

Detailed Case Report - Angel

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Herbal treatment of Dermatomyositis in Angel, a Shetland Sheepdog

Abstract:

Dermatomyositis is a genetic disorder that occurs in Shelties (Shetland Sheepdogs) and Collies primarily, though is occasionally seen in other breeds. The pathogenesis is not fully understood, but it is thought that an immune-mediated microvascular vasculopathy results in inflammatory lesions of the skin, muscle and connective tissues. The condition can vary in severity from mild dermatologic signs early in life that never recur to life-threatening muscle atrophy causing megaesophagus and other complications (Medleau and Hnilica 2006; Lindsey, 2012; Shell, 2015). In Angel's case she has had periodic flare-ups with scabbing and inflammation of the skin leading to areas of permanent scarring and alopecia along her face, back, legs and tail tip. She does have muscle atrophy along her facial muscles, but has not had difficulty with ambulation or ingestion. Conventional treatment of this disorder has varying success with the primary goal being to control inflammation and progression of signs using immunosuppressive drugs such as prednisone and cyclosporine and to improve circulation to connective tissues using pentoxifylline (Trental) (Plumb, 2015). A Western herbal medicine formula was developed for Angel with good long-term success in controlling dermatological signs and flare-ups.

Angel– 6 yr old Sheltie mix, spayed female, 24.6 lbs

History:

Angel was adopted from a Sheltie rescue organization 5 years ago at 1 year of age. At the time of adoption she had several areas of scarring and alopecia periocularly and over her nasal planum, back, tail tip and legs along with muscle atrophy of the facial muscles. She had been diagnosed with inherited dermatomyositis, though it is uncertain if biopsies were obtained. Breed and clinical signs including muscle atrophy and dermatologic signs, especially on the tail tip and around the face support a diagnosis of the condition. Angel was started on Vitamin E and fish oil supplements at the shelter and her adoptive family has continued those. Over the years, her skin has been relatively stable with occasional mild scabbing and inflammation, especially with stress such as kenneling and during winter months or summer sun exposure when sunscreen is forgotten. She has had occasional mild episodes of otitis and has developed significant periodontal disease over the past few years. At the time of this examination, her skin condition had significantly worsened following a dental cleaning 6 months prior (3/9/13) in which 2 teeth were extracted. In previous years, dermatological flare-ups associated with stress events resolved within a few weeks at most and topical calendula ointment was a helpful adjunct.

Physical exam:

9/10/13

- Angel was bright and friendly, though a little nervous and high-strung, which is consistent with her personality. Normal activity and appetite were reported with no vomiting or diarrhea. Moderate tartar was present with visible gum inflammation.
- Inflammatory skin lesions with scabbing and raw areas were present especially on nasal planum, back and legs; areas of scarring and alopecia appeared larger than previously noted. Angel was chewing and rubbing at areas she could reach on her feet and legs exacerbating the lesions and causing them to bleed. No change was apparent in the long-term muscle atrophy of temporal and masseter muscles, with no signs of physical impairment to function including ambulation and ingestion.
- Her tongue color was lavender, overall she prefers cool surfaces for lying on and cooler weather and she has a nervous constitution.
- Diet was Science Diet light and T/D recommended by the clinic that performed the dental cleaning.

Current medications:

- Welactin Omega 3 Fatty Acids: 1,450mg / day. The current bottle that she had been taking was expired and potentially rancid.
- Vitamin E: 400mg orally daily
- Calendula ointment – beeswax and olive oil infused with calendula flowers – topically as needed for mild skin eruptions

Recent laboratory testing:

CBC and chemistries were unavailable, but were reported to be normal at the time of dental cleaning 3/9/13, further testing was declined at this time.

