Research Article

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Nettle & Sarsaparilla Combination (Allergy Guard)

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ABSTRACT

The article will present the indications, analyze of the component actions, cautions, and contraindications of the herbal formula Nettle & Sarsaparilla Combination (Allergy Guard). The indications and analysis of the component's mechanisms of actions will be done from point of view of the Western and Traditional Chinese Medicine. The medical statistics evaluating the efficacy of the Nettle & Sarsaparilla Combination was based on the author's 35 years of outpatient clinical practice.

Keywords

Nettle, Sarsaparilla, Herbal, Anti-inflammatory, Antiallergy.

Introduction

Nettle & Sarsaparilla Combination (Allergy Guard) is an herbal formula based on Traditional Bulgarian Medicine. The country of Bulgaria has a thousand-years old history of selection, cultivation, and exportation of medicinal herbs, a tradition that is like that of China.

Indications and Analysis of the Component Actions in Nettle & Sarsaparilla Combination

Indications of the Components

Western Medicine - Allergic reactions on the skin and mucosal surfaces of the body, urticaria, poison ivy, allergic rhino sinusitis, mosquito/ insect bites, hyperkeratosis - psoriasis

Traditional Chinese Medicine - Bi Yuan – Wind Heat invaded Lung and Skin, Spleen leaking syndrome, Liver and Gall Bladder Heat; Heat Toxin invaded Skin

Effect: Anti-allergic, anti-inflammatory, antibacterial, anti-ulcer, analgetic, antiedema, astringent, diuretic, spasmolytic, antidiabetic, antipyretic

Analysis of the components' actions

In Nettle & Sarsaparilla Combination (Allergy Guard) are included next herbs (the Latin and American names):

Radix Smilax regelii / Sarsaparilla (root) /
Folium Urtica dioica / Nettle (leaves) /
Herba Equisetum arvense / Horsetail (stalks) /
Herba Teucrium polium / Felty Germander (stalks) /
Herba Hypericum perforatum / St John`s wort (stalks) /
Folium Basilici / Ocimum Basilicum (leaves) /
Folia Viola tricolor / Heartsease (leaves) /
Radix Inula helenium / Horse-heel (root) /_
Herba Fumaria officinalis / Fumitory (stalks) /

Radix Smilax regelii / Sarsaparilla (root) / [1,2]

Compounds: Steroid saponins and etheric oil.

Effects: anti-allergic, anti-inflammation, antibacterial, diuretic, and diaphoretic effects.

Indications: Urticaria, acne, eczemas, psoriasis, infections of the urinary system, rheumatism, gout, and liver diseases.

Cautions and adverse effects: Not recorded in the proper administration.

Daily dosage: 0.3 to 1.5 g

Folium Urtica dioica / Nettle (leaves) / [1,2]

Compounds: Histamine, serotonin, acetylcholine, formic acid, leukotrienes, flavonoids, silicic acid, volatile oil, and potassium-ions

Effects: Hemostatic, hemopoietic, anti-inflammatory, analgetic,

and anti-arthritic effects
Indications: Urticaria, acne, skin and membranes itching, alopecia, metrorrhagia, infections of the urinary tract, kidney, and bladder stones, pulmonal and gastric hemorrhages, hemorrhoid, decreased lactation, and rheumatism.
Cautions and adverse effects: No adverse effects with the administration of therapeutic doses. Not to be used during pregnancy. Gastric irritation. Must be separated 1-2 hours from the iron medications.
Daily dosage: 8 to 12 g

Herba Equisetum arvense / Horsetail (stalks) / [1,2]
Compounds: Flavonoids, caffeic acid ester, salic acid, pyridine alkaloids, Vit A, and Vit C.
Effects: Astringent, diuretic, spasmolytic, and reduce uric acid effects.
Indications: Infections of the skin and urinary tract, nephrolithiasis, wounds, burns, skin ulcers, loss of hair, post-traumatic and static edema, fractures, frostbite, metrorrhagia, pulmonary and gastrointestinal hemorrhages, gout, rheumatic diseases, atherosclerosis, hypertonia, and tuberculosis.
Cautions and adverse effects: No adverse effects with the administration of therapeutic doses.
Daily dosage: to 6 g daily

Herba Teucrium polium / Felty Germander (stalks) / [1,2]
Compounds: Diterpenes, volatile oil, iridoids, and flavonoids.
Effects: Anti-ulcer, antidiabetic, antibacterial, antipyretic, analgetic, antiedema, and exudative effects.
Indications: Urticaria, skin infections, boils, suppurative wounds, skin tuberculosis, gastrointestinal pain, parasites, and diarrhea.
Cautions and adverse effects: No adverse effects with the administration of therapeutic doses.
Daily dosage: 1.5 g per cup

