

Example of a research based formulation method

Client Information:

Female, 37

Chronic Medical Conditions and medication:

HSV – Acyclovir 400mg b.i.d

Allergies – Cetirizine Hcl 10mg q.d

Client is also currently taking a probiotic q.d , 1000mg of Ganoderma Lucidium (mycellum and fruiting bodies) q.d and two Standard Process formularies called “Circuplex 2650” and “Clorophyll Complex 2325” q.d..

Energetically client is often physically cold and dry and often thirsty

Conditions for which client is seeking phototherapy:

Recurrent Headaches (not migraines) client indicates they are frequently tied to her menstrual cycle. Client says she had heavy cramping since puberty until implementing IUD contraception. Client equally would like to address allergies. If cetirizine therapy is stopped for 24 hours self reported symptoms of “Itchy eyes, sneezing and sinus nasal congestion, as well as a runny nose” manifest.

Herb Selection:

Reishi: The client is already taking Ganoderma Lucidium, and I would advise the client to continue to take this. Reishi is indicated for viral infections and the Ganoderic acids demonstrate analgesic properties It also enhances protective mechanisms of CNS and inhibits allergic reactions. Energetically Reishi is warming and the client is frequently cold.

Licorice: (Glycrrhiza glabra) Based on Dr. Pengelly’s lecture this herb is well indicated as an adaptogen with both anti-allergic and anti-viral properties. Energetically, It is also moist and warming.

Milky Oats (Avena Sativa) Hoffman indicates that this herb is a nutritive nervine tonic.

This is corroborated by Skinderi.

Plantain (*Plantago Major*) Skinderi indicates plantain has anti-inflammatory and immunomodulant effects. Chevalier indicates it is effective in allergic rhinitis.

Echinacea (*Echinacea purpurea*) for its immunomodulating, antiviral properties. Chevalier also indicates this herb for Allergies and specifically allergic rhinitis. Braum & Cohen also cite studies of it's particular effectiveness against HSV. Energetically echinacea is warming, and activating.

Detailed Description of proposed Herbs

Avena Sativa

Family: Poaceae

Common name Oatstraw Parts used: dried aerial parts

Oatstraw has long been a gentle participant in phytotherapeutics. It is a salty, nutritive and cooling yin herb (Forêt, n.d.). It has an extensive history of use as a longevity herb in Aryurveda (Weed, 2011). Research compiled by Commission E indicates that oatstraw was cultivated as early as 2000 B.C.

Traditionally oatstraw has been used as a nervine tonic, and a nutritive agent (Felter, 1922). These actions are corroborated by modern sources (Hoffman, 2003).

Eclectic medicine indicated oatstraw for headache from exhaustion or overwork, or the "nervous headache of menstruation" (Felter, 1992). Modern phytotherapy indicates oatstraw for anxiety (Duke, 2002), treatment of herpes simplex, and as a nervous system restorative (Blumenthal, 2013), These used are reinforced through much of the modern literature on oatstraw (Hoffman, 2003) & (Williamson & Wren, 2003).

Important constituents in oatstraw include the triterpene avenacin which demonstrates hemolytic activity which inhibits pathogenic fungi in plants and may increase intestinal

mucosa permability (Hoffman, 2003 and Blumenthal, 2013). Also present are steroidal saponin avenacoside (Pengelly, 2004) as well as proteins, C-glycosyl flavones; avenacosides (spirostanol glycosides), fixed oil; and Vitamin E (Hoffman, 2003). Esters of silicic acid (the same nutritive component found in horsetail) are present in the leaves along with polyphenols and monosaccharides and oligosaccharides. Oatstraw also contains a high content of iron, manganese, and zinc.

While modern biomedical research has not unequivocally proven the traditional actions attributed to oatstraw, they have begun to lay the groundwork. One study found indications of enhanced cognitive performance in healthy adults when given a preparation of *avena sativa* (Dimpfel, Storni & Verbruggen 2011). Similar effects were found in a population of elderly adults with below average cognitive performance (Berry, Et. Al., 2011).

