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Journey into the Ocean of Molecular Pathogenesis of Urtica Urens - A Short Review

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ABSTRACT

Urtica Urens commonly known as stinging nettle has been traditionally in use since long due to its astringent, anti-inflammatory, antioxidative, hypoglycemic, anti-coagulant and anti-aging properties and has vital role in lactation and female reproductive health as well as skin diseases. In homoeopathy whole plant is used in preparation of the medicine thus making use of all its medicinal properties. Though it covers disease conditions related with most of the vital organs of body, yet it is mentioned in very few materia medica with only few symptoms limited to certain specific disease condition which does not do justice with its enormous healing properties as concluded from its botanical properties and traditional use. Thus, this article discusses the doctrine of signature, physiological action, and rubrics covered by Urtica Urens to highlight its vast applicability in variety of clinical conditions.

KEYWORDS: Urtica Urens, Stinging Nettle, Lactation, Urticaria, Homoeopathy, Histamine, Acetylcholine, Astringent property, Diuretic, Rubrics

INTRODUCTION

Urtica Urens, commonly known as annual nettle, dwarf nettle, dog nettle, burning or stinging nettle, is a herbaceous annual [flowering plant](#) species in family [Urticaceae](#). Its name comes from Latin word uro, which means "I sting". The generic name Urtica comes from Latin word for "sting".^[4] It is a annual plant, monoecious and generally much shorter. It is so named because contact with fresh leaves can cause a transient stinging skin rash which is the result Of histamine, acetylcholine and other irritants that are injected into skin by minute sharp pointed hairs on surface of the leaves. Hairs and spines can reduce pain on coming into contact with a painful area of body due to its ability to reduce inflammatory chemicals and interfere with pain signals. Its extracts can reduce allergic reactions by blocking histamine H1 receptors and inhibiting tryptase. It can also decrease blood sugar level and has a diuretic effect.^[1] Its roots contain a compound known as 3,4-divanillyltetrahydrofuran which has maximum affinity for sex hormone binding globulin which indirectly helps it to control oestrogen/androgen balance. Has astringent property which helps reducing inflammation of skin, gut and joints and relieves urinary incontinence. Phenolic acid & Polyphenolic compounds are present in root, stalk and leaves of stinging nettle due to which it possess wide range of therapeutic properties. [Refer Figure 1]

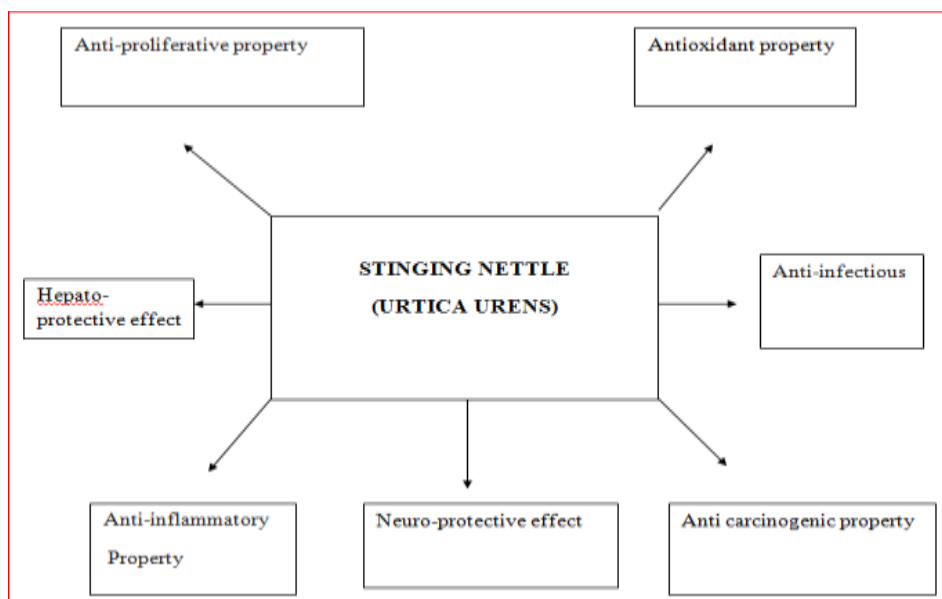


Figure 1- Therapeutic Properties of Stinging Nettle

ROLE OF URTICA URENS IN SKIN DISEASES

Clinical Conditions: - Erysipelas, Eczema, Erythema nodosum, Erythema Simplex, Urticaria nodosa, Angioneurotic edema.

