

- Push lots of water
- Give herbal diuretics
- Give potassium-rich herbs/food without monitoring
- Promise you can cure kidney failure
- Tell people to go off dialysis
- Give in to ignorance and fear

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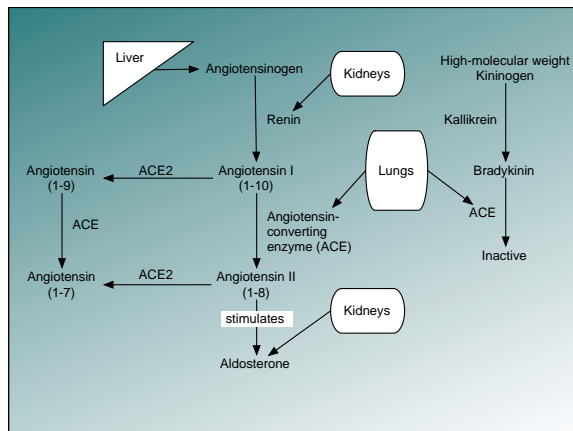
Realistic Expectations

- Early disease (stage I): stabilization, improvement IF causes are removed
- Moderate disease (stages II, III): stabilization, mild improvement, difficulty removing causes thus frustration
- Severe disease (stages IV, V): progressive but delayed decline, improvement in health while on dialysis

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Renin-Angiotensin-Aldosterone System

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ACE Inhibitors

- Reduce progression of CRF in some populations independent of lowering BP
- Most helpful in diabetic nephropathy and glomerulonephritis
- Five best studied for CRF patients: benazepril, captopril, enalapril, quinapril, ramipril
- All available generic (ramipril most expensive)

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Classes of ACEi

Class	Drugs	Pharmacokinetics
I	Captopril	Parent & metabolites ACEi, lipid soluble
II	Benazepril, enalapril, fosinopril, moexipril, perindopril, ramipril, etc.	Prodrugs, lipid soluble
III	Lisinopril	Non-metabolized, water-soluble

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Typical Doses

Benazepril	10-20 mg qd
Captopril	37.5-150 mg tid
Enalapril	5-10 mg qd-bid
Quinapril	10-20 mg qd
Ramipril	5-10 mg qd

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ACEi Adverse Effects

- Irritating cough (bradykinin excess; common)
- Hypotension (rare)
- Hyperkalemia (uncommon)
- Mild elevated SCr (common)
- Angioedema (rare but dangerous)
- CI in pregnancy; don't combine with NSAIDs

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Natural ACEIs

- *Lespedeza capitata* (round-headed lespedeza)
- *Crataegus spp* (hawthorn)
- *Allium sativum* (garlic)
- *Ganoderma lucidum* (reishi, ling zhi)
- *Hibiscus spp* (roselle)
- Do so much more than drug ACEi, milder ACEi, safer, also cheap

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Lespedeza capitata

Planta Med 1992;58:297.

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Crataegus laevigata

Phytomedicine 2001;8(1):47-52.

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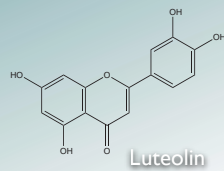
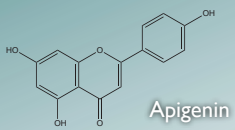
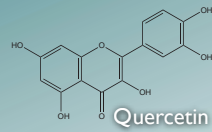
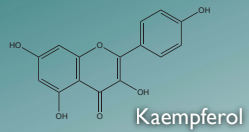


Ganoderma lucidum (reishi)

J Biosci Bioeng 2004; 97: 24-8;
Chem Pharm Bull 1986; 34: 3025-8

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ACEi Flavonols and Flavones



Phytother Res 2007;21:32--36

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Angiotensin Receptor Blockers