The AHPA BHS classifies *Avena Sativa* as Safety Class: 1 Interaction Class: A (McGuffin, 1997)

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Echinacea Spp. Specifically *E. Purpurea*

Family: Asteraceae

Echinacea, Purple Coneflower

Part(s) used: Aerial Parts, Roots, Leaves, Flowering Herb, Juice

The energetics of echinacea are complex. Some see it as pungent cold and dry (Forêt, n.d.). Others see it as warming and activating or stimulating (McDonald, n.d.). *Echinacea purpurea* root extraction in all it's forms is palpably warming and activating, one example of this is the action of alkamides on the tongue from a successful decoction or hydro-ethanolic extraction. It's indications and actions also lend credence to using it as an energetically warming and stimulating plant.

As a native north american plant, echinacea was used by the indigenous civilization.

There is evidence of its use by the Sioux, Pawnee, Omaha- Winnebago and Dakota tribes. Echinacea had an extensive list of traditional indications. A small sampling of these uses includes: snakebite, distemper, swelling, and fevers (Braun & Cohen, 2010) and (Grieve, 1971). The eclectic research of the time focused primarily on *Echinacea angustifolia* (Felter, 1922). But in the 1950's a misidentified specimen plant resulted in most European research that followed being on *E. Purpurea* (Blumenthal, 2013).

Traditional actions associated with echinacea comprise a long list. Felter one wrote about *Echinacea Angustifolia*, "If there is any meaning in the term *alterative* it is expressed in the therapy of echinacea" (Felter, 1922). It was also used as an anti-microbial both as an immune tonic and as a topical antiseptic and vulnerary (Grive, 1971).

The preponderance of modern regulatory and academic indications for echinacea are for colds and chronic infections of the upper respiratory tract (Blumenthal, 2013), (Hoffman, 2003).. It is also used as an immune-stimulant but Braum & Cohen (2010) point out it is also useful as an immune modulator. Dr. Duke (2002) indicates that it activates immunity against herpes, influenza and other viruses. Jim McDonald indicates it for chronic or deep cystic acne and other septic skin eruptions and argues that long term use is appropriate in these scenarios (McDonald, 2010). One other notable modern indication is for allergic rhinitis (Pengelly, 2016).

Terpene constituents of note in Echinacea include Volitale oil which contains Humulene (Hoffman, 2013). The polyphenol flavonoid rutin is present, as well as caffeic acid esters, echinacoside, which has anti-viral properties, is present in *Echinacea angustotolia* and chicoric acid is present in *E purpurea*. Perhaps the most distinctive constituent is alkylamide which provides the tingling sensation which is a characteristic of good echinacea extractions. There are also anti-viral, and anti-inflammatory polysaccharides (echinacin B), and polyacetlyines (Hoffman, 2003) and (Williamson, 2003)

There is some controversy in the literature surrounding echinacea. One study found no clear benefit to *Echinacea Purpurea* in the treatment of HSV2 (Vonau, Et. Al, 2001). There

are questions about the methodology sample size, and analysis of this study (Chase, 2002). Conversely other paywalled german language studies have documented clear efficacy in treating HSV-2 (Natural Medicines, 2016). Despite these ambiguities the presence of anti-viral constituents in the aerial parts (Vimalanathan, Et. Al, 2005) and roots (Hudson, Et. Al, 2005) of *Echinacea purpurea* is definitive. The vulnerary actions have also been verified by research (Yotsawimonwat, Et. Al. 2010). Current research on the anti-inflammatory effects of *echinacea spp* indicates that it may be other compounds than the traditional marker constituents which are responsible. (Vimalanathan, Arnason, & Hudson, 2009).