Herba Hypericum perforatum / St John`s wort (stalks) / [1,2]
Compounds: Anthracene derivatives: naphthodianthrones, hypericin, pseudo hypericin; flavonoids: hyperoxide, quercitrin, rutin, isoquercitrin, amentoflavone; xanthones; acylphloroglucinols; volatile oil; oligomers; procyanidines and other catechin tannins; imanin; carotin, choline, caffeic acid derivatives, and Vit C.
Effects: Anti-anxiety, antidepressant, alleviating premenstrual and menopausal symptoms, hemostatic, anti-inflammatory, antibacterial, antifungal, antineoplastic, antioxidant, neuroendocrine, weight loss, and wound-healing effects
Indications: Anxiety, depression, white vaginal discharge, wounds and burns, bronchitis, asthma, enuresis, gout, rheumatism, and dermatosis
Cautions and adverse effects: Contraindicated in the pregnancy as well as in a history of the photosensitivity or hypersensitivity to Hypericum perforatum. Decreasing activity of the irinotecan, protease inhibitors, amiodarone, anticoagulants, cyclophosphamide, cyclosporine, darunavir, etoposide, phenytoin, tamoxifen, benzodiazepines, beta-adrenergic blockers, calcium channel blockers, digoxin, statin medications, estrogen medications, methadone, nortriptyline, omeprazole, theophylline, tramadol, verapamil, and iron. Increasing activity of the rasagiline, selegiline, anesthetics, erlotinib, imatinib, monoamine oxidase inhibitors, SSRI, antidiabetic agents, buspirone, nefazodone, opioid analgesics, and venlafaxine.
Daily dosage: 2 to 4 g taken 3 times daily for the dried herb

Folium Basilici / Ocimum Basilicum (leaves) / [1,2]
Compounds: Volatile oil (estragole, linalool, eugenol), caffeic acid derivatives, flavonoids
Effects: Antimicrobial, antiallergic, spasmolytic, improve the appetite and digestion, anorexia, diuretic
Indications: Itching, skin diseases, febrile diseases, stomach crumps, infections in the gums, ears and urinary system, rheumatoid arthritis, malaria, dysmenorrhea
Cautions and adverse effects: Not recorded in the proper administration.
Daily dosage: 3 g

Folia Viola tricolor / Heartsease (leaves) / [1,2]
Compounds: Flavonoids (viola-quercitrin, luteolin-7-O-glucosides, scoparin, saponarine, violanthin, vicinein-2, vitexin), phenol carboxylic acid (salicylic acid, violutoside), mucilage, tannins, hydroxycoumarins (umbelliferon)
Effects: Antiallergic, anti-inflammatory, hemolytic, laxative, increases chloride elimination in the urine
Indications: Skin diseases – seborrhea, wet and dry exanthema, eczema, crusta lactea, acne, impetigo, pruritus vulvae, constipation, inflammation of the urinary tract
Cautions and adverse effects: Not recorded in the proper administration.
Daily dosage: 9 g

Radix Inula helenium / Horse-heel (root) / [1,2]
Compounds: Volatile oil, polyenes, polysaccharides
Effects: Antimicrobial, antifungal, anthelmintic, antitumoral, mild antiseptic and expectorant effects
Indications: Pulmonary and urinary tract infections, worm infection
Cautions and adverse effects: Not recorded in the proper administration. Not to be used during pregnancy. Overdosage – vomiting, diarrhea, spasms
Daily dosage: 1 g

Herba Fumaria officinalis / Fumitory (stalks) / [1,2]
Compounds: Flavonoids, hydroxycinnamic acid derivatives, isoquinoline alkaloids – protoberberine type, protopine type, spirobenzylisoquinoline type, indenobenzazepine type, organic acids (fumaric acid)
Effects: Antiallergic, anti-inflammatory, spasmolytic
Indications: Skin diseases – itching eczema, cystitis, arthritis, gastrointestinal spasms, constipation, hypoglycemia
Cautions and adverse effects: Not recorded in the proper administration.
Daily dosage: 9 g

Cautions and Contraindications

No significant adverse effects with the administration of therapeutic doses noted above. Not to be used during pregnancy. Mild Gastric irritation can occur (see Nettle (leaves), if overdosed). Must be separated 1-2 hours from the iron medications (see Nettle (leaves), if overdosed).

Daily dosage: 1 to 2 capsules

Chemical Analysis

The Nettle & Sarsaparilla Combination (Allergy Guard) had a chemical and antibacterial analysis at the Technology Center of the Plovdiv University "Paisii Hilendarski" EOOD, Bulgaria, by prof. Ilia Iliev.

