Herbal Medicine Materia Medica 1

WHMF112

Session 7

Immune System (Immuno-modulators)

Part II
Assessment

Open Book In-class Mid Semester Exam
Students have 1 hour (+ 5 minutes reading time) to complete this exam.
Students may use printed notes & text books:
• Printed: powerpoint notes, herbal actions & materia medica worksheet
Texts:
• Fisher, C. (2009). Materia Medica of Western Herbs

No electronic devices are allowed
Session 7

Assessment: Mid Semester Exam

Immune System (Immuno-modulators) Part II:

- Materia Medica (from Traditional literature & research):
  - Astragalus membranaceus
  - Eleutherococcus senticosus
  - Uncaria tomentosa
  - Hemidesmus indicus
  - Tylophora indica
Astragalus membranaceus

Plant family: Leguminosae (Fabaceae)
Parts used: Root

Actions:

• immune modulation, immune enhancing (enhanced natural killer cell activity, increased thymus weight, balanced Th2:Th1, enhanced T cell function, enhanced levels of IgM, IgE, IgA and cAMP).

• tonic, adaptogenic (saponins, polysaccharides, flavonoids)

(van Wyk & Wink, 2004; Bone & Mills, 2013; Braun & Cohen, 2015)
Astragalus membranaceus

Actions contd:

- cardiotonic, hypotensive (saponins can modulate \( \text{NA}^+ \), \( \text{K}^+ \) -ATPase in heart muscle - positive inotropic & reduced resting potential)
- neuroprotector, nootropic
- antioxidant, hepatoprotective (polysaccharides), hypoglycaemic, anticarcinogenic (saponins balance suppressed immune function caused by tumor mediated cell signals or drugs), diuretic

(van Wyk & Wink, 2004; Bone & Mills, 2013, Braun & Cohen, 2015)
Astragalus membranaceus

• Enhanced DNA replication, repair and reduced damage, cell health & longevity, protection against cell hypoxia and enhanced tolerance to stress including liver, kidney, heart, nerve cells.
• Nutritive high in polysaccharides, flavonoids, over 20 amino acids and trace minerals.

(Leung, 2010; Bone & Mills, 2013)
Astragalus membranaceus

Historical & Traditional Prescribing

• Tonifies the Qi, blood and spleen. Liver, kidney, spleen, lung, heart tonic
• Postpartum fever and recovery from severe blood loss, fatigue linked to decreased appetite, diarrhoea and anaemia.

(Bone 2003; Braun & Cohen 2015)
Astragalus membranaceus

Cautions and Contraindications / Warnings;
• Not advisable to use in the acute stage of infections

Herb/Drug Interactions:
• Enhanced effect: anticoagulant, antidiabetic, antihypertensive, antilipemic, CNS stimulant, diuretic
• Altered effects: antineoplastic, steroidal agents
• Reduced effects: beta blockers, immunosuppressant

Pregnancy and Lactation Data:
• None known

(Davis, 2011; Bone & Mills, 2013)
# Astragalus membranaceus

<table>
<thead>
<tr>
<th>Preparation</th>
<th>Adult mL/g</th>
<th>Dosage directions &amp; considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td></td>
<td>Effects are seen within two weeks</td>
</tr>
<tr>
<td>Tincture 1:2 (25%)</td>
<td>30-60mL/ week</td>
<td>Reduced level of polysaccharides. Take up to three times per day</td>
</tr>
<tr>
<td>Dried root decoction</td>
<td>10-30gm/day</td>
<td>Higher levels of polysaccharides &amp; saponins. Take up to three times per day</td>
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</tbody>
</table>

*(Braun & Cohen 2015; Bone & Mills, 2013)*

**Taste:** Sweet and warm *(Thomsen & Gennet 2009)*
Eleutherococcus senticosus

Plant family: Araliaceae
Parts used: Root
Actions:
• immunomodulator
• adaptogenic (modulates stress response), tonic (anabolic activity)
• antiviral, anti-inflammatory, hypoglycaemic, antioxidant
• hepatoprotective, neuroprotective, cardioprotective, vasorelaxant
• Antiallergic, antiplatelet aggregating
  (Bone, 2003; Braun & Cohen, 2015)
Eleutherococcus senticosus

Historical & Traditional Prescribing

- As a tonic to increase ‘Qi’ in yang deficiency of spleen and kidney; to increase sexual function; for bronchitis; heart ailments; rheumatism; to improve general health; restore memory; promote appetite; for longevity; as a general tonic; considered to be sedative; to prevent colds & flu.