The AHPA BHS classifies *Echinacea purpurea* as Safety Class: 1 Interaction Class: A (McGuffin, 1997). It may cause an allergic reaction in people who are sensitive to the Asteraceae family. Many authors assert that it should not be used for more than 2-8 weeks (Duke, 2002).

Ganoderma Lucidium

Family: Polyporaceae Reishi / Ling Zhi

Parts used: fruiting bodies

Reishi is a large polypore mushroom with a tough consistency. It is too tough to be eaten. Energetically it is very bitter, warming and tonifying. It is considered to enhance chi (Wasser, 2004).

It was renowned as the immortality mushroom by taoist sages and has been in use for over 2000 years. It is listed in Shen-Nong's "Herbal Classic's" and so it has been part of TCM since its inception. (Benzie & Wachtel-Galor, 2011).

Traditional actions associated with reishi include: enhancing vital energy, and provide

resistance against the effects of aging, treatment of deficiency fatigue, and were used as anti-inflammatory agents for the treatment of asthma or allergy. (Wasser, 2004)

Reishi is not mentioned in many of the phytotherapeutic texts consulted, aside from passing remarks. When it is mentioned, reishi proves to be a very powerful and useful mushroom. Modern phytotherapeutic indications of reishi include: hypertension and hyperlipidemia, anti-aging, oxygen deprivation, and for its immune-modulating purposes: anti-cancer, anti-viral, antibacterial, anti-inflammatory properties. Notably, it is indicated for histamine release inhibition (Williamson, 2003) and (Wasser, 2004).

Extensive research has been conducted on approximately 400 constituents found in reishi. The triterpene ganoderic acid is present as well polysaccharide beta-D-glucans and bioactive proteins (Wasser, 2004). Beta-D-glucans have been shown to have immune-modulating effects by stimulating T-lymphocytes and macrophages (Skinderi, 2003). Ganoderic acid has been shown to inhibit histamine release in-vitro and inhibit HIV-1 protease enzymes. (Wasser, 2004).

Reishi has been extensively researched. One study comparing different species of *ganoderma* found that *G. Lucidium* provides the most comprehensive anti-tumor and immune modulating activity. (Yue, Et. Al., 2006). Another team of researchers. Other research has shown that additional constituents found in reishi such as oleic acid and cyclooctasulfur, inhibit the release of histamine (Takasa, Et. Al, 1988). The immune-modulating (Yue, Et. Al, 2006), anti-viral (Hijikata, Yamada, Yasuhara, 2007) and antioxidant (Wachtel-Galor, Et. Al., 2010) effects of reishi have all been reinforced by modern research. The ancient sages were right.

The AHPA BHS classifies reishi as Safety Class 1, Interaction Class A (McGuffin, 1997).

Glycyrrhiza glabra

Family: Fabaceae

Common Name: Licorice

Parts used: rhizome and roots.

Licorice has an extensive and storied history of use. Maude grieve notes that it was in use in the ancient hellenic civilization as early as 300 B.C. Extracts of licorice were recorded to be in use around the time of Diodcorides and appears to have been in common use throughout the middle ages (Grieve, 1971).

Licorice is generally considered sweet, warm, moist and harmonizing (Forêt, n.d.)

Traditionally, it has seen extensive use in TCM, Aryurveda, and Unani.

An extensive list of traditional uses can be attributed to licorice, for example in TCM it is considered a Yin Tonic (Forêt, n.d.) and is valued for its therapeutic properties which include anti-inflammatory, anti-ulcer and as an adaptogen (Li, 2002). Similar actions are reported in the western traditions. Balick states that licorice was traditionally used as an anti-inflammatory and as a treatment for allergies. Felter points out that the ethanolic extract is useful flavoring agent for other medicines (Felter, 1922). While not recognizing licorice for use an anti- inflammatory and anti-allergic, the World Health Organization acknowledges that those uses were indicated in numerous traditional pharmacopeias (Blumenthal, 2013).