Methods of analysis performed:

- Determination of the total polyphenolic content by the method of Singleton and Rossi
- Determination of the total flavonoid content by spectrophotometric method with AlCl3 (Aluminum chloride)
- Quantification of condensed tannins using the methyl cellulose precipitation method
- Quantification of polyphenolic substances, representatives of the group of phenolic acids, flavonoids and tannins using the HPLC method (High-performance liquid chromatography)
- Quantification of arbutin according to the European Pharmacopeia 10.0
- Determination of antioxidant activity using the DPPH method
- LC-Mass Spectrometry analysis

The chemical analysis of the Nettle & Sarsaparilla Combination (Allergy Guard) revealed the presence of multiple beneficial chemical substances. The chemical substances with the highest concentration are grouped according to their physiological effects bellow:

Effects of the Isolated Chemical Substances

Anti-allergic - Quercetin-3-7-D-GI [3-5]; Raffinose [6-8]; Procyanidin B1 [9-11]; Dihydrophaseic acid [8,12,13]; 1-O-Feruloil-gluco [14-16]

Anti-inflammatory – Arbutin [17-19]; Tartaric acid [20-22]; Quinci acid [23-25]; Tropic acid [26-28]; Naringin 1[29-31]; Histidine [32-34]; Quercetin-3-7-D-GI [35-37]; SinGlciso2 1 [38-40]; Cyanidin 3-sophoroside [41-44]; Kaempferol-3-O-r [45-47]; Procyanidin B1 [9-11]; Isorhamnetin-3-O-g [48-50]; Gallic acid [51-53]; Salicylic acid [54-57]; Rutin [58-61]; Aucubin [62-65]; Catalpol [66-69]; d-Pinoresinol-4-O- [70-72]; 1-O-Feruloil-gluco [15,16]; Feruloylgalactarat [73-75].

Antibacterial – Naringin 1 [76,77] (Hepatitis C Chikungunya infection, Dengue, antibacterial Escherichia coli, Staphylococcus aureus, Candida albicans, Alternaria alternate, Fusarium Lini, Aspergillus Niger); Glucuronic acid [78-81]; Tropic acid [26-28]; Methyl-beta-D-galactosidase [82-84]; Quercetin-3-7-D-GI [35-37] (Pseudomonas aeruginosa, Salmonella enteritidis, Staphylococcus aureus, Escherichia coli, Proteus, and Aspergillus flavus, Candida albicans; Leishmania, Trypanosoma, and Plasmodium); Quinic acid [23-25]; Kaempferol-3-O-r [45-47]; 1-O-Caffeoylglicos [85-88] (Staphylococcus aureus, Botryosphaeria, Monilia *fructi Gena*, Phytophthora *capsicum*); Caffeoylquinic acid [89-92]; Isorhamnetin-3-O-g [48-50]; Gallic acid [51-53]; Arbutin [17,93-95] (Staphylococcus epidermidis, S. aureus, Enterococcus faecalis, and Bacillus subtilis, Proteus vulgaris, Enterobacter aerogenes, Klebsiella pneumoniae, Proteus mirabilis, and Citrobacter diverse; Candida albicans); Rutin (Escherichia coli, Proteus vulgaris, Shigella sonnei and Klebsiella sp, Pseudomonas aeruginosa and Bacillus subtilis; Mycobacterium smegmatis; Antifungal activities - Candida gattii; Antimalarial activity - Plasmodium (Bennettinia) juxtanucleare, Plasmodium falciparum) [58-61]; Aucubin [62,65,96] (Staphylococcus epidermidis, S. aureus, Enterococcus faecalis, and Bacillus subtilis, Proteus vulgaris, Enterobacter aerogenes, Klebsiella pneumoniae, Proteus mirabilis, and Citrobacter diverse, Candida albicans); d-Pinoresinol-4-O- [71,97,98] (Escherichia coli, Pseudomonas aeruginosa, Staphylococcus aureus, Bacillus subtilis, Salmonella enterica); 1-O-Feruloil-gluco [15,16]; Feruloylgalactarat [73,99,100].

