

# Herbs in Chronic Kidney Disease Panacea or Poison?



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# Noni on the 99

- Kills harmful microbes, lowers blood pressure – H. Sim (1993)
- Inhibits growth or completely eradicates some cancers such as Lewis lung carcinoma and Sarcoma-180 by stimulating the immune system – A. Hirazumi (1997)

# Noni on the 99

- Good source of potassium and vitamin C –  
N. Peerzada (1990)
- Morinda and its distributors make no curative  
claims for its product



# Noni on the 99

- ‘A simple gift from a pristine paradise has set in motion a mission that will capture the attention of the world’
- Sales in Canada and US:\$72,000,000 in first year
- Lucrative leadership bonuses – pays 8 levels

# Noni Juice

- Case : hyperkalemia despite adhering to low potassium diet
- Upon questioning, had started noni juice purchased from health food store
- Asked to stop consuming noni juice because other juices known to have high potassium content
- Heard from relative that noni juice had cured him of cancer

# Noni Juice

- Brother who also had renal disease took noni juice and instructed him to take noni juice regularly to improve energy level
- “did not understand the power of noni juice”
- Never returned to clinic

# Noni Juice – Literature Search

- No information on internet or medical literature on potassium content
- Lab assay: potassium = 56.3 mEq/L
- Orange Juice: potassium = 51 mEq/L

- Natural Kidney Flush Herbal Tea





- 75% Canadians have used herbal medicine
- More common in people with chronic conditions
- Women > Men
- 75% world population depend on botanical medicines for basic health care

# How many of you have used a herbal product?

- Not for or against
- Next year may be saying something different
- Evidence based

# Why are you taking herbal supplement?

- Medical system too impersonal
- Holistic approach is not taken by health care providers whereas it is with alternative health care practitioners
- Patient centered vs treatment centered

# Historical Perspective

- Post second world war
  - ↑ synthetic drugs
    - Science vs blind faith
  - ↓ herbal products

# Prescribed Medications

- Birth defects
- Severe side effects

- Prescribed medications

- Artificial
- Toxic



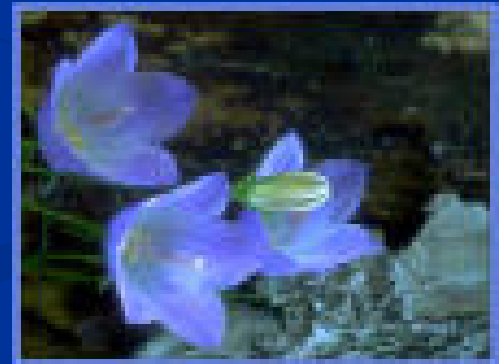
- Herbal products

- Natural
- Safe



# Plants

- Synthesize complex molecules for structure and function
- Rich source of chemicals



- Purified chemicals from plants have been used as medicines
  - Digoxin, morphine
  - >50% of western drugs are derived from plants
  
- Parts of plants or crude extracts
  - Herbal medicines
    - Hundreds of chemicals
      - Influenced by species, variety, part of plant
      - Conditions of growth (soil, temperature, water)



# Standardization

- Unique identifier
- Not necessarily active ingredient
- Difficult
- Seldom accomplished

# National Institutes of Health Glucosamine

- Could not find satisfactory source of glucosamine and chondroitin for study
  - Batch to batch variability
- Manufactured it themselves
  - How are patients going to access this?

# Natural Health Product Regulations

- Natural health products can be sold either as food or drugs
  - Voluntary
- Drug
  - Drug Identification Number
- Food
  - Do not provide adequate safety information on their labels

# Drug Identification Number (DIN)

- Lack of DIN does not imply inferiority
- DIN does not guarantee safety or quality
- Applying for DIN is voluntary
  - Same product can be sold as drug (DIN) or food (no DIN)

# Kava and Liver Failure

- Used for many indications including insomnia
- Study at VGH
- Four cases of liver toxicity in Canada
- Thirty-nine cases of liver injury in Germany
  - 3 fatalities