Modern research on Licorice has reinforced the traditional uses. The literature now indicates licorice as anti-inflammatory and as a strong anti-viral (Wang, Et. Al., 2015). Comission E indicates use of licorice in catarrhs of the upper respiratory tract. There is also some evidence that licorice has utility as an adrenal tonic or “quasi-adaptogenic” herb (Braun & Cohen, 2010). While ESCOP did not go so far as to indicate licorice for use as an anti-allergy use, they did highlight in vitro studies which form the preliminary groundwork for exploring licorice as an anti-allergen (ESCOP, 2009). Specifically, in-vitro studies that demonstrated glycyrrhizic acid decreasing reactive oxygen species neutrophils (Akamatsu, Et. Al., 1991) human neutrophils are implicated

in allergic rhinitis (

Some of the constituents in licorice include the terpenes glycyrrhizin and glycyrrhetic acid which provide much of the anti-viral action (Wang, et al., 2015). Bioactive glucan polysaccharides are also present and have been shown to be immune-modulating. Also present in licorice are potentially phytoestrogenic isoflavones (Pengelly, 2004) and (Hoffman, 2003).

ESCOP, Hoffman, and McGuffin all echo the same general precautions around use of licorice. Licorice is contra-indicated in cardiovascular related disorders. High doses and long term use and use of licorice during pregnancy need to be supervised by a qualified physician. Licorice likely potentiates the effect of cardiac glycosides. Licorice use is contraindicated in clients with obesity, hypertension, diabetes, and cardiac, hepatic or nephrotic diseases. The AHPA-BSH rates licorice as Safety Class 2b2d Interaction class B (McGuffin, 2007). These safety and contraindications were pervasive across the literature and uncontroversial.

Plantago Major

Family: Plantaginaceae

Common name: Plantain, broadleaf plantain Part(s) used: aerial parts

Use of plantain also dates back to the Roman and Hellenic civilizations and has been well documented by many herbalists in the European tradition such as Pliny and Culpepper. It has followed European expansion across many parts of the world and is known in many cultures as “White man’s foot” (Blumenthal, 2013) and (Grieve, 1971). Energetically plantain is astringent and cooling (Grieve, 1971) It has a sweet nutritive and building smell. It is slightly bitter cooling and drying (Fazio, n.d.). Grieve also relates that “It is a great disfigurement to lawns, rapidly multiplying if allowed to spread, each plant quite destroying the grass that originally occupied the spot usurped

by its dense rosette of leaves” (Grieve, 1971). Traditionally plantain has been used as an anti-inflammatory, and vulnerary. Grieve also mentions earlier material medicas indicating it as a “distiller of rheum upon the throat, glands, lungs etc, and cooler of inflammation of the eyes” (Grieve, 1971) all of these traditional indications when viewed through a modern lens are the symptoms of allergic rhinitis

Modern european phytotherapy indicates a separate species of plantain with a very similar constituent profile (*plantago lanceolatae*) for upper respiratory catarrhs, and oral and pharyngeal inflammation (Blumenthal, 2013) and (ESCOP, 2009). This indication is mirrored by (Hoffman, 2003) and (Duke, 2002) for *plantago major*. It is most indicated for it’s vulnerary properties.

Plantago major has been shown to contain the iridoids aucubin and catalpol which are weakly anti-inflammatory (Pengelly, 2004). Also present are a number of flavonoids such as apigenin, luteolin, and scutellarin which have been shown to have anti-inflammatory and enzyme inhibiting properties (Hoffman, 2003) and (Pengelly, 2004). Plantain also contains tannins; and mucilage which may respectively contribute to the astringent and soothing effects on the upper respiratory mucosa.