Doctrine of Signature - Stinging nettle plant contains fine hairs and chemicals like formic acid which causes painful rashes on skin. The leaves and stems contains few chemicals like acetylcholine, histamine and serotonin which causes itchy, painful rash with burning. On release of histamine by mast cells characteristic symptoms like itching, redness, swelling appears due to vasodilation and increase vascular permeability in skin mainly by binding of histamine to H1 receptors which leads to development of typical symptoms of urticaria. Serotonin further contributes in aggravating the symptoms of urticaria as it binds to certain receptors on nerve cells transmitting signal of itching to brain which leads to vicious cycle of itching followed by scratching which again leads to intensification of itching and more release of histamine as a response to itching. Acetylcholine is released from nerve endings when the body gets heated up after sweating and exercise and is responsible for urticaria combined with swelling around the rash, referred to as cholinergic urticaria.^[1,2]

Rubrics from multiple repertories:

Skin - PRICKLING, sensation

Skin - ITCHING - warm, on becoming agg.

Skin - ITCHING - stinging

Skin - ITCHING - night

Skin - ITCHING - lying, amel.

Skin - ITCHING - burning - as from nettles

Skin - ITCHING - biting

Skin - FORMICATION, sensation

Skin - ERYTHEMA, nodosum - erythema, simplex

Skin - ERYSIPELAS - vesicular

Skin - ERUPTIONS - washing, agg.

Skin - ERUPTIONS - miliary

Skin - ERUPTIONS - desquamating

Skin - ERUPTIONS - blotches - red

Skin - ERUPTIONS - allergic, eruptions

Skin - BURNING, sensation - sleep, after

Skin - URTICARIA, hives - sequelae, from suppressed hives, with

Skin - URTICARIA, hives - rheumatism, during

Skin - URTICARIA, hives - pinworm, with

Skin - URTICARIA, hives - periodical, every year

Skin - URTICARIA, hives - oxyures, with

Skin - URTICARIA, hives - nodular

Skin - URTICARIA, hives - exercise, exertion, from

Skin - URTICARIA, hives - edema, with

Skin - URTICARIA, hives - chronic

Skin - URTICARIA, hives - bathing, after

Skin - URTICARIA, hives - ascarides, with

Skin - URTICARIA, hives - alternating with - rheumatism, with

Skin - WRINKLED, shrivelled

Skin - VESICLES, eruptions - sudamina

Skin - URTICARIA, hives - vegetables, from

Skin - URTICARIA, hives - suppression of, agg.

Skin - URTICARIA, hives - strawberries, from

Skin - URTICARIA, hives - shuddering, with

Skin - URTICARIA, hives - shellfish, after

SKIN - ERUPTIONS - chickenpox

SKIN - ERUPTIONS - blisters - burn; as from a

SKIN - BURNING - sleep; after

SKIN - ERUPTIONS - urticaria - nodular

SKIN - ERUPTIONS - sun; from

SKIN - ERUPTIONS - sensitive

SKIN - ERUPTIONS - eczema

SKIN - STINGS of insects

SKIN - SENSITIVENESS

SKIN - INDURATIONS, nodules, etc.

SKIN - ERYSIPELAS – vesicular⁽⁸⁾

ROLE OF URTICA URENS IN MALE & FEMALE REPRODUCTIVE HEALTH

Clinical Conditions: Amenorrhea, Menorrhagia, Metrorrhagia, Leucorrhoea, Pruritis vulvae, Genital Herpes, Dysmenorrhea, Hydrocele, Benign prostatic hypertrophy

Doctrine of Signature - Sex hormone binding globulin (SHBG) is a glycoprotein which possesses high affinity binding for 17 beta-hydroxysteroid hormones such as testosterone and oestradiol. It regulates the amount of testosterone body tissues can use thereby regulating androgen/oestrogen balance, thyroid hormone and insulin levels. High testosterone level causes menstrual irregularity, genital itching and symptoms of polycystic ovarian disease in females and benign prostatic hypertrophy and genital itching in males. It restricts the dispersion of malignant cells in surrounding tissues thus inhibits growth of prostate cell. Compound 3,4-divanillyltetrahydrofuran present in its root extract binds to sites on sex hormone binding globulin and so reduces the impact of high testosterone levels and low oestrogen levels on both male and female genitalia.^[4] Due to its astringent characteristics it helps in relieving

unpleasant premenstrual symptoms, cramping pains and bloating during menses and also reduces blood flow during menstruation as it has anti coagulant properties.^[1] Acts as a restorative for hormonal shifts during menopause and reduces vaginal atrophy, including vaginal burning & dryness, vaginal itching, and dyspareunia in postmenopausal women.