- Antagonize angiotensin II AT₁ receptors
- Vasodilatory, decrease ADH & aldosterone
- Newer, more expensive
- “Me too” syndrome like ACEi (puts the lie to drug companies as innovative, see *Angell Truth About the Drug Companies*)
- Losartan, irbesartan, candesartan, valsartan

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ARB Dosing

Drug	Half life	Usual dose
Candesartan	9 h	4-32 mg
Losartan*	2 h	50-100 mg
Olmesartan	14-16 h	10-40 mg
Valsartan	6 h	80-320 mg

* = original in class

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ARB Toxicity

- Adverse effects: orthostatic hypotension, HA, hyperkalemia, incr SCr
- Rare: neutropenia, angioedema
- May increase risk of getting cancer; without increasing mortality (*Lancet Oncol* 2010;11:627-36).
- Valsartan at least is a vit D blocker
- Drug interactions: NSAIDs, lithium, diuretics

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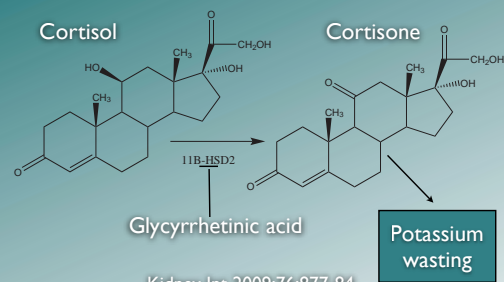
Hyperkalemia

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Glycyrrhiza glabra

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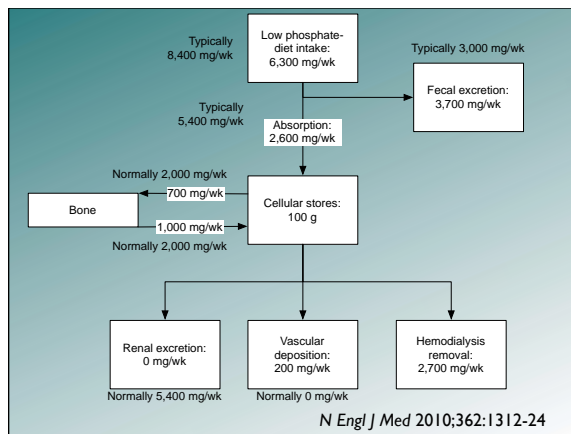


Kidney Int 2009;76:877-84
 n=10 on hemodialysis, DBPC
 3 mon on each tx (500 mg GA bid vs. dextrose in cookies)
 9 of 10 had lowered K⁺ on GA; 70% nl during GA vs. 24% placebo
 No htn or weight gain on GA

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Phosphate Binders

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Calcium acetate or carbonate

- Commonly used, cheap
- No long-term term placebo-controlled trials on endpoints that matter (e.g. mortality)
- Dose: 500 mg elemental Ca^{2+} with meals (easier to reach with $\text{CaCO}_3 = 50\% \text{Ca}^{2+}$ vs. 25% with Ca acetate)
- Adverse effects: hypercalcemia (uncommon), nausea (common), vascular calcification (?)

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Sevelamer

- Anion-exchange resin; expensive
- Decr. LDL, fat-soluble vitamin (FSV) absorption
- Not superior to calcium for preventing mortality (*Kidney Int* 2007;72:1130)
- Dose: 800 mg with meals
- Adverse effects: nausea, diarrhea (common), FSV deficiencies (common)

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Lanthanum

- Heavy metal (La, atomic number 57); expensive
- No long-term trials on endpoints that matter; not superior to calcium short-term
- Dose: 250-1,000 mg with meals
- Adverse effects: GI upset, headache, overall poorly tolerated, accumulation in the body

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Niacinamide

- Decr. expression of Na^+ - P_i 2b cotransporter in small intestines; very cheap
- Also improves dyslipidemia
- Dose: 250-500 mg with meals
- Adverse effects: flushing (rare), diarrhea (rare), thrombocytopenia (very rare), hyperhomocysteinemia (unless coupled with B12, B6, folate)