(Braun & Cohen, 2015; Fisher 2018)
Eleutherococcus senticosus

Cautions / Contraindications:
- Traditional prescribing contraindicates use in acute infections & hypertension

Drug / Herb Interactions:
- Altered effect on digoxin

Pregnancy & Lactation:
- Category B1 in pregnancy & may be compatible in lactation
  (Leung, 2010; Bone & Mills, 2012)
**Eleutherococcus senticosus**

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</table>
| Oral                       |                   | Healthy individuals & elderly  
6 week course with 2 week break  
High doses may cause transient insomnia, palpitations, tachycardia and hypertension |
| Tincture 1:2 (25%)         | 15-55mL/week      | Take up to three times per day                                                                      |
| Powdered or cut teas       | 2-3gm/day         |                                                                                                     |

(Blumenthal *et al* 2000; Hoffmann, 2003)

**Energetics/Taste:** Slightly sweet, warm, fibrous, woody.  
(Wood, 2008; Thomsen & Gennat 2009)
Uncaria tomentosa

Plant family: Rubiaceae
Parts used: Stem bark

Actions:
• Immunostimulator (oxidole alkaloids), antifungal (topical), antiviral (topical)
• Anti-inflammatory, antioxidant
• Antitumour (TNF-α – tumor necrosing factor alpha)
  (van wyk & Wink, 2004; Mosby, 2010; Bone, 2003; Thomsen & Gannet, 2009)

(Stelfox D. (2002). Uncaria tomentosa)
Uncaria tomentosa

Historical & Traditional Prescribing

• Used by Ashaninka priests exclusively to eliminate disturbance in communication between body and spirit.

• Traditional Peruvian medicinal uses include degenerative & inflammatory conditions, gastric ulcers, diabetes, asthma, convalescence and debility. Traditional Peruvian medicine also used cat’s claw as a tonic or restorative. (Bone 2003)

(Stelfox D. (2002). Uncaria tomentosa)
**Uncaria tomentosa**

Drug / Herb Interactions:
- Additive effects: Analgesic, anticoagulant, antidiabetic, antihypertensive, antilipemic, photosensitizers, inhibits CYP450 3A4 activity
- Reduced effects: oestrogens, progesterone, immunosuppressants, nephrotoxic agents
- Altered effects: Antineoplastic, diagnostic radiopharmaceuticals

Pregnancy and Lactation:
- Insufficient evidence. Traditional use as an abortifacient & contraceptive (Bone, 2003; Davis, 2011)
## Uncaria tomentosa

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<tbody>
<tr>
<td>Oral</td>
<td></td>
<td>Diarrhoea, nausea, vomiting, headache after ingestion have occurred especially in high doses</td>
</tr>
<tr>
<td>Tincture1:2 (60%)</td>
<td>30-75mL/week</td>
<td>Take up to three times per day</td>
</tr>
<tr>
<td>Dry herb</td>
<td>3-6gm/day</td>
<td>(Bone 2003; Thomsen &amp; Gennat 2009; Davis, 2011)</td>
</tr>
</tbody>
</table>

**Energetics/Taste:** bitter, warm (Thomsen & Gennat 2009)
Hemidesmus indicus

Plant family: Asclepiadaceae

Parts used: Root

Actions:

- Immunodepressant (on both cell-mediated & humoral components of immune system)
- Depurative/alterative Diaphoretic, anti-inflammatory
- Vulnerary (topical), antifungal