Rubrics from multiple repertories:

Female - AMENORRHEA, menses absent
 Female - BLEEDING, uterus, metrorrhagia
 Female - CRACKS, genitalia
 Female - DISCHARGE, vagina - acrid, excoriating
 Female - ERUPTIONS, genitalia - itching
 Female - HERPES, genitalia
 Female - ITCHING, genitalia - burning
 Female - ITCHING, genitalia - scratching, agg. - strong desire for
 Female - ITCHING, genitalia - stinging
 Female - ITCHING, genitalia - urine, contact of, agg.
 Female - ITCHING, genitalia - itching, vagina, labia, between
 Female - ITCHING, genitalia - itching, vagina, vulva - burning
 Female - MENSES, general - profuse
 Female - PAIN, genitalia
 Female - PAIN, ovaries
 Female - SORE, pain, genitalia - sore, vagina - labia, vulva
 Female - STINGING, pain, genitalia
 Female - SWELLING, genitalia - edematous
 Female - MENSES, general - profuse
 FEMALE GENITALIA/SEX - LEUKORRHEA - burning
 FEMALE GENITALIA/SEX - LEUKORRHEA - acrid, excoriating
 FEMALE GENITALIA/SEX - ITCHING - pregnancy, during
 MALE GENITALIA/SEX – SWELLING
 MALE GENITALIA/SEX - ITCHING
 MALE GENITALIA/SEX - ITCHING - Scrotum
 Male - SWELLING, genitalia - swelling, scrotum
 Male - ITCHING, genitalia - burning, and
 MALE GENITALIA/SEX - ERUPTIONS - itching
 Male - HYDROCELE, scrotum - itching, with⁽⁸⁾

ROLE OF URTICA URENS IN ARTHRITIS

Clinical Conditions: Gout, Rheumatoid Arthritis, Phlegmasia dolens, Rheumatism

Doctrine of Signature - Stinging nettle is rich in proteins, minerals like iron, calcium, potassium, zinc. It also contains large amount of Vitamin K which helps in bone production and bone strengthening. Histamine makes blood vessels around joints more prone to leakage and is a mediator of joint inflammation and disturbance in level of acetylcholine leads to insufficient activation of alpha 7 nicotinic acetylcholine receptor and both have important role in development of rheumatoid arthritis. It promotes vascular permeability. More severe expression can result in central depression with slurred speech

and coma. Serotonin maintains balance of T helper (Th17) cells as they play major role in development of rheumatoid arthritis by producing cytokines and chemokines which lead to joint inflammation and destruction.^[1,3]

Rubrics from multiple repertories:

Arms - SHARP, pain - motion, on

Hands - ARTHRITIC, nosodities - arthritic, nosodities, finger joints

EXTREMITIES - SWELLING - Foot – red ^(SE)

EXTREMITIES - STIFFNESS

EXTREMITIES - PAIN - stitching - Upper limbs - motion - on

EXTREMITIES - PAIN - sore - Knee

EXTREMITIES - PAIN - Foot - gouty

EXTREMITIES - PAIN - Ankle - rheumatic

EXTREMITIES - PAIN - Fingers

EXTREMITIES - PAIN - Wrist - rheumatic

EXTREMITIES - PAIN - Upper arm - Deltoid region - right - rheumatic

EXTREMITIES - PAIN - Upper arm - rheumatic

EXTREMITIES - PAIN - Shoulder – right

EXTREMITIES - PAIN - Upper limbs - lying - on them

EXTREMITIES - PAIN - Joints - gouty

EXTREMITIES - PAIN - rheumatic - alternating with - urticaria

EXTREMITIES - NUMBNESS - Upper limbs

EXTREMITIES - MILK LEG

EXTREMITIES - INFLAMMATION - Joints

EXTREMITIES - HEAT - Upper limbs - burning heat

EXTREMITIES - FORMICATION - Upper limbs

EXTREMITIES - DISCOLORATION - Foot - redness

EXTREMITIES - CRAMPS - Upper arm - Deltoid

BACK - STIFFNESS - Lumbar region

BACK - STIFFNESS - Dorsal region

Joints - ARTHRITIC, deposits, nodosities⁽⁸⁾

ROLE OF URTICA URENS ON GLANDULAR SYSTEM

Clinical Conditions: Agalactia , Goitre, Mastitis, Gynecomastia, Hypothyroidism , Hyperthyroidism, Splenomegaly

Doctrine of Signature - One of the most common problem encountered in breastfeeding females is production of scanty milk which is not sufficient for meeting the nutritional demand of growing babies. Prolactin hormone is responsible for synthesis and secretion of milk from alveolar gland. Stinging nettle is responsible for the release of prolactin under the presence of histamine. It increases the milk production and makes the breastfeeding more comfortable.^[3,2]

Stinging nettle contain large amount of nutrients like vitamins and minerals like iron, calcium magnesium and vitamin A. Metabolism of thyroid hormone is mainly regulated by Vitamin A. Due to anti inflammatory property it helps in treatment of hypothyroidism , hyperthyroidism and goiter. Stinging nettle is responsible for the release of thyrotropin -releasing hormone under the presence of histamine.