Modern research has continued to explore the traditional uses of plantain in a biomedical model. Taiwanese researches showed promising in-vitro studies of the effectiveness of a water extract of *plantago major* against Herpes-Simplex2 Virus (Ling, Cheng, Fang, 2003). These results were echoed by the same team of researchers in a separate inquiry into the immuno-modulatory effects against a HSV and Cancer by a number of *plantaginaceae* species (Chiang, Et. Al., 2003). One other study found that extracts of *plantago major* had a dose dependent increase of lymphoproliferation and the increased tissue-necrosis-factor-Alpha, which helps to further strengthen the narrative of *plantago major*’s immune enhancing properties (Gomez-Flores, Et. Al., 2000).

Plantain is classified by the AHPA-BSH as Safety Class: 1 Interaction Class: A

(McGuffin, 1997). No adverse interactions or contraindications have been observed (Hoffman, 2003).

Preparation

Sources differ on oatstraw method of preparation and dosage but based on the solubility of the constituents as well as the pleasant taste of oatstraw infusion a water infusion appears best in this scenario. Hoffman indicates 3 teaspoons of herb per 8oz infused for 10-15 minutes TID. The British herbal pharmacopoeia recommends 1-5ml of tincture 1:5 in 25% TID. Dr. Duke compiles a number of sources that give the following dosage ranges: 3 g grass/0.25 liter, several \times /day or before retiring; 3 g herb/250 ml water; 1-2 tbsp fresh herb; 2-3 g dry herb; 2.5 g dry herb/cup boiling water; 0.5-1 dropper tincture or concentrated extract 2-3 \times /day; and 3-5 ml oat tincture 3 \times /day. When aggregated, the general therapeutic dosage range appears to be at least 15g infused daily which's corroborates Susun weed's elegant and simple folk method of preparation (Weed, n.d.).

Licorice water extraction doses range over a thin and roughly equivalent spectrum. Hoffman indicates an 15 minute infusion of 1tsp per 8oz TID. Commission E recommends 5 to 15 g root daily. BHP states an aqueous extract of 1 to 5 g using either an infusion or decoction. Dr. Duke's compiled sources indicate 1-4 g root, or in tea TID, 1.5-9 g root, 2-4 g root, 1.5 (-5) g root/cup. When aggregated, the general therapeutic dosage range for licorice is 1-5g in decoction daily.

Plantain dosages are fairly consistent. Hoffman indicates 2-3ml of 1:5 in 40% TID, 2 teaspoons per 8oz of water infused for 10 minutes TID. Commission E indicates 3-6g of herb or equivalent preparations daily. The compiled dosages by Dr. Duke correspond to this range (Hoffman, 2003) Dr. Duke's aggregated dosages for reishi range from 1.5-9 grams of dry mushroom a day. Potters advises a dosage of reishi powder - 6-12g or

equivalent extract daily.

Finally, *echinacea spp* dosage recommendations also vary widely but primarily in the specific species to use. ECSOP recommends 6-9ml of pressed juice or equivalent extract of *E purpurea* daily. Hoffman recommends 1-4ml (1:5 in 40%,) TID or 1-2tsp in 8oz of water decocted for 10-15 minutes TID. The BHC recommends 1g root, 2-5 ml (1:5 in 45%), or 0.5-1ml (1:1 in 45%) of *E angustifolia* TID. Commission E recommends *E. pallida* 1:5 in 50%, from dry extract) corresponding to 900 mg herb or 6 to 9ml of pressed juice from *E purpurea* daily. Dr. Duke's compiled dosage entries for echinacea can be summarized as 1-3g dry root daily, 1-2g as tea TID, 0.25ml—1ml of 1:1 TID, and 1ml to 2 "droppers" of tincture TID.

Sources for the above dosage summaries are: (Braun & Cohen, 2010) (Blumenthal, 2013) (Duke, 2002)(ESCOP, 2009) and (Hoffman, 2003)

The goal of the treatment was to provide nutritive and building support to the client that was energetically activating and warming. The formula was an attempt to address the symptoms that were eliciting complaints in a holistic fashion encompassing support for the entire body as opposed to focusing on endocrine system modulation or herbal analgesics. Herbs were selected as well to provide immune-stimulating, and anti-inflammatory support to address the chronic, albeit latent, viral infection.