Antioxidant - verified with antioxidant analyze (TPC –total polyphenol content, mg GAE/g – equivalent of gallic acid: 231.6; IC50 DPPH mg GAE/g 15 min: 15.9: EC50 CUPAC mg GAC/g: 21.0; EC50 FRAP mg GAC/g: 5.6) – Glucuronic acid [78,80,81]; Tartaric acid [20-22]; Quinci acid [23,24]; Quinci acid [23-25]; Tropic acid [26-28]; Naringin 1 [76,101,102]; Histidine [32,103,104]; Cysteinyl glycine [105-107]; Methyl-beta-D-galactosidase [82-84]; Dehydroascorbic acid [108-110]; Quercetin-3-7-D-GI [35,36]; SinGlciso2 1[38-40]; Cyanidin 3-sophoroside [41-44]; Kaempferol-3-O-r [45-47]; Salicylic acid [54,55,57,111]; Fisetin [112-114]; Procyanidin B1 [9-11]; Isorhamnetin-3-O-g [48-50]; Caffeoylquinic acid [89-92]; Gallic acid [51-53]; Rutin [58-61]; Arbutin [17-19]; Aucubin [62,63]; Catalpol [66-69]; d-Pinoresinol-4-O- [70,71,115]; 1-O-Feruloil-gluco [15,16,116]; Feruloylgalactarat [73-75].

Anti-ulcer - Quercetin-3-7-D-GI [35,117,118]; Cyanidin 3-sophoroside [41-44]; Kaempferol-3-O-r [45-47]; Rutin [58,119,120].

Analgetic - Naringin 1[29-31]; Salicylic acid [55-57]; Rutin [58,119,121]; Catalpol [67-69]; 1-O-Feruloil-gluco [15,16]; Quinci acid [23,24].

Antiedema - Dehydroascorbic acid [108-110]; Quercetin-3-7-D-GI [35,122]; Arbutin [17,94,95]; 1-O-Feruloil-gluco [15,16].

Astringent - Quercetin-3-7-D-GI [35,36,122]; Arbutin [17]; 1-O-Feruloil-gluco [15,16];

Diuretic - Quercetin-3-7-D-GI [35,123]; Rutin [58,124,125]

pasmolytic - Quercetin-3-7-D-GI [35,126,127]; Rutin [58,119,124]; Catalpol [66-69]; d-Pinoresinol-4-O- [70-73].

Antidiabetic - Quercetin-3-7-D-GI [35,128,129]; Arbutin [17]; SinGlciso2 1 [38-40]; Cyanidin 3-sophoroside [42-44]; Kaempferol-3-O-r [130-132]; Thiamine hydrochloric; 1-O-Caffeoylglicos [133-135]; Procyanidin B1[10,11]; Caffeoylquinic acid [90-92]; Gallic acid [136-138]; Rutin [58,119,125]; Aucubin [139,140]; Catalpol [66,67]; d-Pinoresinol-4-O- [70,141,142]; 1-O-Feruloil-gluco [15,16,143]**;** Feruloylgalactarat [144,145]

Antipyretic - Kaempferol-3-O-r [45,46,146]; Quercetin-3-7-D-GI [35,36,147]

Antianxiety – Guanosine 3`,5`-cy [148,149]; N-Acetyl-L-Tyrosine [150-152]; Uridine 5`-monopho [153-155]; Quercetin-3-7-D-GI [35,156,157]; Cyanidin 3-sophoroside [42-44]; Kaempferol-3-O-r [158-160]; Thiamine hydrochloric [161-163]; Rutin [58,60,164]; Aucubin [62,139,165,166]; Catalpol [66,67,69]; d-Pinoresinol-4-O- [71-73]

Clinical Outcomes and Statistical Analysis

*Urticaria

Fifty-seven (57) patients - 26 male, 31 females, ages ranging from 23- 84 yrs. of age - with the urticarial reactions to the different etiology factors – contact allergens, food, and cold sensitivity were reviewed. The therapy intake duration of Nettle & Sarsaparilla Combination (Allergy Guard) ranged from 1 to 4 months. Forty-three (43) patients had complete resolution of their allergic rashes and symptoms (no red plaques, no itching, no pain, or sleep disturbance), 14 patients had partially decreased size of rashes and itching, and 0 patients had no response to the therapy ($p< 0.3$).

*Psoriasis

Fifty-five patients (55) - 28 male, 27 females, ages ranging from 28 to 66 years old - with Psoriasis were reviewed. The period of the taking Nettle & Sarsaparilla Combination (Allergy Guard) was from 2 to 6 months. Eighteen (18) patients had complete resolution of their psoriatic plaques, 34 patients had decreased size, less redness, itching, and hyperkeratosis and 3 patients had no response to therapy ($p<0.3$).

Conclusion

The Nettle & Sarsaparilla Combination (Allergy Guard) has 75.4% effectiveness in neutralizing the allergic reaction and inflammation of the skin (redness, swelling, itching, and pain) and 94.5% ability to decrease the activity of a psoriatic process.

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