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INTERNATIONAL JOURNAL OF PHARMACY & PHARMACEUTICAL RESEARCH  
An official Publication of Human Journals

ISSN 2349-7203



Human Journals

**Review Article**

May 2024 Vol.:30, Issue:5

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## A Comprehensive Review of Asanadi Gana with Special Reference to its Kushthaghna Property



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INTERNATIONAL JOURNAL OF PHARMACY & PHARMACEUTICAL RESEARCH  
An official Publication of Human Journals



ISSN 2349-7203

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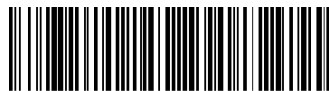
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**Submitted:** 27 April 2024  
**Accepted:** 02 May 2024  
**Published:** 30 May 2024

**Keywords:** Asanadi gana, Kushtha, Psoriasis, Skin diseases, Rasayana

### ABSTRACT

According to estimates, 80% of the world's population relies on traditional herbal medicine for primary healthcare. The excessive use of synthetic pharmaceuticals increases the risk of adverse drug reactions, leading many to turn to safer, natural treatments. In Ayurveda, 'Kushtha' encompasses various skin problems, classified as Mahakushtha and Kshudrakushtha based on severity. In India, the prevalence of skin diseases ranges from 7.9% to 60%, with psoriasis affecting 3-5%. Stress plays a significant role in skin conditions, making stress management crucial. Asanadi Gana, known for its rasayana properties, can help manage chronic skin issues. This review examines the traditional medicinal properties of Asanadi Gana for treating Kushtha. Various sources, including Ayurvedic texts and online literature, were reviewed to gather relevant information. Pharmacological research confirms that Asanadi Gana ingredients possess anti-inflammatory, antimicrobial, analgesic, wound-healing, and antioxidant properties. The current review focuses on the traditional medicinal properties along with pharmacological actions of *asanadi gana* and its potential for treating *kushtha*, a serious condition that affects people all over the world and causes significant financial, social, and personal loss.



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## INTRODUCTION

Skin, the body's largest organ, is vital for interaction with the environment and is highly susceptible to diseases. It is one of the five 'Gyanendriyas' that are mentioned in Ayurvedic literature and is responsible for the sense of touch known as 'Sparsha Gyan'. In Ayurveda, most skin disorders fall under 'Kushtha,' a term that implies significant skin deterioration and is considered one of the most chronic and challenging conditions to treat. This dermatological condition may be compared to psoriasis in modern medicine. In addition to these purposes, the depiction of skin also alludes to ideas of health, wellbeing, beauty, and youth, all of which are connected to a person's sense of self-worth and mental health. Skin disease victims frequently encounter emotional and social betrayal in society.<sup>[1]</sup>

Psoriasis is a chronic inflammatory skin conditions that is non-infectious and is clinically distinguished by erythematous, clearly defined papules and spherical plaques covered in silvery micaceous scales. The course of psoriasis is often unexpected, the intensity of each episode or flare can vary, and it frequently recurs over the course of a person's lifetime. Psoriasis has serious co-morbidities and degrades a patient's quality of life.<sup>[2]</sup> Understanding the various possibilities for therapy and being aware of the related side effects are essential for the successful management of psoriasis patients.

Numerous ayurvedic remedies have been mentioned for the treatment of such skin conditions. There are numerous single medications, groups of drugs, and formulations mentioned. One such group is *asanadi gana* consisting of 23 drugs mentioned in *Ashtanga hridaya* and *Ashtang sangraha* under *vividhaganasamgraha adhyaya* <sup>[3]</sup> and *shodhanadiganasamgraha adhyaya*.<sup>[4]</sup> This *gana* is mainly indicated for the management of *shwittra, kushtha, prameha, krimi, pandu, kaphaja vikara and medodosha*. Each of the medicines in this *gana* has been well studied for its anti-diabetic activity and is individually well-documented in ayurvedic classics. This paper aims to explore the traditional medicinal properties of Asanadi Gana in managing Kushtha, akin to psoriasis in modern medicine, which severely impacts patients' quality of life and mental health."

## MATERIALS AND METHODS

This review draws on information from ancient Ayurvedic texts, including the *Ashtanga Hridaya* and *Ashtanga Sangraha*, and various scientific publications. The review process involved a critical examination of these sources to compile and interpret data relevant to the *kushthaghna* properties of *Asanadi Gana*.