(Bone, 2003; Banerjee & Ganguly, 2014)
Hemidesmus indicus

Historical & Traditional Prescribing

• In Ayurveda, it is regarded as a depurative (similar to Smilax) and tonic
• Diseases of the genitourinary system
• Topically as an anti-inflammatory remedy
• Loss of appetite, fever, skin diseases, chronic cough
• Snake bite

(Bone 2003)

Hemidesmus indicus

Cautions and Contraindications:
• None known

Pregnancy and Lactation:
• No adverse effects are expected

Side effects / Adverse Events:
• None expected if taken within the recommended dosage range

(Bone 2003)

**Hemidesmus indicus**

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<tbody>
<tr>
<td>Oral</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tincture 1:2 (45%)</td>
<td>25-60mL/week</td>
<td>Take up to three times per day</td>
</tr>
<tr>
<td>Dried herb</td>
<td>3-9gm/day</td>
<td></td>
</tr>
</tbody>
</table>

(Thomsen & Gennat 2009)

**Energetics/Taste:** sweet, bitter, cool, demulcent/moistening (Thomsen & Gennat 2009; Banerjee & Ganguly, 2014)
**Tylophora indica**

**Plant family:** Asclepiadaceae  
**Parts used:** Leaf  
**Description:**  
- Antiasthmatic, anti-inflammatory, immune depressant, antiallergic, emetic (Bone 2003)
**Tylophora indica**

**Historical & Traditional Prescribing**

- Bronchial asthma, chronic bronchitis, catarrh, dysentery.
- Snakebite (in large doses).
- As an emetic, diaphoretic and expectorant, a substitute for Ipecacuanha.

(Bone 2003)
Tylophora indica

Cautions / Contraindications:
Allergy/ hypersensitivity, immunocompromised patients.

Warnings and Precautions:
Laxative and purgative properties

Herb/Drug Interactions:
Additive effect: CNS depressants, immunosuppressants

Pregnancy and Lactation:
Traditional use as an abortifacient, don’t use in pregnancy. Not recommended in lactation

(Davis 2011)
# Tylophora indica

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<tr>
<td>Oral</td>
<td></td>
<td>Short term use (max four weeks only) Side effects abdominal pain, diarrhoea, dysgeusia, mouth soreness, nausea/vomiting, ↑ salivation even at low dose</td>
</tr>
<tr>
<td>Tincture 1:5</td>
<td>7-14mL/ week</td>
<td>Take up to three times per day First 10 to 14 days of each calendar month (20-50 drops/day) – start with 5 drops per dose</td>
</tr>
<tr>
<td>(45%)</td>
<td>(45%)</td>
<td></td>
</tr>
<tr>
<td>Dry herb</td>
<td>200-400mg / day</td>
<td>1-3 times per day</td>
</tr>
</tbody>
</table>

(Bone 2003, Thomsen & Gennat 2009; Davis, 2011)

**Energetics/Taste:** cool (Thomsen & Gennat 2009)
Discussion

Class Discussion:

• When would you use immuno-suppressant herbs?
• What dosage (within a weekly range) would you employ & why?
• How long would you use them for?
• When would you stop? Why?
References


(2014). Medicinal importance of Hemidesmus inducus: a review on its utilities from ancient Ayurveda to 20th century. Advances in Bioresource, Vol 5 (3); 208-213
References


Ellingwood, F. (1898). *American materia medica, therapeutics and pharmacognosy*. Reprint, Eclectic medical publications


References


Recommended Readings


- *Astragalus membranaceus* p. 41-47
- *Eleutherococcus senticosus* p. 458-465


- *Baptisia tinctoria* p. 100-101
- *Eleutherococcus senticosus* p. 15-17

Monograph on *Astragalus* by Alternative Medicine Review 2003 Thorne Research Vol 8 No 1

Recommended Readings


- Monograph on *Uncaria* http://apps.who.int/medicinedocs/en/m/abstract/Js16713e/
Recommended Readings


- Monograph on *Astragalus*
  [http://apps.who.int/medicinedocs/en/d/Js2200e/7.html](http://apps.who.int/medicinedocs/en/d/Js2200e/7.html)


- Monograph on *Eleutherococcus*
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