

Original Article

POTENTIAL MEDICINAL PLANTS AND TRDITIONAL AYAUVEDIC APPROACH TOWARDS URTICARIA,
AN ALLERGIC SKIN DISORDER

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Received: 04 Mar 2014 Revised and Accepted: 24 Mar 2014

ABSTRACT

Skin diseases are a major health problem in the all age group and are associated with significant morbidity. Urticaria is considered as a major problem with respect to its etiology, investigation, and management. Despite the high frequency of certain skin diseases in developing countries, they have so far not been regarded as a significant health problem in the development of public health strategies. Treatment failure rate is extremely high in the management of skin diseases in primary care settings. Urticaria is the fourth most prevalent allergic disease which occurs due to the release of histamine, bradykinin, kallikrein, and other vasoactive substances from mast cells and basophils in the superficial dermis. It is truly not one disease, but a reaction pattern of the skin involving the upper dermis, representing localized edema and marked by the development of wheals. Acute Urticaria is more common in young patients while chronic type is in middle-aged women. Antihistamines, corticosteroids, and leukotriene antagonists can provide temporary symptomatic relief. This review provides comprehensive data about medicinal plants which are useful in the commonest allergic skin manifestation, Urticaria. Secondary it describes Ayurvedic measures that could be used to control this problem.

Keywords: Skin, Urticaria, Morbidity, Allergic disease.

INTRODUCTION

Skin disorders are the most common health problems among people account and amount to approximately 34% of all occupational diseases encountered. It may cause emotional and psychological stress to the patient and their family. Most common skin complaints are Dermatitis, Eczema, Acne, Urticaria, Psoriasis, skin allergy etc. which required long term medication. Skin diseases are neglected in health care, probably due to the fact that majority of them are not associated with mortality. However, morbidity caused by these problems is neither realized fully nor taken much seriously even by the health care administrators, who have other competing priorities in the public health front. The present study thus compile the traditional medicines use in the treatment of allergic skin disease urticaria and also point out that these medicines and plants warrants future detailed investigation as a promising anti-urticaria agent.

Urticaria is a transient redness and swelling of skin with itching, causing wheals in the dermis or large hypodermal swellings [1]. It is lumpy and itchy rashes which look like the effect of a nettle sting and occurs for more than six weeks [2, 3]. It is the fourth most prevalent allergic disease which affects 20% of total population once in their life [4, 5]. Acute Urticaria is most common in young patients while chronic type is in middle-aged women which are more difficult clinical problem [6, 7]. A personal or family history of Atopy is no more common in patients with Urticaria. Though the disease is not a life threatening disorder, but the disability and distress caused by urticaria can lead to serious impairment of quality of life, almost comparable to that experienced by patients with cardiovascular disease [8, 9]. It has many etiologies and different pathophysiologies, having acute and chronic forms. The most common cause of acute urticaria is a state of hypersensitivity to food or drugs, and it may also result from viral [10], bacterial (e. g. with *Helicobacter pylori* [11] or parasitic infection [12- 14]. Psychogenic factors, e.g. anxiety, stress play important role in producing urticaria [15]. It is truly not one disease, but a reaction pattern of the skin – a vascular reaction, usually transient, involving the upper dermis, representing localized edema caused by dilatation and increased permeability of the capillaries, and marked by the development of wheals. It manifests as a pruritic, erythematous, raised rash [16].

However, a recent study has shown that about one third of patients with chronic urticaria have circulating functional histamine-

releasing autoantibodies [17, 18] that bind to the high-affinity IgE receptor (Fc RI) or, less commonly, to IgE [19, 20]. Because of these diverse and complicated disease mechanisms, a combination of medications are commonly used [21]. Antihistamines, corticosteroids, and leukotriene antagonists are commonly used for treatment of urticaria. The duration of the treatment ranges from 30 to 190 days [22, 23]. Though modern medicine can provide temporary symptomatic relief, it cannot cure it permanently. So, patients have to take medicines for long time, which may be having some unwanted effects. As a result, exploration of alternative therapies with more favorable safety profiles is urgently needed [22]. Ayurveda can provide permanent cure for it. Acupuncture also helpful in management of Acute and chronic, both types of urticaria [24-26].