## Review of literature

### A brief about *Kushtha roga*

'*Kush + Niskarsne*' is merged with the suffix '*Kthan*' to get the term "*Kushtha*." By adding the '*Kthan*' suffix, which symbolises for firmness or certainty, it signifies to ruin, scrape out, or deform. *Kushtha*, thus, refers to something that is certain to destroy.<sup>[5]</sup>

*Kushtha* is *tridoshaja* in origin, and the predominance of one *dosha* causes a particular cluster of symptoms.<sup>[6]</sup> According to *Acharya Charaka*, there are seven factors that contribute to the pathophysiology of *Kushtha*, including *Vata*, *Pitta*, *Kapha*, *Tvak*, *Rakta*, *Mamsa*, and *Ambu (Lasika)*.<sup>[7]</sup> According to *Acharya Charaka*, in *sutrasthana*, *kushtha* is said to be a *raktaja vikara*.<sup>[8]</sup> Therefore, when determining the aetiology of *Kushtha*, the causes of the vitiation of these seven components are also taken into account.

*Kushtha* is broadly classified into two types namely *Mahakushtha* and *Kshudra kushtha*. According to *Acharya Charaka*, *Tridosha Kushtha* can be categorised into seven types, eighteen types, and perhaps an infinite number of types due to the different *doshadushya sammurchanas* that exist. Classification of *mahakushtha* and *kshudra kushtha* according to various *acharyas* have been mentioned in Table No1 and Table No 2.<sup>[9-14]</sup>

Due to the irrespective *Hetus*, the *Doshas* become vitiated and disseminate throughout the body, which in turn vitiates the *Dhatu*s and manifests the disease. The entire process is referred to as *Samprapti*.<sup>[15]</sup> *Charaka* has emphasised *Nidana*'s dual role in the vitiation of *Tridosha* and *Shaithilyata* in the *Dhatu*s, including *Twak*, *Rakta*, *Mamsa*, and *Lasika*. As a result, vitiated *tridoshas* intensify their efforts to vitiate *shithila dhatu*s, which causes the manifestation of the disease-*Kushtha*.<sup>[16,17]</sup>

*Nidana Sevana*



*Tridosha Prakopa*



*Twak, Rakta, Mamsa and Ambu Shaithilyata*



Further Vitiating of *Doshas* occurs



These *Doshas* gets accumulated at the place of *Dhatu Shaithilyata*



*Dosha and dushya samurchhana*



*Kushtha*

**Table No. 1: Classification of Mahakushtha**

Sr. No.	<i>Mahakushtha</i>	Ch	Su.	A.H.	Ka	M.N	B.P.
1.	<i>Kapala</i>	+	+	+	+	+	+
2.	<i>Audumbara</i>	+	+	+	+	+	+
3.	<i>Mandala</i>	+	-	+	+	+	+
4.	<i>Rushyajihva</i>	+	+	+	+	+	+
5.	<i>Pundarika</i>	+	+	+	+	+	+
6.	<i>Sidhma</i>	+	-	-	+	+	+
7.	<i>Kakanaka</i>	+	+	+	-	+	+
8.	<i>Dadru</i>	-	+	+	-	-	-
9.	<i>Aruna</i>	-	+	-	-	-	-

Ch-Charaka Samhita, Su-Sushruta Samhita, A.H.- Ashtanga Hridaya, Ka- Kashyap Samhita, M.N.- Madhava Nidana, B.P.- Bhava Prakash

**Table No. 2: Classification of *Kshudrakushtha* [8]**

Sr. No.	<i>Kshudrakushtha</i>	Ch	Su.	A.H.	Ka	M.N	B.P.
1.	<i>Eka kushtha</i>	+	+	+	+	+	+
2.	<i>Kitibha</i>	+	+	+	+	+	+
3.	<i>Charmadala</i>	+	+	+	+	+	+
4.	<i>Pama</i>	+	+	+	+	+	+
5.	<i>Vicharchika</i>	+	+	+	+	+	+
6.	<i>Charmakhya</i>	+	-	+	-	+	+
7.	<i>Vipadika</i>	+	-	+	+	+	+
8.	<i>Alasaka</i>	+	-	+	-	+	+
9.	<i>Dadru</i>	+	-	-	+	+	+
10.	<i>Visphotaka</i>	+	-	+	-	+	+
11.	<i>Shataru</i>	+	-	+	+	+	+
12.	<i>Sidhma</i>	-	+	+	-	-	-
13.	<i>Sthularushka</i>	-	+	-	-	-	-
14.	<i>Makushtha</i>	-	+	-	-	-	-
15.	<i>Visarpoa</i>	-	+	-	-	-	-
16.	<i>Parisarpa</i>	-	+	-	-	-	-
17.	<i>Raksha</i>	-	+	-	-	-	-
18.	<i>Vishaja</i>	-	-	-	+	-	-