When coming up with the treatment plan for this client water extractions were chosen as the delivery mechanism for the therapeutic herbs.

For the root herbs and reishi, a decoction method was researched and the 1913 Natl Formulary Decoction which was advocated by Scudder and Lloyd was chosen. For the oatstraw and the plantain, an infusion method was chosen.

1913 Natl Formulary Decoction

50g of herb is allowed to soak in 500ml of cold water.

Another 500ml of water is added

The solution is covered and macerated in boiling water for 15 minutes. The solution is allowed to cool to 40c

The marc was pressed

cold water is strained through the marc until final extraction has 1000ml of water in it.

The marc was pressed and a dose of the decoction was consumed immediately

The rest stored in the fridge until use for no more than 2 days.

A similar variant for infusion was chosen for the oatstraw and plantain.

Infusion Method (A hybrid of Natl Formulary deciction method and Susun Weeds infusion method)

50g of herb is allowed to soak in 50ml of cold water.

950ml of boiling water is added

The solution is covered and macerated for 4 hours.

The marc was pressed and a dose of the infusion was consumed immediately The rest stored in the fridge until use for no more than a day.

The treatment plan consists of a decoction to be taken b.i.d and an infusion to be sipped all day as desired. Initially the formula was designed to be t.i.d. for both but there were compliance issues because the clients day to day schedule and the logistical challenge of carrying around multiple mason jars. With the hybrid dosing regimen, the client was able to remain in full compliance with the protocol.

Decoction:

Ganoderma Lucidium fruiting bodies whole 18g (Source: Starwest botanicals) *Echinacea*

Purpurea chopped upper root 10g (Source: Mountain Rose herbs) *Glycyrrhiza glabra*

chopped root 4g (Source: Mountain Rose herbs)

Total 32g.

The roots and mushroom are mixed together and comminuted into a fine powder in a

coffee grinder

The roots are decocted according to the aforementioned decoction method, the Natl. Formulary method mentioned states 50g, but it is assumed that extra menstrum will not affect the potency of the extraction and it may mitigate any complex extraction issues encountered by extracting multiple herbs simultaneously.

The 250ml of Decoction is poured off into a glass for immediate consumption and the other 750ml is refrigerated for consumption over the next day and a half

Per 250ml Dose which is taken b.i.d.

4.5g reishi

2.5g Echinacea

1g of Licorice root

Infusion:

30g *Avena Sativa* aerial parts (Source: Mountain rose herbs) 6g *Plantago Major* dried leaf (Source: Frontier Co-Op)

The plantain and oatstraw are mixed together and NOT comminuted. The formula is infused according to the aforementioned infusion method.

The entire decoction is poured into a mason jar and carried around to be drunk as desired.

Daily protocol in aqueous extracts: 30g oatstraw

9g of reishi

6g of plantain

5g of echinaca 2g Licorice root.

Discussion:

Since beginning the protocol 4 weeks ago the client has been headache free. The client also reports significant improvement in the severity of pre- menstruation symptoms, although the duration of menstruation was notably longer than usual. The client also discontinued Cetrizine a week ago is not experiencing any symptoms of allergic rhinitis. The cessation of cetirizine was very empowering for the client because they were resigned to taking it daily for the rest of their life. The client is also considering stopping the prophylactic acyclovir, but I told the client that they would need to discuss that with a qualified herbalist and not a student. One final step which has yet to be addressed is the literature's advice to only take echinacea and licorice for short periods of time. Further research is being conducted on this topic. One possibility is that the phytotherapeutics were able to facilitate a return to wellness in the client and after the protocol they will not need to continue their use in the same formula and ratios. After the initial success the client is interested in progressing with the formula as designed for another month or two.

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