Ayurvedic view

Ayurveda means, the knowledge (*Veda*) of life (*Ayu*). It is one of the oldest and still existing systems of medicine in the Indian continent. Maintenance and promotion of normal health as well as fight against the diseases are two main aim of this system. Thus it deals with *hita* (favorable) and *ahita* (unfavorable) substance to *Ayu*. *Ayurveda* explain certain rules for healthy life in terms of *ahara* (diet) and *vihara* (life style). Violation of these rules leads to several pathogenesis, which ultimately produces different diseases primarily related to skin or respiratory system. In *Ayurveda*, all skin diseases have been described under the umbrella of *kushtha*. Beside this, some allergic conditions are not included in *kushtha* such as *shitapitta*, *udarda* and *kotha*. These three are usually used as synonyms of each other [27], having a common symptom of itchy red rashes on skin on almost all over the body. Various conditions like *asatmya*, *virudhahara* and *dushivisha* are common etiological factors for these diseases which can be correlated with allergic conditions [28]. Various forms of urticaria and angioedema, having similar symptomatology can be taken as *shitapitta*, *udarda* and *kotha* [29]. In classics *kotha* and *udarda* are mentioned either as a symptom or latrogenic disease.

Kotha is mention as a symptom of the insect bite, *Mushika Damsa* (Rat bite) and *Sannipataja Jvara* (complicated fever). It is also stated that it presents *Poorvarupa* (prodromal symptom) of *Kushtha* (leprosy and other skin diseases) and *Raktapradoshaja Vikara* (blood disorder). This condition also occurs as complication of excessive intake of *Lavana Rasa* (salty material) and *Vamana*

(therapeutic vomiting) procedure. *Rakta Kotha* is mention as *Nanatmaja Vikara* of *Pitta*, as symptom of *Pittaja Jvara*. *Udarda* is mention as *Poorvarupa* of *Unmada*, as symptom of *Kaphaja Jvara*, as *Nanatmaja Vikara* of *Kapha*. *Utkotha* is mention as complication of *Punaravartaka Jvara* (recurrent fever) [30- 32].

Madhavakara described *Shitapitta* and *Udarda* as synonyms of each other; but then he quoted that *Shitapitta* is having *Vatika* dominency while *Udarda* is having *Kaphaja* dominency. These all have same cardinal symptom i.e. itchy red rashes on the skin. The different clinical features of *Shitapitta*, *Udarda* and *Kotha* are enumerated in table 1.

Table1: Clinical features of Shitapitta, Udarda and Kotha [27]

<i>Shitapitta</i>	<i>Udarda</i>	<i>Kotha</i>
<i>Varati Damshta Samsthana Shotha</i> (Inflammation like an insect bite)	<i>Sotsanga Saraga Mandala</i> (the red itchy rash having depression in center.	<i>Mandalani</i> (Rashes)
<i>Kandu Bahula</i> (Sever itching)		<i>Kandu</i> (Itching)
<i>Toda Bahula</i> (Excessive pain like pricking)		<i>Ragavanti</i> (Redness)
<i>Chhardi</i> (Vomiting)		<i>Bahuni</i> (Spread all over the body)
<i>Jvara</i> (Fever)		Above symptoms, in acute stage-called <i>Utkotha</i> and when become chronic, called <i>Kotha</i> .
<i>Vidaha</i> (Burning Sensation)		