Western Diagnosis:

- Dermatomyositis – inherited inflammatory immune-mediated condition affecting microvasculature of skin, connective tissues and muscles
- Flare-up of dermatomyositis condition caused by a combination of factors: stress of recent dental cleaning; dental disease- inflammation and infection; dietary changes/ allergy?; pyoderma- primary or secondary to initial lesions?; expired fish oil supplement
- Chronic dental disease/periodontitis
- History of occasional mild otitis – possible concurrent allergy?

Conventional treatment options:

Conventional treatment of dermatomyositis can vary greatly depending on the severity of disease. Most cases are supplemented with Omega 3 essential fatty acids for their anti-inflammatory properties and vitamin E for its antioxidant effect. Immunosuppressive drugs such as prednisone, azathioprine or cyclosporine are sometimes used, reduced to the lowest dose possible to control relapses. Immunostimulant drugs such as Immunoregulan have also been used to treat dermatomyositis. The current favorite, which seems to be more successful with fewer side effects, is pentoxifylline (Trental), which enhances microcirculation by increasing erythrocyte flexibility and also has some anti-inflammatory action by decreasing tumor necrosis factor alpha (TNF-alpha). Potential side effects of pentoxifylline in dogs and cats include GI signs of vomiting, inappetence, and diarrhea as well as CNS signs of nervousness or excitement. It is contraindicated with severe renal or hepatic impairment and patients at risk for hemorrhage (Plumb, 2015).

Pentoxifylline treatment was considered as an option with fewer side effects than immunosuppressive drugs and positive reports for treatment of dermatomyositis in the literature, but was unfortunately not available from suppliers at the time. With concerns about future drug availability and a desire to find a safe long-term supportive treatment for Angel, a treatment plan using Western herbs was formulated leaving the option open to consider pentoxifylline treatment in the future.

Pruritis is not generally associated with dermatomyositis lesions, though can be caused by a secondary infection. Antibiotics were not given, but kept as an option if needed. In Angel's case, the inflammation and ulceration seemed to be her primary source of discomfort and due to this, her owner elected to try a short-term treatment with steroids in addition to starting the herbal formula. Concerns about side effects and a desire to avoid long-term steroid use were discussed.

Western Herbal Medicine Considerations:

From a Western herbal medicine perspective, Angel has a nervous, warm constitution with a condition that adds heat through its chronic inflammatory nature. Her pale/lavender colored tongue may indicate poor circulation, this fits with what is understood

about dermatomyositis being caused in part by a decrease in blood flow to skin, muscle and connective tissues.

Also, from a holistic perspective, the diet of dry kibble is higher in carbohydrates and less supportive of the digestive system and intake of nutrients than a whole food diet of fresh ingredients with unprocessed, bioavailable nutrients and antioxidants. Poor digestive health can affect other body systems and is often connected with dermatological conditions including inflammation, allergy and susceptibility to infections. This could be a contributing factor for Angel's skin condition and occasional ear infections.

Treatment goals for Angel included providing support for multiple body systems to promote overall healing focusing particularly on her immune, dermatological and gastrointestinal systems. Anti-inflammatory actions were needed as well as support for the microcirculation and connective tissues. Anti-anxiety and nervine action was added to help support her nervous constitution and reduce reactions to stress. With the steroid treatment, liver and general organ system support was desired, as well as the goal to eliminate long-term steroid use.

The following herbs were chosen for Angel's initial oral formula (see material medica for details):

