Urinary Tract Dysuria (Painful or difficult urination) Irritable bladder (organisms not found) Interstitial cystitis Infection — cystitis, nephritis Urolithiasis Incontinence Erectile dysfunction Neoplasms

Kidney Tonification Protocol Acupressure (KI 3, KI7 (for heat), 3-yin crossing Early sleep (by 10:30) Holistic stress management No added sugar, low-glycemic index diet Herbs KI yin tonics — gouji (cook with it) — ligustrum fruit (dried tea) — American ginseng (dried tea) — rehmannia (cooked or not)

Chronic Inflammation Protocol KI Yin tonics Antiinflammatory pathway modulators — pineapple, green papaya — bioavailable turmeric — other spices • frankincense • high-flavonoid veggies, berries • willow bark extract • hops • berberine-containing herbs

Urinary Tract Matera Medica diuretic — goldenrod (clinical trial), green tea, uva ursi*, dandelion herb, lovage root, birch leaf, corn silk, cleavers, parsley root, nettle herb, seed, scotch broom** antispasmodics — kava, crampbark, lobelia, Ca. poppy demulcents — marshmallow, aloe, slippery elm, fenugreek, barley anti-inflammatory — goldenrod, corn silk, saw palmetto, turmeric, corn silk allantoins — corn silk, comfrey root, aloe antimicrobials — cranberry, pipsissewa, berberine, garlic, juniper Resorptive/protectant — milk thistle, cordyceps Lithotriptics — hydrangea, parsley root, knotweed, cleavers, gravel root *contains arbutoside which is hydrolyzed by gut bacteria to glucuronide — hydroquinone glucuronide (liver) — hydroquinone if urine is alkaline, which is antibacterial; RCT/PC trial (n=50), 1 year follow-up; women receiving the uva ursi had 23% fewer follow up episodes of cystitis **mild cardio-active glycosides; formerly used for dropsy; experienced herbal use only

Chronic Inflammation Protocol Causes — poor sleep quality, quantity, timing — use of high glycemic index foods, added sugar — chronic stress that is not released — chronic infections — use of stimulants — over-stimulating, heating foods (red meat) Remedies — good sleep quality, timing — sugar-free diet — release the stress (mindfulness, yoga, etc.) — Immunomodulators — Breathing, walking — Complex carbs, veggies, especially green, fruits, moderate protein, fat

Most Potent Aquaretics

Source: Yarnell, 2002
**Featured Plant**

*Equisetum telmateia*

- **Chemistry**
  - Inorganic acids, salts, phenolic acids, flavonoids, alkaloids and volatile components; water-soluble silicic acid
- **Pharmacology**
  - Aromatic, antispasmodic, astringent, carminative, galactagogue, hypotensive, diuretic, anti-inflammatory, antiscorbutic and antiscorbutic properties
- **Therapeutic**
  - Aromatic extract, but not aqueous extract has significant microbicidal effects against E. coli, strep and staph
  - Preparation: pour 1 cup boiling water over 2-4 grams of the dried herb and steep for 15 minutes, strain; drink 2-3 cups/day

**Examples of Commerical Formulas**

- **Herb Pharm**
  - goldenrod, corn silk, horsetail, uva-ursi, juniper berry
- **Herbalist & Alkemist**
  - uva ursi, agrimony, corn silk, Oregon grape root
- **Dr. Christopher bladder formula**
  - bladder: parsley root, juniper berries, marshmallow root, white pond lily, gravel root, uva ursi, lobelia, ginger root
- **Herbs, etc. (Michael Moore)**
  - CranBladder: cranberry, uva-ursi, echinacea, nettle, buchu, horsetail, pipsissewa, yarrow, meadowsweet, licorice, stevia

**Dysuria**

All conditions associated with painful or difficult urination and/or a painful ache over the bladder area

- **Symptoms**
  - Infection, inflammation, prostate hyperplasia, urethral irritation, cancer
  - Also IC (autoimmune chronic inflammation) or OBS
- **Common causes**
  - Cystitis, or urethritis due to STD (Chlamydia)
- **Visible urethral or cervical discharge suggests an STD**