Table 2: Medicinal plants effective in urticaria

Plant	Family	Common Name	Part Used	Application	Reference
1 <i>Achyranthes aspera</i> L.	Amaranthaceae	Apamarga	Leaves	The paste of leaves is applied externally on skin allergy.	[43]
2 <i>Adansonia digitata</i> Linn.	Bombacaceae	Gorakshi	Fruit	Used in urticaria	[44]
3 <i>Albizzia lebbek</i> (L.) Benth	Fabaceae	Shirisha	Bark	Decoction is used in allergic conditions such as allergic rhinitis, allergic asthma, urticaria etc	[45]
4 <i>Allium cepa</i> L.	Amaryllidaceae	Onion	Bulb	The bulbs are pounded and paste is applied externally on skin allergy.	[43]
5 <i>Aloe Barbadosis</i> Miller	Liliaceae	Kumari, Aloe	Leaves	The paste of leaves is applied externally on skin allergy.	[46]
6 <i>Alysicarpus vaginalis</i> (L.) DC.	Fabaceae	White Moneywort	Leaves	The leaf paste is applied externally on skin allergy.	[43]
7 <i>Amaranthus spinosus</i> L.	Amarathaceae	Spiny Pigweed	Leaves	Whole plant juice is applied on allergic infected area before bathing daily once.	[47]
8 <i>Anisochilus carnosus</i> Wall	Lamiaceae	Karpuravalli	Leaves	Juice of fresh leaves is used in urticaria	[44]
9 <i>Barleria prionitis</i> L.	Acanthaceae	Kuranta	Leaves	The leaf paste is externally applied on skin allergy and chilbalins.	[43]
10 <i>Basella alba</i> Linn.var. rubra Stewart.	Basellaceae.	Upodikaa	Leaves	Leaves are used as poultice for sores, urticaria and gonorrhea.	[48- 50]
11 <i>Bergia odorata</i> Edgew.	Elatinaceae	Gangharan	Whole Plant	Plant paste is used in urticaria and allergic sores	[51]
12 <i>Brassica juncea</i> (L.) Czern.	Brassicaceae.	Rai, Brown Mustard	Seed	The paste of seeds is externally used on boils and skin allergy.	[43]
13 <i>Calotropis gigantea</i> L.	Asclepiadaceae	Arka	Leaves	Leaf paste is applied on allergic infected area till it cures. Latex is applied on ringworm infected area till it	[47]
14 <i>Casearia elliptica</i> Willd.	Flacourtiaceae	Chilla	Leaves	The paste of leaves is applied on wounds to check bleeding. The paste of stem bark is applied on skin allergy.	[43]
15 <i>Cedrus deodara</i>	Pinaceae	Deodar	Resin	Resin is used for the treatment of urticaria and skin diseases.	[52]
16 <i>Celastrus paniculatus</i> Willd.	Celastraceae	Malkangani	Leaves	The paste of leaves is applied externally on eczema. The ash of roots is mixed with fruit piece of <i>Citrus pseudolimon</i> (galgal) and placed in an earthen pot for a whole night; the whole material is dried in shade in early morning and made into paste, this preparation is given orally (2-3 gm), twice a day for 10-15 days with cold water to treat body allergy, milk is avoided during treatment.	[43]
17 <i>Celosia argentea</i> L.	Amaranthaceae	Cockscomb	Leaves	The decoction of leaves is used to wash skin llergy.	[43]
18 <i>Cleome gynandra</i> L.	Capparaceae	Hulhar	Leaves	The whole plant paste is applied externally on skin allergy.	[43]
19 <i>Cordia dichotoma</i> G. Forst.	Ehretiaceae	Shleshmataka	Seed, Leavev, Fruit	Urticaria, ulcer, dyspepsia, expectorant, stomach ache, urinary complaints, jaundice cholera, cold, cough, chest infection, lung diseases	[53]
20 <i>Coriandrum sativum</i> L.	Apiaceae	Dhaniya	Aerial Part	Leaf paste is applied on allergic affected area for a week.	[47]