- **Ashwagandha (*Withania somnifera*):** Ashwagandha was chosen particularly for its effects as a calming adaptogen and its use in supporting the body's response to stress and improving adrenal function. The immune modulating, anti-inflammatory, antioxidant and general organ support actions are beneficial in this case. Ashwagandha reduces pro-inflammatory cytokines including TNF-alpha and several interleukins (Dar et al., 2015).
- **Astragalus (*Astragalus membranaceus*):** For a potentially immune-mediated condition, the immune-modulating effects of astragalus may be useful in balancing the immune system. Saponins from astragalus root have been shown to have "powerful immunoregulatory effects without the stimulation of inflammatory cytokines in mice, and have no significant effect on the inflammatory cellular targets in vitro." (Nalbantsoy et al., 2012) The anti-inflammatory properties of astragalus root extract have been demonstrated in its ability to reduce the expression of TNF-alpha as well as inducible nitrite oxide synthase (iNOS), cyclooxygenase-2 (COX-2), interleukin 6 (IL-6) and 1 (IL-1) in mice (Ryu et al., 2008).
- **Gotu Kola (*Centella asiatica*):** Gotu kola is particularly beneficial in this condition that affects the microcirculation and connective tissue. It has been shown to enhance angiogenesis, promote fibroblast proliferation and stimulate collagen synthesis (Shukla et al., 1999; Maquart et. al., 1999) In addition to its benefits in wound healing topically and orally, gotu kola's adaptogenic and nerve tonic effects are supportive in this case.

- **Licorice root (*Glycyrrhiza glabra*):** Licorice root was chosen for its anti-inflammatory and adaptogenic effects, but primarily due to its action as an adrenal tonic that stimulates mineralocorticoid activity (Hosseinzadeh & Nassiri-Asl, 2015). The use of licorice root in combination with corticosteroids may allow for a more safe and effective reduction in steroid dosing.
- **Marshmallow (*Althea officinalis*):** The demulcent and supportive actions on the gastrointestinal system along with the benefits as a flavoring agent made marshmallow root an addition to this formula.

Herbal Formula and dosage:

- 6 ml Ashwagandha (*Withania somnifera*) 1:1
- 12 ml Astragalus (*Astragalus membranaceus*) 1:2
- 3 ml Gotu Kola (*Centella asiatica*) 1:1
- 3 ml Licorice root (*Glycyrrhiza glabra*) 1:2
- 8 ml Marshmallow (*Althea officinalis*) 1:5

2.5 ml orally twice daily.

Calendula (*Calendula officinalis*) ointment topically on lesions as needed.

-Calendula infused olive oil in a beeswax base (anti-inflammatory and tissue healing properties)

Safety and potential herb-drug interactions:

The herbs chosen have a wide range of safe dosage and were used at a relatively low-end dose. Licorice root was used at a low dose to help potentiate the effects of the steroid in order to reduce its need and continue to support the dermatologic inflammation.

Additional therapies:

- Diet change recommended to a more whole-food based diet, commercial or home-made. The owners did not wish to cook for their dog, but would add fresh vegetables and fruit to food and as snacks. An elimination diet for possible food allergy was considered if no improvement occurred.
- Continue Welactin – fresh bottle – at 1,450 mg/day
- Continue Vitamin E supplement – increase to 800mg/day
- Rx: Prednisolone 5mg 1xBID for 5 days, then 1x daily for 5 days, ½ daily for 5 days then ½ EOD

General recommendations and concerns for patients with dermatomyositis:

Protection from sun is recommended by avoiding mid-day exposure using a t-shirt to protect areas on the back and using a pet or baby-safe formula of sunscreen avoiding especially zinc and salicylate ingredients. Sterilization is recommended not only to prevent breeding, but also to reduce hormonal fluctuations of heat cycles, pregnancy and

lactation, which can cause flare-ups. Stressors such as kenneling, surgery, hospitalization/illness, environmental and seasonal changes can induce relapses.

Prognosis is quite variable from no recurrence or mild recurrences of scabbing lesions with or without scarring and alopecia to severe muscle atrophy causing ataxia, “sloppy eating or drinking” and in the worst cases megaesophagus leading to aspiration pneumonia.

Follow-up:

Verbal, e-mail and in-person visits continued regularly over the next few months. Highlights are listed:

10/30/13

Recheck exam – Angel’s skin improved while on the prednisolone, but seemed to be worsening and her activity level was decreasing since off the steroid. The scabbing was improved, but red/inflamed areas persisted. The owner switched the diet to Taste of the Wild lamb and rice, which from a TCM perspective would still be a warming diet, potentially contributing to the inflammation.