Rubrics from multiple repertories:

Glands - SPLEEN, general - enlarged

Glands - SPLEEN, general - pain, spleen - vertigo, with

Glands - SPLEEN, general - sharp, pain - headache, with dull

Glands - THYROID, gland, remedies - goitre

Breasts - BREAST-feeding, general - weaning

Breasts - BREAST-milk, general - disappearing

Breasts - BREAST-milk, general - non-nursing, women, in

Breasts - BREAST-milk, general - scanty

Breasts - BREAST-milk, general - suppression, of mother milk, ailments from

Breasts - PAIN, breasts

Breasts - SWELLING, of⁽⁸⁾

ROLE OF URTICA URENS IN KIDNEY DISORDERS

Clinical Conditions: Renal Stones, Urinary Tract Infection, Enuresis

Doctrine of Signature - It helps to prevent and dissolve kidney stones and regulate uric acid levels with its diuretic and lithotripter effects. Testosterone increases urinary oxalate excretion and suppresses the expression of osteopontin in kidneys which can promote stone formation. The root of stinging nettle has ability to reduce the amount of free testosterone. Due to its detoxifying property and alkalinity it has the ability to neutralize the acids produced in the body and excretes through urine. Nettle leaves are beneficial in lowering elevated creatinine levels and serum blood urea nitrogen.^[3] It regulates ADH hormone level and helps in maintaining osmotic balance and controls the amount of urine made and blood pressure by constricting the blood vessels. As a diuretic, stinging nettle aids in the clearance of more toxins linked with urinary tract infections. Leaves of plant has urine and blood purifier properties and enriched with polyphenols that possess antioxidant properties which reduces nephrotoxicity and renal load.^[4]

Rubrics from multiple repertories:

Bladder - BEDWETTING, enuresis

Bladder - RETENTION, of urine

Bladder - URINATION, general - involuntary, urination - night

Urine - SEDIMENT, urinary - sand, urinary - gravel

Urine - SEDIMENT, urinary - kidney stones, from

Urine - ACRID

Kidneys - URIC acid diathesis

Kidneys - UREMIA - coma, uremic

Kidneys - SUPPRESSION, of urine, kidney

Kidneys - PAIN, ureters - inter-paroxysmal

URINE - CASTS, containing - urate

KIDNEYS - PAIN

BLADDER - URINATION – involuntary⁽⁸⁾

CONCLUSION

In this article, we have concluded that urtica urens has wide scope in many areas. This plant has been in use since ancient times in the treatment of many health issues. It has enormous nutritional and pharmacological qualities. It has many Antioxidant, antimicrobial, properties. This article shows the true value of urtica urens in covering wide spectrum of clinical conditions which further needs frequent clinical verification.

REFERENCES

1. Bhusal KK, Magar SK, Thapa R, Lamsal A, Bhandari S, Maharjan R, Shrestha S, Shrestha J. Nutritional and pharmacological importance of stinging nettle (*Urtica dioica* L.): A review. *Heliyon*. 2022 Jun 1;8(6).

2. Marks R. Roxburgh's Common skin diseases. 17th ed. Great Britain: Arnold Publishers; 2003. 71-74.
3. Hutchison. Hutchison's Clinical Methods. 22nd ed. China: Elsevier India (p) Ltd.
4. Patel S, Bibaswan B, Rambabu K, et al. Pharmacognostic and physicochemical study of *Urtica urens* L.: A drug used in Homoeopathy. Indian J Res Homoeopathy 2019;13:91-99. doi: [10.4103/ijrh.ijrh_50_18](https://doi.org/10.4103/ijrh.ijrh_50_18)
5. Clarke JH. A dictionary of practical materia medica. New Delhi: B. Jain publishers; 1902.
6. Boericke W. Pocket Manual Of Homoeopathic Materia Medica. 9th ed. New Delhi: B Jain Publishers Ltd.; 1997.
7. Burt WH. Physiological materia medica. 5th ed. New Delhi: B Jain Publishers Ltd.; 2003. 940-41
8. Zandvoort R V. Complete Repertory Radar Version 10.0.028 Archibel Isnes, Belgium 2007.
9. Lockie A. Encyclopedia of Homoeopathy. 2nd ed. New Delhi: B Jain Publishers Ltd.; 2003.
10. Murphy R. Louts Materia Medica. 2nd ed. New Delhi: B Jain Publishers (P) Ltd; 2000.