Ch-Charaka Samhita, Su-Sushruta Samhita, A.H.- Ashtanga Hridaya, Ka- Kashyap Samhita, M.N.- Madhava Nidana, B.P.- Bhavaprakash

*Kushtha* takes a long time to develop, are frequently incurable, and demand for patience to take treatment for a longer period of time. Without the vitiation of *tridoshas*, *kushtha roga* is not possible to occur.

#### ***Asanadi gana***

Botanical description of all the 23 drugs have been provided along with information on their pharmacological activities and rasa panchakas in table no 3-5. Some of the drugs of asanadi gana have been used singly (*ekamoolika prayoga*) in the management of various *twak vikaras*, details of which are provided in table no.6.

Table no.3: Botanical details of all the Plants of *Asanadi gana* [18-22]

Sanskrit name	Botanical name	Family	Part used	Therapeutic indications
<i>Asana</i>	<i>Pterocarpus marsupium</i> Roxb.	Leguminosae	Heartwood, exudate	Shwitrahara, Kushthanashaka, Kaphajavikaraghna, Krimi-roga hara, Panduroga nashaka, Pramehahara, Medo dosha hara
<i>Tinisha</i>	<i>Ougenia oojeinesis</i> Roxb.	Leguminosae	Heartwood, stem bark	
<i>Bhurja</i>	<i>Betula utilis</i> D. Don.	Betulaceae	Stem bark	
<i>Shwetawaha</i>	<i>Terminalia arjuna</i> Roxb.	Combretaceae	Stem bark	
<i>Prakirya</i>	<i>Holoptelea integrifolia</i> Planch	Ulmaceae	Stembark, leaves, fruits	
<i>Khadira</i>	<i>Acacia catechu</i> Wild.	Leguminosae	Stem bark, heartwood	
<i>Kadara</i>	<i>Acacia suma</i> Buch. Ham	Leguminosae	Heartwood	
<i>Bhandi</i>	<i>Albizia lebeck</i> Benth.	Leguminosae	Stem bark	
<i>Shimshapa</i>	<i>Dalbergia sissoo</i> Roxb.	Leguminosae	Stem, stem bark, heartwood	
<i>Meshashringi</i>	<i>Gymnema sylvestre</i> R.Br.	Asclepiadaceae	Root, leaves, seeds	
<i>Shweta Chandana</i>	<i>Santalum album</i> Linn.	Santalaceae	Heartwood, oil	
<i>Rakta Chandana</i>	<i>Pterocarpus santalinus</i> Linn.	Leguminosae	Heartwood	
<i>Daruharidra</i>	<i>Berberis aristate</i> DC.	Berberidaceae	Root, stem, fruit	
<i>Tala</i>	<i>Borassus flabellifer</i> Linn.	Palmae	Leaves, flowers, fruits, exudate, kshara	
<i>Palasha</i>	<i>Butea monosperma</i> Lam.	Leguminosae	Seeds, flowers, stem bark, leaves, exudate	
<i>Agaru</i>	<i>Aquillaria agallocha</i> Roxb.	Thymelaceae	Heartwood, oil	
<i>Shaka</i>	<i>Tectona grandis</i> Linn. F.	Verbenaceae	Stem, leaves, stem bark, seeds	
<i>Shala</i>	<i>Shorea robusta</i> Gaertn.	Dipterocarpaceae	Stem bark, exudate	
<i>Kramuka</i>	<i>Areca catechu</i> Linn.	Palmae	Fruits, flowers, seeds	
<i>Dhava</i>	<i>Anogeissus latifolia</i> Wall.	Combretaceae	Stem bark, exudate	
<i>Kalinga</i>	<i>Holorrhena antidystrica</i> Linn.	Apocynaceae	Seed, stem bark	
<i>Chagakarna</i>	<i>Vateria indica</i> Linn.	Dipterocarpaceae	Bark, gum [21]	
<i>Ashwakarna</i>	<i>Diptocarpus turbinatus</i> Geartn.f.	Dipterocarpaceae	Oil, bark, fruit [22]	