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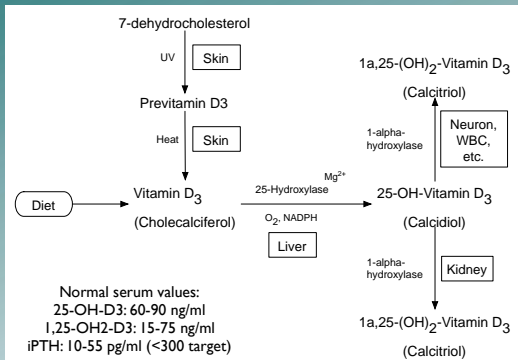
Low-Phosphate Diet

- Avoid dark-colored soda pop
- Avoid milk and yogurt (>200 mg/100 g)
- Animal products are high, >200 mg/100 g (lamb moderate)
- Legumes are a moderate source, 100-200 mg/100 g (but have so many other benefits, should probably not avoid except lentils)

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Vitamin D

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Calcitriol

- Indication: serum $1,25\text{-OH}_2\text{-D}_3$ is low, iPTH is high, osteodystrophy present
- Dose: 0.5 mcg po qd with 800 mg Ca^{2+} max
- Increase 0.25 mcg/dose/wk if urine spot Ca^{2+} ok (1.5 mcg qd usual max, 2.5 absolute max)
- Target spot urine Ca^{2+} is <350 mg
- Toxicity: hypercalcemia, urolithiasis

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Erythropoietin

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Epoetin

- If Hgb incr. above 13 g/dl, incr. CV mortality (>50% of dialysis patients were over limit)
- Amgen and Johnson and Johnson were pushing unsafe prescribing, paying doctors to use (dose tripled from introduction in 1991 to 2001)
- Single largest drug expense for Medicare
- Synthetic alternative: darbepoietin (no better)

New York Times 9 May 2007

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Adaptogens and Bone Marrow

- Guishao Sijunzi Tang (Four Nobles with Danggui and Paeonia) (*J Tradit Chin Med* 1999;19:3-9)
- Baoyuan Tang (*Zhongguo Zhong Xi Yi Jie He Za Zhi* 1992;12(8):461-4, 451-2.)
- *Astragalus membranaceus*
- *Panax ginseng*

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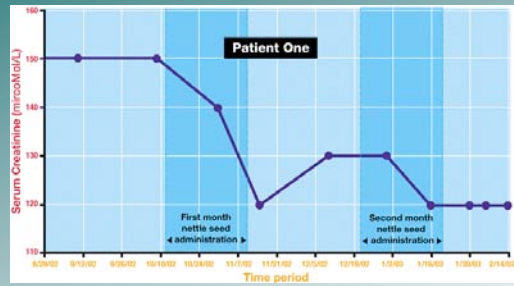
Nephroprotective Herbs

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*Urtica
dioica*
seed

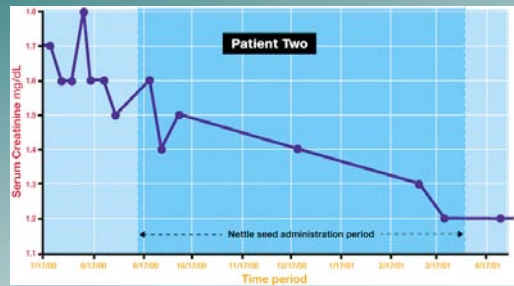


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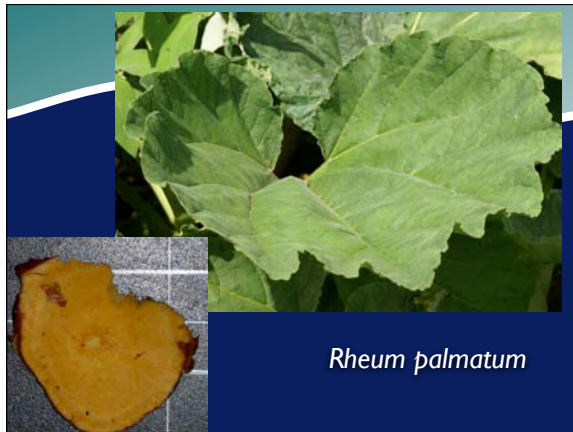
Slide courtesy of Jonathan Treasure MNIMH.