# Kava may be identified as:

- kava
- kava kava
- kava-kava
- kava root
- kava-kava root
- kavain
- kava pepper
- kavapipar
- kawa
- kawa kawa
- kawa pepper
- kawapfeffer
- maori kava
- rhizoma di kava-kava
- ava
- ava pepper
- ava root
- awa
- gea
- gi
- intoxicating pepper
- intoxicating long pepper
- kao
- Piper methysticum
- Macropiper Latifolium
- Piper inebrians
- maluk
- meruk
- milik
- kew
- Rauschpfeffer
- sakau
- tonga
- Wurzelstock
- yagona
- yangona
- yaqona

# The Challenge

- Some of these products have drug identification numbers, others do not

# Chinese Herbal Product for Weight Loss Causes Renal Failure

- 70 patients required dialysis, transplantation
- 18 developed urothelial cancer
- Cause
  - Aristolochic Acid
    - Probably included in product by mistake



# PC Spes for Prostate Health

- contaminated with
  - Warfarin
  - Alprazolam
  - Indomethacin
  - Diethylstilbestrol

# Tung Shueh

- Promoted for problems of the heart, liver and kidney
- Chemical analysis per pill:
  - 3.86mg indomethacin
  - 16mg mefenamic acid
  - 8mg diclofenac
  - 0.73mg diazepam
- Directions: 4 pills three times per day

# Tung Shueh

- Lists 21 active ingredients
- Diazepam and mefenamic acid
  - Not included
  - Synthetically derived
  - Adulterated purposefully



# Red Yeast Rice and Rhabdomyolysis

- 28 y.o. renal transplant patient
- Refused statin therapy
- Opted to naturally lower cholesterol
- CPK in 2 months was 2600 U/L (N < 130 U/L)
- CPK ↓ 600 U/L 2 weeks after herb discontinued

# Red Yeast Rice and Rhabdomyolysis

- Contains an ingredient similar to lovastatin
- Statins interact with cyclosporine increasing statin levels

# Chinese Herbal Remedies

- Multi-ingredient combinations
- Difficult to find information
- Powerful radio/TV advertisements
- Very expensive

# Natural Health Products – New Regulations

93%

Health Canada Santé Canada

## WHAT DOES NEW LABELLING MEAN FOR YOU?

Informed Choice  
Assurance of the Product's Safety, Quality and Claim  
Confidence in knowing that what is on the label is in the bottle

**Product Safety**  
A lot number and contact information will facilitate reporting on concerns and assist with recall action in the event of a product safety issue.

**Health claim**  
All natural health products will display their recommended use or purpose which is appropriate and truthful.

**Natural Product Number**  
The Natural Product Number indicates that Health Canada has assessed this product for its safety, quality and

Dr. D's  
ECHINACEA TABLETS

Relieves sore throats due to colds

30 Tablets

1 of 1 11 x 8.5 in

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  - Safety
  - Quality
  - Claim
- Confidence in knowing what is on the label is in the bottle



# Product Safety

**A lot number and contact information will facilitate reporting on concerns and assist with recall action in the event of a product safety issue.**



200%

**Dr. D's**  
**ECHINACEA TABLETS**

**Relieves sore throats  
due to colds**

**30 Tablets**

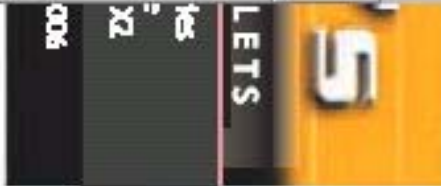
**NPN 00000001**

**Health claim**  
All natural health products will display their recommended use or purpose which is appropriate and truthful.

**Natural Product Number**  
The Natural Product Number indicates that Health Canada has assessed this product for its safety, quality and claim and has authorized it for sale in Canada.

1 of 1 11 x 8.5 in

safety issue.



# Dr. D's

## A complete listing of all ingredients

A complete listing of all medicinal and non-medicinal ingredients will help you make an informed choice allowing you to include and/or avoid ingredients which are important to you.

Recommended use or purpose: Traditionally  
dose (adults): Take orally 1 tablet 3 times p  
ingredient: Each tablet contains 1000 mg of  
medicinal ingredients: Microcrystalline cellul  
acid and magnesium stearate. Risk informat  
qualified health care provider if you have a  
Usage ou fins recommandées: Utilisé traditi  
par le rhume. Dosage recommandé (adultes  
Peut être utilisé sur une période de 10 à 21  
mg de racine d'échinacée à feuilles étroites  
médicinaux: Cellulose microcristalline, phos  
et stéarate de magnésium. Information conc

# ECHINACEA TABLETS

for the relief of sore throats due to colds. Recommended with water. May be used up to 10-21 days. Medicinal ingredient *Echinacea angustifolia* (Echinacea) root. Non-medical ingredients: calcium phosphate anhydrous, silicon dioxide, stearic acid. Do not use if you are pregnant or breastfeeding. Consult a health care professional if you have any medical conditions or are taking other medications. Store in dry place.