21	<i>Crinum viviparum</i> (Lam.) R.	Amaryllidaceae	Pindar, River Crinum Lily	Bulb	The paste of bulb is applied externally on boils and skin allergy.	[43]
22	<i>Curculigo orchoides</i> Gaertn.	Hypoxidaceae	Kali Musli	Leaves	The paste of leaves is applied externally on skin Allergy.	[43]
23	<i>Curcuma domestica</i> Valeton	Zingiberaceae	Turmeric	Rhizome	The juice of the rhizome is mixed with the juice of <i>Ocimum sanctum</i> Linn. Leaves and taken orally in the treatment of urticaria.	[54]
24	<i>Curcuma longa</i> L.	Zingiberaceae	Turmeric	Rhizome	Paste of fresh turmeric with leaves of neem and paste of turmeric and Durva (<i>Cynodon dactylon</i>) helps in the healing of itches, boil, rheumatism, urticaria, and ringworm. Five gram of fresh turmeric and molasses cures biles and urticaria. In chronic skin ailment turmeric processed with clarified butter, milk and mixed with and black pepper, ginger, cinnamon given in the morning in prurigo, boils, urticaria and chronic skin eruptions.	[55]
25	<i>Cynoglossum lanceolatum</i> Forssk.	Boraginaceae	Laksmana	Leaves	The juice of leaves is used over skin allergy.	[43]
26	<i>Dendrophthoe falcata</i> (L.f.) Ettingsh.	Loranthaceae	Banda	Roots	The roots are crushed and its juice is applied on Skin allergy.	[43]
27	<i>Dictamnus dasycarpus</i> Turcz.,	Rutaceae	Bai Xian Pi	Root Bark	In Korea, the root bark used for the treatment of skin diseases such as eczema, pruritus and urticaria.	[56, 57]
28	<i>Emblica officinalis</i> Gaertn.	Euphorbiaceae	Amala	Leaves	Leaf and bark paste is applied on allergic affected area daily once till it cures.	[47]
29	<i>Fumaria indica</i> (Hausskn.) Pugsley	Papaveraceae	Pit Papra	Whole Plant	The plant is made into paste and applied externally on skin allergy.	[43]
30	<i>Gloriosa superba</i> L.	Colchicaceae	Kalihari	Rhizome	Rhizome paste is applied over the affected parts to cure all types of skin allergy.	[58]
31	<i>Heliotropium indicum</i> Linn.	Boraginaceae	Hastishundi	Leaves	Decoction of leaves used for urticaria. Leaf juice is used in eye disease and decoction is used in fevers and urticaria.	[59-63]
32	<i>Hibiscus rosa-sinensis</i> Linn.	Malvaceae	Japa	Leaves	Fresh leaf juice mixed with juice of fresh rhizome of <i>Curcuma domestica</i> Valeton is taken orally in the treatment of urticaria.	[54]
33	<i>Impatiens balsamina</i> Linn.	Balsaminaceae.	Tarini	Flower	In Japan, the juice, obtained from the white petals, is applied topically	[44]
34	<i>Ipomoea nil</i> (L.) Roth	Convolvulaceae	Sulkairi	Seed	Seed paste is applied in urticaria.	[64]
35	<i>Kaempferia galanga</i> L.	Zingiberaceae	Kercur	Rhizome	Used in urticaria.	[65- 67]
36	<i>Lagerstgroemia parviflora</i> Roxb.	Lythraceae	Sinamara	Bark	Used in urticaria.	[68]
37	<i>Leonotis nepetifolia</i> (L.) R.Br.	Lamiaceae	Bara Guma	Inflorescence	The inflorescence is pounded and its paste is applied on skin allergy.	[43]
38	<i>Litsea glutinosa</i> (Lour.) C.B. Rob.	Lauraceae	Rain, Indian Laurel	Bark	The paste is applied on skin allergy.	[43]
39	<i>Melia azedarach</i> L.	Meliaceae	Baikan	Fruit	The fruit paste is applied externally on skin allergy.	[43]
40	<i>Mentha piperata</i> Linn.	Lamiaceae	Pudinaa.	Leaves	External application of leaf paste in urticaria	[69]
41	<i>Mirabilis jalapa</i> Linn.	Nyctaginaceae	Trisandhi	Leaves	Leaf juice Externally applied for cure the urticaria. Leaf juice is used for itching in urticaria	[70, 71]
42	<i>Musa sapientum</i> var. <i>paradisiaca</i>	Musaceae	Banana	Fruit	Used in urticaria.	[72]
43	<i>Ocimum americanum</i> L.	Lamiaceae	Hoary Basil	Leaves	The fresh leaves are used in urticaria in Mahi communities	[73]
44	<i>Ocimum sanctum</i> L.	Lamiaceae	Tulasi	Leaves	Fresh leaf juice mixed with the juice of <i>Curcuma domestica</i> Valeton rhizome is taken orally for treatment of urticaria.	[54]
45	<i>Ougeinia oojeinensis</i> (Roxb.) Hochr.	Fabaceae	Sandan, Tinnas	Bark	The bark paste is applied externally on skin allergy.	[43]
46	<i>Phyllanthus amarus</i> Schumach. & Thonn.	Phyllanthaceae	Bhumymlaki	Leaves	The crushed leaves are made into paste and applied externally on skin allergy.	[43]