**Cystitis (Bladder Infection)**

- **More common in women**
- **E. coli** most associated
- **Hygiene important**
- **Predisposing factors:**
  - Diarrhea
  - Urea-urici (alkaline), dandelion leaf, juniper berry, green tea, asparagus root
  - **Antiseptics**
  - Pipsissewa, goldenrod, uva ursi, cranberry, garlic tincture, usnea, berberine-containing herbs
  - **Antinflammatories**
  - goldenrod, plumain leaf, nettle root
  - **Bladder tonics**
  - Saw palmetto, nettle root, cordyceps

**Dysuria—painful urination**

- **Symptomatic treatment**
  - **Demulcent, soothing herbs**
    - Pipsissewa (*Chimaphila umbellata*)
    - Marshmallow root (*Althea officinalis*)
    - Plantain leaf (*Plantago major, P. lanceolata*)
    - Fennugreek, barley tea
  - **Antinflammatory**
    - Cleavers (*Galium aparine*)
    - Corn Silk (*Zea mays*)
    - Pipsissewa (*Chimaphila umbellatum*)
  - **Anodyne**
    - Kava, corydalis, willow bark extract (salicin)
  - **Antispasmodic**
    - California poppy, cramp bark, lobelia (<10 drops), wild yam

**Treatment Plan**

- Blend herbs based on symptoms and TCM dx (at least 1 from each category; consider energetics of the patient-herb interaction)
- Consider long-term constitutional plan and formula (tonics, or long-term reducing formulas for excess)
- **Kidney yin tonics slide**

**Dysuria Tx in Traditional Thai Medicine**

- Khon Kaen District
  - Experience level on medicinal plant utilization of the residents, in the total of 11 villages, varied from 17 to a hundred percent
  - Prevalence of dysuria was 18.7 percent, with the higher occurrence in adults than in children. Approximately 18.3 of these cases was dependent on medicinal plants for symptomatic treatment.

- Most popular traditional treatments

**Source:** Sripanidkulchai et al., 2002

**Source:** memrise.com
Interstitial Cystitis (IC)

Painful Bladder Syndrome

- no current cure; chronic autoimmune condition
- with pain, inflammation
- requires a medical dx with imaging
- often mistaken for uncomplicated cystitis, but no or little infection present typically
- chronic inflammation causes sclerosis of the bladder wall, reduces capacity of bladder (with more frequent urination)
- mild to severe

Treatment Strategy

- Antiinflammatories, on-going
  - pineapple stem, papain, aloe, corn silk (allantoin)
- Antispasmodics
  - kava (too warm for some), cramp bark, Cal. poppy
- Diuretics
  - goldenseal, dandelion herb, birch leaf, corn silk
- Chronic systemic antiinflammatory protocol
- Kidney tonification protocol

Herbs for urolithiasis

- **Don’t forget dietary guidelines, recommend 2-2.5 liters/day of water or better, aquebracte tea and cranberry; plus increased exercise!**
- Aquaretics
  - uva-ursi, goldened, cleavers, horsetail, lovage root, parsley (herb, root), celery, juniper berry
- Lithotriptics
  - hydrangea root, knotweed (Polygonum aviculare), cleavers (fresh juice), nettle leaf juice, corn silk, gravel root (Eupatorium purpureum), smooth muscle relaxants to help them pass
  - crampbark, black haw, kava, California poppy, wild yam

Kidney stones treatments

- Risky diets
  - The formation of various types of kidney stones is strongly influenced by urinary pH
  - An alkaline pH favors the crystallization of calcium- and phosphate-containing stones, whereas an acidic urine pH promotes uric acid or cystine stones
  - A very low-nutrient diet and high salt diet both increase risk
  - Decreasing calcium intake increases risk (40,000 people, 1,050 mg to 600 mg/day)
- Other risks: obesity, insulin resistance, high glycemic index foods
- High protein and especially high animal protein increases risk (see class readings)
- Protective diet
  - high potassium (López and Hoppe, 2010)
  - increased calcium (at least 1,000 mg/day)
  - complex carbohydrates, vegetables and fruits, moderate protein, moderate fats

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Urolithiasis

- Urinary stones are classified as oxalate stones, calcium stones, urate stones, cystine stones, and phosphate stones according to the substances contained in them. Making the appropriate dietary changes is generally a sufficient prophylactic measure.
- Around two-thirds of all urinary stones are small enough to be passed spontaneously.