Changes in treatment:

Increased gotu kola and licorice portions in oral herbal formula:

- 24 ml Ashwagandha (*W. somnifera*) 1:1
- 48 ml Astragalus (*A. membranaceus*) 1:2
- 18 ml Gotu Kola (*C. asiatica*) 1:1
- 18 ml Licorice root (*G. glabra*) 1:2
- 28 ml Marshmallow (*A. officinalis*) 1:5

2.5 ml orally twice daily.

- Added topical herbal cream:

- 2 oz Vitamin E cream - topical
- 0.5 ml Gotu Kola (*C. asiatica*) 1:1
- 0.5 ml Calendula (*C. Officinalis*) 1:4

Apply small amount to affected areas of skin 2-3 times daily as needed.

Other treatments:

- Owner giving 400mg Vitamin E daily – increase to 800mg daily.
- Continue Welactin – 1,450 mg/day

11/26/13

Angel continued to have pruritic and inflamed, scabbing areas, though somewhat improved from the initial visit. Her owner requested another short-term steroid treatment to help get through the holidays. Topical cream was not used very often.

Rx: Prednisolone 5mg 1xBID for 5 days, then 1x daily for 5 days, ½ daily for 5 days then ½ EOD

Continue herbs and other supplements:

****Change in herbal formula** adding in dandelion and albizia for more GI and skin support and for possible skin allergy (astragalus decreased to compensate):

- 24 ml Ashwagandha (*W. somnifera*) 1:1
- 20 ml Astragalus (*A. membranaceus*) 1:2
- 12 ml Gotu Kola (*C. asiatica*) 1:1
- 18 ml Licorice root (*G. glabra*) 1:2
- 20 ml Dandelion root (*T. officinale*) 1:2
- 20 ml Albizia (*A. lebbbeck*) 1:2
- 24 ml Marshmallow (*A. officinalis*) 1:5

2.5 ml orally twice daily.

1/5/14

Angel was back to her normal self – no more scabbing, pruritis, or inflammation. Prednisolone had been discontinued 3 weeks prior. Herbs, vitamin E and omega-3 supplements continued.

5/28/14

Recheck:

Doing well, mild flare-up in April – possible sun burn, spending more time outside. Recovered and healed quickly. Overall impression from her owner is that she feels better, has good energy and though she is still a high-energy dog, she is perhaps less stressed and anxious through her normal day.

Bloodwork – well-check: Full CBC and Chemistries all within acceptable limits (sl increase in ALP -171 IU/L, normal range 20-150 IU/L and Lymphocytes sl. decreased (0.67 x 10³ /ul, normal 1.0-4.8 x 10³/ul)

Continue Herbs and supplements:

Albizia decreased and astragalus increased to previous level. Gradual decrease in licorice root portion over next 2 months:

6/13/14

Skin stabilized, doing well

- 26 ml Ashwagandha (*W. somnifera*) 1:1
- 32 ml Astragalus (*A. membranaceus*) 1:2
- 20 ml Gotu Kola (*C. asiatica*) 1:1

- 12 ml Licorice root (*G. glabra*) 1:1
 - 18 ml Dandelion root (*T. officinale*) 1:2
 - 12 ml Albizia (*A. lebeck*) 1:2
 - 18 ml Marshmallow (*A. officinalis*) 1:5
- 2.5 ml orally twice daily.

3/23/15

Milk thistle script for pre and post dental cleaning:

- * 28 ml Milk Thistle (*S. marianum*) 1:1
- 0.5ml orally 2-3 times daily.
For liver support pre and post anesthesia use 3 days prior to and 3 days after surgery.

3/27/15

Bloodwork – pre-dental – normal

Dental cleaning with a smooth recovery. 2 more teeth removed.

No skin-flare-ups post hospitalization or when kenneled at times over the past year.