47	<i>Plumbago zeylanica</i> L.	Plumbaginaceae	Chitraka	Roots	The paste of roots is applied externally on skin allergy and on boils.	[43]
48	<i>Pongamia pinnata</i> (L.) Pierre	Fabaceae.	Karanju	Seed Oil	The oil extracted from seeds is externally applied on itching and skin allergy.	[43]
49	<i>Portulaca oleracea</i> L. Kulfa,	Portulacaceae	Purslane	Whole Plant	The plant is used for Iron deficiency and skin allergy	[74]
50	<i>Premna integrifolia</i> Linn.	Verbenaceae	Agnimantha	Root	Decoction of root is useful in urticaria.	[75]
51	<i>Prunus persica</i> (L.) Stokes	Rosaceae	Peach	Seed Oil	The oil of seeds is effective externally in the treatment of skin allergy.	[43]
53	<i>Rubus fruticosus</i> L.	Rosaceae	Blackberry Karwara	Fruit	Used in urticaria.	[76]
54	<i>Santalum album</i> L.	Santalaceae	Chandan	Leaves	Bark, Leaf paste is applied on allergic affected area daily once for 4-5 d.	[47]
55	<i>Sapindus laurifolius</i> Vahl.	Sapindaceae	Phenil,	Fruit	Skin disease	[53]
55	<i>Putranjva roxburghii</i> Wall.	Euphorbiaceae	Putranjva	Fruit	Dried fruit beaded in a garland is put on the neck to cure skin allergy.	[77]
56	<i>Terminalia alata</i> Heyne ex Roth	Combretaceae		Leaves	The paste of leaves is applied over skin allergy.	[43]
57	<i>Terminalia chebula</i> Retz.	Combretaceae	Haritaki	Bark	Fresh bark decoction is taken orally for the treatment of urticaria.	[54, 78, 79, 80]
58	<i>Trachyspermum ammi</i> L.	Apiaceae (Umbelliferae)	Ajowan	Fruit	Ajowan daily intake is said to cure urticaria within a week.	[81, 82]
59	<i>Vernonia colorata</i> (Willd.) Drake	Asteraceae	Starry Bitter-Tea	Leaves	The fresh leaves are used in urticaria	[73]
60	<i>Wrightia arborea</i> (Dennst.)	Apocynaceae	Mabberley Dhudla	Latex	The latex is applied on cuts, wounds and on skin allergy.	[43]
61	<i>Zingiber officinale</i> Rosc.	Zingiberaceae	Adraka	Rhizome	Fresh rhizome is crushed with 2-3 year old molasses taken orally in the treatment of urticaria.	[54]

MANAGEMENT

EXTERNAL ADMINISTRATION

Abhyanga (medicated oil massage) by *Katu Taila* (mustard oil) and *Parisheka* ((sprinkling of herbal decoction on body)) by *Ushnambu* (hot water) [33, 34].

Abhyanga by *Yavakshara* (Potassium carbonate) and *Saindhava Lavana* (rock salt) mixed with *Katu Taila* [33, 34].

Local application of *Durva* (*Cynodon dactylon* Linn.) and *Haridra* (*Curcuma longa* Linn.) [33, 34].

Local application of *Tulsi* (*Ocimum sanctum* Linn.) *swarasa* (juice) is an excellent remedy [35].

Local application of *Saindhava Lavana* and *Kustha* (*Saussurea lappa* C.B. Clarke.) with *ghrita* [35].