Indication: Pour le soulagement des maux de gorge causés par le rhume. Peut être utilisé jusqu'à 10-21 jours. Médicament: 1 comprimé oralement 3 fois par jour avec de l'eau. Ingrédients médicinaux: Chaque comprimé contient 1000 mg d'extrait de racine (*Echinacea angustifolia*). Ingrédients non-médicinaux: phosphate de calcium anhydre, dioxyde de silicium, acide stéarique. Précautions: Ne pas utiliser si vous êtes enceinte ou si vous êtes allaitante. Consultez un professionnel de la santé si vous souffrez de troubles du système

## Complete conditions for use

Complete conditions for use, in both official languages, including any warnings and or/cautions will assist you in using the product in a safe and appropriate manner.



# Natural Health Product Regulations

- Effective January 1, 2004
- Transition period
  - 2 years
    - Site licensing and employ good manufacturing processes
  - 6 years
    - Product licensing, DIN products will be transferred to NPN or DIN-HM (homeopathic medicine)

when elevated. Severe hypertriglyceridemia imposes a significant risk for pancreatitis, and patients with a TG level higher than 10 mmol/L on optimal lifestyle therapy require drug treatment. Available options include a fibrate, niacin and salmon oil supplementation.

# Traditional Chinese Herbalists

- Treating people with CKD for thousands of years
- Concoctions include diuretics + herbs

# ST

- Combination of 12 herbs used in China and Japan for kidney disease
  - Animal studies
    - Decreased blood pressure and protein excretion
  - Pediatric IgA nephropathy
    - Decreased protein excretion
  - Insufficient evidence to recommend at this time



# St. John's Wort

- Antidepressant
- Proposed mechanism of action
  - Inhibits reuptake of serotonin, dopamine, norepinephrine
- Effectiveness
  - Mild to moderate depression

# St. John's Wort

- Toxicity
  - Generally well tolerated
  - Insomnia, anxiety, headache
- Dose
  - Variable depending on standardization

# St. John's Wort

- Drug interactions
  - Many serious interactions reported
  - Can decrease cyclosporine levels by 30-70%
    - Has led to transplant rejection
  - Banned in France due to many drug-herb interactions

• [www.naturaldatabase.com](http://www.naturaldatabase.com)

# Kidney Disease:Special Considerations

- Unpredictable pharmacokinetics
- Polypharmacy
  - St.John's Wort and Cyclosporine
- Dialyzability
- Calcium Carbonate
  - Health food store instead recommended calcium citrate with magnesium

# Watch out for herbals with:

- Anti-inflammatory activity
  - May affect kidney function
- Weight loss activity
  - May affect electrolytes
  - May affect blood pressure
- Diuretic activity

# Monitoring

- If you wish to use, be informed, monitor closely
- Record brand and ingredients
- Always maintain same brand
- Include in your medication list

# Monitoring

- Keep a diary
  - start low and increase slowly
  - consider starting at half the dose recommended on the label
  - report adverse reactions
  - reassess, reassess, reassess

# Limitations

- Product used in studies not necessarily what is available on the market
- Long-term safety not generally known
- Qualifications of individual providing products



# Guiding Principles

- Do no harm
- Need for dialogue
  - With patients
  - With other health care providers
- Take responsibility for recommendations
- Respect patient autonomy

# Reporting Adverse Reactions

- Phone: 1-866-234-2345
- Fax: 1-866-678-6789
- Online: [www.healthcanada.gc.ca/medeffect](http://www.healthcanada.gc.ca/medeffect)
- Form: available in the CPS – last page

# References



- [www.naturaldatabase.com](http://www.naturaldatabase.com)
  - Available free on-line if you have UBC library card
- [www.quackwatch.com](http://www.quackwatch.com)
- Chandler F. Herbs:everyday reference for health professionals. Ottawa, CPhA & CMA 2000
- Cochrane Database of Systematic Reviews
  - Chinese medicinal herbs for diabetic kidney disease