3/2/16

Angel continues to do well with minor flare-ups from sun exposure that resolve quickly.

Current herbal formula:

- 30 ml Ashwagandha (*W. somnifera*) 1:1
- 35 ml Astragalus (*A. membranaceus*) 1:2
- 20 ml Gotu Kola (*C. asiatica*) 1:1
- 20 ml Dandelion root (*T. officinale*) 1:2
- 10 ml Albizia (*A. lebeck*) 1:2
- 15 ml Marshmallow (*A. officinalis*) 1:5

2.5 ml orally twice daily

Additional supplements:

- Welactin Omega 3 Fatty Acids: 1,450 mg/day
- Vitamin E supplement: 800mg/day

Discussion:

Though she did have some initial improvements, it took some time for Angel's condition to stabilize. Increasing the licorice proportions and adding the dandelion and albizia seemed to be helpful, potentially due to increased anti-inflammatory, alterative and anti-histaminic effects. There were many simultaneous treatment changes with Angel, so it is difficult to say which was most beneficial. Simply switching to a fresh fish oil supplement was surely helpful, though it still took a few months for improvement. Further dietary changes may have led to more rapid improvements, but were not an acceptable option for this family. The short-term use of low dose steroids did make her comfortable, but was always seen as a temporary measure and kept at a low dose due to

concerns about side effects. Licorice root was added to the herbal formula to support the steroid effect while allowing us to decrease the prednisolone dose.

Angel has been taking her herbal formula now for over 2.5 years. Her owners have been very consistent with giving her treatments and do feel that they help her feel better overall and are supporting her as she goes into her senior years. Since she has been on the herbal treatment, her annual blood rechecks have remained normal, she has had fewer and more mild skin reactions to stressful situations and managed a dental cleaning with no incident whatsoever, which is a great improvement for her.

Materia Medica:

Ashwaganda (*Withania somnifera*)

Family: Solanaceae

Parts used: Root, leaf and whole plant

Chemical Constituents: Steroidal lactones (withanolides, withaferrins), saponins (sitoindoside) alkaloids, flavonoids, amino acids, iron

Clinical Actions: Immune-modulating (supports the immune system without overstimulating), tonic (used to counteract the effects of aging, increase energy, improve overall health and longevity), adaptogen (increases the body's response to stress acting on the nervous, endocrine & immune systems, allowing it adapt as needed to illness), nervine (tones, nourishes and strengthens the central nervous system.), sedative (calming), anti-inflammatory, anti-oxidant, anti-tumor effects at higher doses, thyroid stimulant, chemoprotective, hematopoetic, anodyne (relieves pain via topical application)

Energetics: Warm, pungent, sweet

Indications: Supportive in immune and inflammatory diseases, particularly arthritis and dermatological conditions; supportive in stressful conditions through calming effects and endocrine support; supportive during chemotherapy and long-term steroid use; adjunctive treatment for hypothyroidism, cognitive dysfunction, anemia and especially useful in aging and convalescing patients.

Contraindications/ Cautions: Do not use with pregnancy - high doses may cause abortion. Very high doses may cause GI distress, diarrhea or vomiting.

Potential Drug/Herb Interactions: Use caution in combination with barbiturates and anxiolytics, can increase the effects of sedatives.

Dose: Tincture (35-45% alcohol) 1:2 or 1:3 1-2.5ml/10kg divided daily.

Astragalus (*Astragalus membranaceus*) -Huang Qi in TCM

Family: Fabaceae

Parts used: Root

Chemical Constituents: Triterpenoid saponins, polysaccharides, flavonoids, isoflavones, sterols, volatile oils, amino acids

Clinical Actions: Immune enhancing / supportive, tonic (used to counteract the effects of aging, increase energy, improve overall health and longevity), anti-viral,

cardiotonic, vasodilator, diuretic, hypotensive, antitumour, adaptogenic, renoprotective.