Specifics:

- Parsley leaf, root (Petroselinum crispum)
- Gravel root (Eupatorium purpureum)
- Hydrangea (Hydrangea arborescens)
- Uva ursi (Arctostaphylos spp.)
- Green tea (Camellia sinensis)
- Pellitory of the wall (Parietaria)

Overactive Bladder Syndrome

(OBS or Irritable bladder)

- Problem with nerves and muscles of the bladder
- Frequent urination
- Nocturia
- More common in women

- Do differential diagnosis; usually Kidney deficiency, stagnation of Qi and blood sometimes liver hyperactivity syndrome, spleen Qi deficiency

- Calm liver
  - Gentian, dandelion root
- Antioxidants
  - kava, California poppy, hops, passion flower, scallop
- Demulcents
  - marshmallow, gingko, barley, plantain leaf
- Antispasmodics
  - wild yam, cramp bark, black haw
- Move Qi and blood
  - lovage root (chuan xiong), safflower, shu di huan (rehmannia, uncooked)
- Kidney tonics
  - American ginseng
  - nettle leaf and seed

Benign Prostatic Hyperplasia

- The prostate gland is found between the bladder and urethra; as men age, the gland often enlarges, slowing the flow of urine
- Symptoms: night-time urination (nocturia), urge to urinate more frequently during the day, slow starting, dribbling, slow stream
- Common medical treatments: surgery, finasteride (Proscar) can shrink prostate but has some side effects
- Surgery is most common treatment, is performed through urethra and has the risk of bleeding, infection, impotence
**Spotlight Herb—Cranberry**

- 5th most potent antioxidant fruit, high in phenolics
- Studies: help prevent cancer, heart disease, UTIs
- Cholesterol
- Kidney stone prevention
- Cranberries contain a substance that can prevent bacteria from sticking on the walls of the bladder
- 63 clinical trials, 8 meta-analyses
- The bacterial anti-adhesion activity of cranberry proanthocyanidins (PACs) has been demonstrated in vitro
- Studies have been equivocal, however, some positive trials have been published

**Species sold in trade**

Cranberries are dwarf shrubs of the family Ericaceae, genus *Vaccinium* and subgenus *Oxycoccus*.

There are four species of cranberry:
- *Vaccinium Oxyccocus* or *Oxycoccus palustris*
- *Vaccinium microcarpum* or *Oxycoccus microcarpus*
- *Vaccinium macrocarpon* or *Oxycoccus macrocarpus*
- *Vaccinium erythrocarpum* or *Oxycoccus erythrocarpus*

**Cranberry Bogs**

**Phytochemicals in Cranberries**

Cranberries contain many phenolic compounds:
- Anthocyanins
- Flavonoids
- Proanthocyanidins
- Condensed tannins
- Low molecular weight phenolic acids

**Phytochemicals in Cranberries**

- Vinson *et al* showed that cranberries have the highest content of total phenolics per serving by weight among 20 analyzed fruits (373mg of total phenols/55grams of cranberries).

**Benign Prostatic Hyperplasia**

- Saw Palmetto (*Serenoa repens*)
- Nettle root, rhizome (*Urtica* spp.)
- Pygeum (*Prunus*)
- Pumpkin seed oil (*Cucurbita pepo*)
- Small-flowered willow herb (*Epilobium* spp.)
- Goldenrod (*Solidago* spp.)
Materia Medica
Goldenrod
- Solidago canadense
- Daisy family, different species indigenous to North America, Europe
- Mild antiseptic, increases blood flow to urinary tract, promotes healing, antiinflammatory
- Useful with other herbs like pipsissewa as a general urinary tonic
- Use with prostate herbs; has antiinflammatory effect