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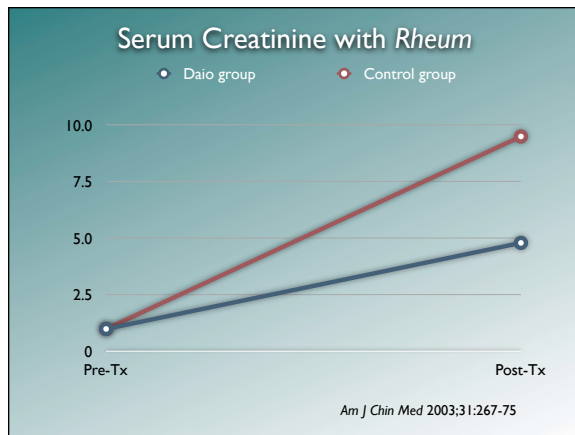


Slide courtesy of Jonathan Treasure MNIMH.

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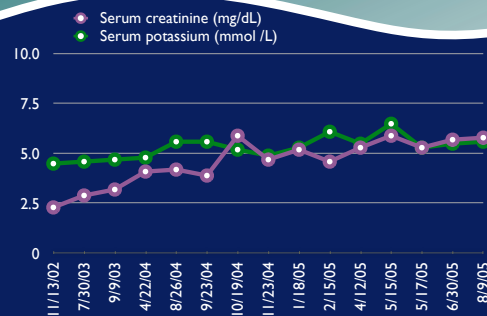
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Case Examples



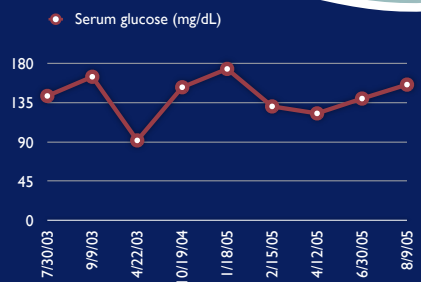
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Combination Formula for Diabetic Nephropathy



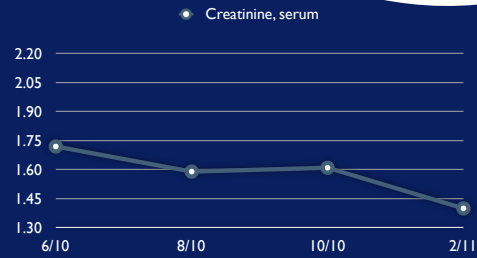
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Combination Formula for Diabetic Nephropathy



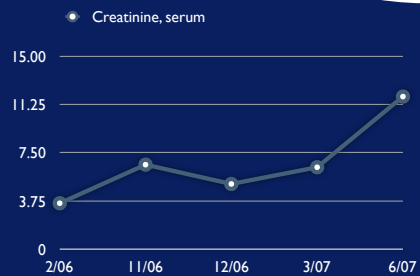
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Diabetic Nephropathy Case



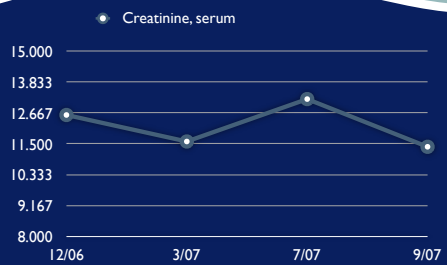
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IgA Nephropathy Case



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Polycystic Kidney Disease Case



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