Energetics: Sweet, slightly warm

Indications: Increase energy and resistance to disease – increases endurance, immune strengthener and stimulator; prevent infection; support impaired immunity due to cancer, autoimmune disease or infectious immunodeficiency (FeLV, FIV); chronic bacterial or viral infections; geriatric support; congestive heart failure and early heart failure; renal disease; cancer support: restores hematopoietic functions of bone marrow – especially during chemotherapy or radiation treatment.

Contraindications: None known.

In Chinese medicine Huang Qi is avoided in acute infections and excess heat due to its warming effects.

Potential Drug/Herb Interactions:

- May be incompatible with immunosuppressive drugs.

Dose: Tincture (25%-35% ethanol) 1:2 or 1:3 1-2ml/10 kg divided daily.

Gotu Kola (*Centella asiatica*)

Family: Apiaceae

Parts used: Aerial (leaves and stems), sometimes whole plant

Chemical Constituents: Triterpenes (Asiatic acid and madecassic acid), and triterpene ester glycosides derived from them (asiaticoside and madecassoside)

- “Studies done in accordance with standardized scientific criteria have shown it to have a positive effect in the treatment of venous insufficiency and striae gravidarum. *Centella asiatica* also appears to be effective in the treatment of wound healing disturbances.” (Brinkhaus et. al., 2000)
- “Asiaticoside exerted a preferential stimulation of collagen synthesis and was active at low doses only.” (Maquart FX et. al., 1999)

Clinical Actions: Adaptogen (increases the body’s response to stress acting on the nervous, endocrine & immune systems, allowing it adapt as needed to illness), connective tissue regenerator, nerve tonic (nourishes and strengthens the central nervous system), mild diuretic, alterative (traditional term - improves overall tissue metabolism)

Energetics: Bitter, cold, slightly astringent

Indications:

Topical: wound healing & scar reduction– lick granulomas, equine granulomatous lesions, delayed healing, degloving injuries, feline leprosy ulcers, anal furunculosis. (humans- keloids, hypertrophic scars, burns, skin ulcers)

Internal: helicobacter pylori infection with ulceration of stomach, aspirin/NSAID induced gastritis; lymphoma and possibly other tumors in mice; improves circulation - cognitive enhancement, edema

Contraindications: None known. Low toxicity even at very high doses. Possible topical sensitization.

Potential Drug/Herb Interactions: May possibly increase sleeping time when given with phenobarbital.

Dose: Tincture (25%-40% ethanol): 1:2-1:3 0.5-1.5ml/ 10kg divided daily.

Licorice (*Glycyrrhiza glabra*)

Family: Fabaceae

Parts used: Roots and stolon, rhizomes

Chemical Constituents: Triterpene saponins, including glycyrrhizin (glycyrrhizinic acid, glycyrrhizic acid) 2-9%. Flavonoids, coumarins, starch, protein. Other minor constituents vary depending on species and geographic location.

Clinical Actions: Anti-inflammatory, adaptogen (increases the body's response to stress acting on the nervous, endocrine & immune systems, allowing it adapt as needed to illness), adrenal tonic, increases mineralocorticoid activity, antiviral (topically), antispasmodic, laxative, mucoprotective, demulcent, anti-ulcer (peptic), expectorant, antitussive, flavor-enhancer

Energetics: Sweet, neutral, moist

Indications: Used to augment or help reduce corticosteroid use in allergic dermatitis, Addison's disease, asthma, and other inflammatory conditions. Also used to treat gastric ulcers, bronchitis & cough.

Contraindications: Cholestasis / biliary obstruction, hypertension,
- Prolonged (>6 wks) use at large doses (>50g/day for humans) may cause water accumulation, sodium accumulation, potassium loss, and increased blood pressure.