Solidago californica

Materia Medica
Uva-Ursi
- Arctostaphylos uva-ursi
- Common wild plant and cultivated ground cover in northern North America and Europe
- Use fresh new leafy shoots
- Strong antiseptic, diuretic
- Take a tea or tincture
- Short-term use only (1-2 weeks); can be irritating
- Dose of uva-ursi recommended by the Commission E is 3 g leaf extracted in 150 ml water by either hot or cold infusion up to four times daily, providing 400-460 mg arbutoside

Materia Medica
Corn silk
- The stigmas of Zea mays
- contains allantoin
- soothing, antiinflammatory
- healing, helps prevent, reduce scarring
- promotes healing

Kava
- Traditional Pacific drink
- Euphoriant, relaxant, anxiolytic, soporific
- Efficacy, effect depends on - set and setting - cultivar, preparation - how one is feeling to begin with
- Traditionally used for urinary tract infections to relieve pain, spasms and increase urine

Materia Medica
Berberine-Containing Herbs
- Mahonia aquifolium (Oregon grape root)
- Other plants: coptis, goldenseal, barberry
- Berberine is a strong antibacterial, antifungal and antiinflammatory (heat-clearing) substance found in a number of herbs; used worldwide
- Berberine is weakly absorbed from gut but still effective

Berberis vulgaris

Materia Medica
Horsetail
- Equisetum arvense, E. hyemale used in TCM, Europe
- Contains organic silica in the form of silicic acid
- Mild diuretic (aquaretic), cleanser, alternative (improves health of the tissues)
- Don’t use it without tincturing, cooking (as a decoction)

Equisetum Telmateia
Materia Medica

Cleavers
- *Galium aparine*
- Rubiaceae or coffee family member
- Common native in North America and Europe, weedy, rough-haired herb
- Contains iridoid glycosides which are unstable; tincture fresh, use juice or stabilize juice with 25% ethanol
- Mild antiseptic, cleanser, aquaretic

Juniper Berry
- *Juniperus communis*
- The berries of other local species can be used
- Strong antiseptic, aquaretic, antiinflammatory
- Avoid during pregnancy, with kidney infections
- Limit use to bladder infections, rheumatism, 2-3 weeks at a time

Dandelion Leaf
- *Taraxacum officinale*
- Asteraceae or daisy family
- Leaves have aquaretic effects
- Increases urine output to "flush" wastes from urinary tract
- Mild antiinflammatory because of flavonoids and sterols
- Use as a tea or tincture

Garlic tincture
- *Allium sativum*
- Crush garlic cloves and add to 100 proof vodka, steep for 2 days, press, discard pulp and filter for use; store in refrigerator
- Take 1-3 droppersful several times a day for infections of all kinds
- Highly effective against many kinds of pathogenic organisms; some effectiveness against *E. coli*

Kidney Yin Tonics
- Look for reddish tongue with little or no coating, night sweats, fatigue, weak knees or ringing in the ears (signs of Kidney yin deficiency)
- Herbs:
  - Rehmannia
  - American ginseng
  - Burdock root
  - Nettle leaf and seed
- Take in tea form for at least 2-3 months

Marshmallow Root
- *Althea officinalis*
- Mallow family member
- Mucilaginous root brewed as a decoction, along with other herbs
- Mildly antiinflammatory, replaces the body's natural mucus
- Commonly used for urinary, upper respiratory tract and bowel infections and inflammations
**Materia Medica**

**Pipsissewa**

- *Chimaphilla umbellatum*
- Native plant from the huckleberry family of mixed conifer forests of the n U.S.
- Widely used by native American indian tribes as medicine
- Contains mucilage, quinones that help disinfect the urinary tract, slightly increase urine output
- Use as a tea (1 tsp/cup, 2 x daily) or tincture (2-3 ml, 2-3 x daily)

**Usnea**

- *Usnea spp.*
- A lichen is a symbiotic relationship between a blue-green algae and a fungus
- Epiphytic (hangs out) on trees and shrubs; bioindicator for pollution
- Contains lichen acids (phenolic compounds) which are strongly antibacterial
- Poorly absorbed from gut