Udvertana (Local application of drugs in paste form) by *Siddhartha* (*Brassica campestris* Linn.), *Haridra*, *Tila* (*Sesamum indicum* Linn.) and *Katu taila* [34].

INTERNAL ADMINISTRATION

The ten drugs mentioned in *Udarda Prashamana Mahakashaya* (group for relieve skin rashes) by *Charaka* [32].

The 29 drugs mentioned in *Eladi Gana* as *Shamana* (palliative) drugs for *Kotha* by *Sushruta* [30].

Internal administration of formulations *Haridra Khanda* [33, 36], *Adraka Khanda*, *Shitapittabhanjana Rasa*, *Shleshmpittantaka Rasa*, *Brihat, Yashtyadi Kwatha*, *Amritadi kwatha*, *Vireshvaro Rasa*, *Vardhamana Lashuna Prayoga*, *Kushtadi yoga*, *Matiktaka ghrita* [33, 35], *Dhatrikhanda* [37], *Visarpokta Amritadi Kwatha* [34] and *Navakarshika Guggulu* [38, 39].

The root (bark) of *Agnimantha* (*Premna integrifolia* L.) pounded and taken with *ghrita* alleviates *sitapitta*, *udarda* and *kotha* within a week [33, 34].

Decoction of *Guduchi* (*Tinospora cordifolia*), *Haridra*, *Nimba* (*Azadirachta indica* A. Juss.), *Dhanvayasa* (*Fagonia cretica* Linn.) with *Madhu* (Honey) or *Yashtimadhu* (*Glycyrrhiza glabra* Linn.), *Madhuka Pushpa* (flower of *Madhuca indica* J.F. Gmel.), *Rasna*

(*Pluchea lanceolata* Oliver & Hiern.), *Chandana* (*Santalum album* Linn.), *Raktachandana* (*Pterocarpus santalinus* Linn. f.), *Nirgundi* (*Vitex negundo* Linn.) and *Pippali* (*Piper longum* Linn.) [33].

By regular use of the *Yashtimadhu churna* with sugar [33, 34] or *Triphala churna* with *Madhu* or *Yavani* (*Trachyspermum ammi* (Linn.) Sprague) with *jaggery* [33, 37] or leaves of *nimb* and *amalaki* (*Embilca officinalis* Gaertn.) mixed with *ghee* [34, 35, 37, 38].

One should use *Pippali-Vardhamana* or *garlic* and *Amalaki* mixed with *Jaggary* [35, 37].

The ripe fruits of *Kashmarya* (*Gmelina arborea* Roxb.) are dried and then cooked with cow milk and taken with the same keeping on the wholesome diet [34].

Vamana (therapeutic vomiting) by *Patola* (*Trichosanthes dioica* Roxb.) and *Nimb Kwatha* (decoction) [34].

Purgation by using *Triphala*, *Guggulu* (*Commiphora mukul* (Hook. Ex stocks.) Engl.) and *Pippali* [33].

The diet of the patient should contain soup of dried radish or *Kullatha* (*Dolichos biflorus* Linn.) [34].

The role of *Rasayana* in the cure of urticaria was evaluated wherein it was concluded that if the *Guduchi* and *Bhringaraja* *Eclipta alba* Linn. *Rasayana*, when added to the anti-urticaria drug viz. *Udarda Prashamana* powder, the cure rate of the patients of *Shitapitta* was increased from 27.3% to 71.4% [40]. So this combined therapy was considered as ideal for the treatment for *Shitapitta*. These findings were reconfirmed by [41, 42].

MEDICINAL PLANTS EFFECTIVE IN URTICARIA

Plants have immeasurable prospective for their use as curative medicine. In India, medicinal plants are widely used by all sections of people both directly as folk medicines in different indigenous systems of medicine like *Siddha*, *Ayurveda* and *Unani* and also in modern pharmaceutical preparations. Herbs, which have always been the principal form of medicine in developing countries, are once again becoming popular throughout the developing and developed world. Various plants along with their parts used and their applications are listed below.

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