- Avoid use with pregnancy or lactation

- Avoid use with hypertension, cardiovascular disease, renal disease, diabetes or liver disease

Potential Drug/Herb Interactions: May increase potassium loss, so prolonged use should be avoided with chronic renal failure, thiazide and loop diuretics or cardiac glycosides. May increase the effects of corticosteroids.

Dose: Tincture (usually 30-35% ethanol) 1:2-1:3 0.5-1 ml/10kg divided daily.

Marshmallow (*Althaea officinalis*)

Family: Malvaceae

Parts used: Root, leaf

Chemical Constituents: *Root:* 5%-35% mucilage, asparagines, tannins

Leaf: mucilage, flavonoids, phenolic acids

Clinical Actions: Nutritive, demulcent (soothes, protects and restores mucous membranes), antitussive, vulnerary (aids in wound and skin healing, usually refers to external application or direct GI contact in this case), diuretic

Energetics: Sweet, bitter, cold

Indications: Gastroenteritis, gastric ulcer, stomatitis, diarrhea, urinary tract inflammation (cystitis, nephritis, urethritis), respiratory tract inflammation (laryngitis, bronchitis, cough)

Topically for open wounds, ruptured abscesses, ulcers

Contraindications: None known, except known allergy

Potential Drug/Herb Interactions:

- May interfere with the absorption of other medications given at the same time due to mucilage content.

- May lower blood glucose (anecdotal), use with caution in patients at risk for hypoglycemia

Dose: Tincture (usually 25-35% ethanol or glycerol) 1:2 – 1:3, 0.5-1.5ml per 10kg divided daily.

Dandelion (*Taraxacum officinale*)

Family: Asteraceae

Parts used: Roots, leaves, flowers

Chemical Constituents: Sesquiterpene lactones (such as: taraxinic acids, triterpenes: beta-amyrin, taraxol and taraxerol); carotenoids, including lutein; inulin; saponins; fatty acids such as myristic acid; flavonoids, including apigenin, luteolins and chrysoeriol; minerals (up to 4.5% potassium); phenolic acids (chicoric and monocaffeoyltartaric acids); coumarins (cichoriin and aesculin); sitosterol, stigmasterol and taraxasterol; sugars; vitamin A; quercetin glycosides

Clinical Actions: Digestive/bitter tonic, liver tonic, alterative (improves overall tissue metabolism), choleric (stimulates bile production by hepatocytes), cholagogue (stimulates release & flow of bile), hepatorestorative, hepatoprotectant, diuretic, pancreatic stimulant, mild laxative, antihypertensive, anti-inflammatory

Energetics: Bitter, cold, dry

Indications: Liver disease; gallstones; pancreatitis; diabetes; GI disease including signs of dyspepsia, loss of appetite, flatulence, intestinal bloating and constipation; oliguria; cystitis; edema; muscular rheumatism; chronic skin diseases

Contraindications: Bile duct obstruction and acute bile duct inflammation, intestinal obstruction.

Potential Drug/Herb Interactions:

- High mineral content may interfere with the absorption of quinolone antibiotics.

- Increase in potassium, diuresis and mild BP lowering effects should be taken into account with other medication use. (though potassium in dandelion leaves could also serve to replace potassium lost through diuresis)

Dose:

Root or whole plant: Tincture (25-70% ethanol): 1:2 – 1:3: 0.5-1.5 ml per 10kg divided daily.

Leaf: Tincture (25-70% ethanol): 1:2-1:3: 1.0-2.5ml per 10kg divided daily.

Albizia (*Albizia lebbek*)

Family: Fabaceae

Parts used: Bark, leaves, seeds, and sometimes flowers

Chemical Constituents: Saponins, cardiac glycosides, tannins and flavonoids

Clinical Actions: Anti-allergic, anti-inflammatory, anti-diarrheal, anti-microbial, anti-cholesterolemic, antioxidant, antifungal, spasmolytic (smooth muscle), positive inotrope, immune stimulant

-Anti allergic activity was studied with Albizia having a significant action on mast cells and inhibition of the early sensitization and synthesis of reagenic-type antibodies.

-Albizia has an influence on GABA, serotonin and dopamine in vivo, leaves raise levels of GABA, anticonvulsant activity has been demonstrated in vivo.

Energetics: Cooling, dry

Indications: Asthma, bronchitis, allergic rhinitis, allergic skin disease, mast cell tumors and high cholesterol.

Contraindications:

May depress T and B lymphocyte activity. Some data suggest an anti-fertility effect in animals.

Potential Drug/Herb Interactions: Cautions with inotropic heart medications – may be synergistic.

Dose: Tincture 1:2-1:3 0.5-1 ml/10kg divided daily.

Milk Thistle (*Silybum marianum*)

Family: Asteraceae

Parts used: Primarily fruit (often referred to as seeds), flower heads, leaves

Chemical Constituents: Silymarin -a flavonoid complex w/ 3 parts: silibinin, silidianin, and silichristine. Silibinin is thought to be the most active.

Also contains: sterols, fixed oil, flavonoids (apegenin, quercitin, kaempferol), lignans, biogenic amines (tyramine, betaine), and mucilage.

Clinical Actions: Hepatoprotective, protects cell membranes generally (protective for kidney and pancreas in addition to liver), hepatic trophorestorative, demulcent (soothes, protects and restores mucous membranes), cholagogue (stimulates release & flow of bile), galactagogue (promotes lactation), antioxidant, anti-inflammatory

Energetics: Bitter, warm

Indications: Hepatitis, cholangiohepatitis, liver damage or disease, abnormal liver function, hepatic lipidosis, exposure to chemical pollutants, anesthetics or liver damaging drugs, toxic injury to liver (esp. aflatoxin), skin diseases involving liver dysfunction, dyspepsia, preventing gallstone formation, gallbladder problems, protection of pancreas during pancreatitis or drug damage, hyperlipidemia, adjunct to metronidazole tx for giardiasis – decrease adverse effects, increase lactation and protect dairy cows from ketonemia.

Contraindications: Relatively non-toxic, used as food. May decrease insulin requirements in diabetics. Side effects rare – mild GI signs, mild laxative, 2 cases of anaphylactic shock reported, rare increase in ALT. Allergy to Aster family.

Potential Drug/Herb Interactions: May reduce insulin requirements in some diabetic patients; Silymarin shown to protect against organ toxicity induced by cisplatin, acetaminophen, butyrophenones, halothane, phenothiazines, tacrine, and vincristine.

Dose:

Fluid extract (1:1)(60-80% ethanol): 1.0-2.0ml per 10 kg divided daily.

Glycetract (1:1): 1.0-2.0ml per 10kg divided daily.

Calendula (*Calendula officinalis*)

Family: Asteraceae

Parts used: Flowers

Chemical Constituents: Triterpene saponins (2-10%), oleanolic acid (calendulosides) and flavonoids (3-O-glycosides of isorhamnetinand quercetin), including astragalins, hyperoside, isoquercitrin and rutin. Also essential oil, sesquiterpenes (eg: caryophyllene), triterpenes (eg: a- and b-amyrins, lupeol, and lupenone), immunostimulant polysaccharides.

- Specific triterpenoid: faradiol monoester – shown to have anti-inflammatory effects.

Clinical Actions: Antiseptic, lymphatic, hypolipidemic, anti-inflammatory, astringent, spasmolytic, vulnerary, cholagogue, emmenagogue

Energetics: Neutral, slightly cooling, dry

Indications: Mastitis salve, gingivitis, ulcers, erosions, eyewash, dermatitis, wound cleansing (tea)

Contraindications: Do not use with pregnancy - may cause abortion due to emmenagogue effect. Avoid with allergy to Asteraceae family.

Potential Drug/Herb Interactions: None known

Dose: Tincture (80-90% ethanol): 1:2-1:3 0.5-2ml per 10kg divided daily

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