Table no. 4: Ayurvedic properties & doshik action of the drugs of Asanadi gana <sup>[23-27]</sup>

Sanskrit name	Rasa	Guna	Veerya	Vipaka	Karma
Asana <sup>[23]</sup>	Katu, Kashaya, tikta	Laghu ruksha	Ushna	Katu	Kushtaghna, rasayana, kaphapittashamaka, galadoshaghna, keshya, twachya, stambhana, rakta shodhana
Tinisha <sup>[24]</sup>	Kashaya	Laghu, ruksha	Sheeta	Katu	Kushtaghna, vishaghna, vranaropana, medohara, pittahara, shonitasthapana, kaphasoshana
Bhurja <sup>[24]</sup>	Katu Kashaya	Laghu	Ushna	Katu	Tridoshashamana, bhutarakshakara, vishaghna, balya, sleshmahara, medohara
Shwetawaha <sup>[25]</sup>	Kashaya	Ruksha	Sheeta	Katu	Vrananashana, vyangahara, kaphapittahara, hridya, bhagnasandhanakara.
Prakirya <sup>[26]</sup>	Tikta, kashaya	Laghu, ruksha	Ushna	Katu	Kushtaghna, vedanasthapana, shothahara, shulahara, krimighna, raktashodhana
Khadira <sup>[23]</sup>	Tikta, kashaya	Laghu, ruksha	Sheeta	Katu	Krimighna, kushthagna, medohara, raktashodhana, kaphapittahara, dantya
Kadara <sup>[24]</sup>	Tikta	Vishada	Sheeta	Katu	Kaphapittahara, varnya, raktashodhaka
Bhandi <sup>[26]</sup>	Kashaya, tikta, Madhura	Laghu ruksha, teekshna	Anushna	Katu	Kushtaghna, vishahara, vedanasthapana, shothaghna, raktashodhaka.
Shimshapa <sup>[26]</sup>	Kashaya, katu	Laghu ruksha	Ushna	Katu	Kushtaghna, vranahara, lekhana, shothahara, raktashodhaka, rakta- pravartaka
Meshashringi <sup>[24]</sup>	Kashaya, tikta	Laghu ruksha	Ushna	Katu	Vishaghna, sramsana, Deepana, vatahar, kaphahara, chaksusya
Shweta Chandana <sup>[26]</sup>	Tikta, Madhura	Laghu, ruksha	Sheeta	Katu	Kandughna, angamardaprashamana, dahashamaka, jwaraghna, mutrajanana,

					<i>raktaprasadana.</i>
<i>Rakta Chandana</i> <sup>[26]</sup>	<i>Tikta, Madhura</i>	<i>Guru, ruksha</i>	<i>Sheeta</i>	<i>Katu</i>	<i>Dahaprashamana, raktastambhana, vishaghna, trishnahara</i>
<i>Daruharidra</i> <sup>[26]</sup>	<i>Tikta</i>	<i>Laghu, ruksha</i>	<i>Ushna</i>	<i>Katu</i>	<i>Vranashodhan-ropana, shothahar, twakdoshahar, vedanasthapana, grahi, pittavirechaka, swedajanana, varnya, raktashodhaka.</i>
<i>Tala</i> <sup>[26]</sup>	<i>Madhura</i>	<i>Snigdha, guru</i>	<i>Sheeta</i>	<i>Madhura</i>	<i>Dahatrishnashamana, raktapittashamaka, jwaraghna, balya</i>
<i>Palasha</i> <sup>[25]</sup>	<i>Katu, tikta, Kashaya</i>	<i>Sara, snigdha</i>	<i>Ushna,</i>	<i>Katu</i>	<i>Saraka, vrishya, agnidipaka, kaphavatashamaka</i>
<i>Agaru</i> <sup>[26]</sup>	<i>Katu, tikta</i>	<i>Teekshna, laghu</i>	<i>Ushna</i>	<i>Katu</i>	<i>Vranaropana, vedanasthapana, sheetaprashamana, raktashodhana</i>
<i>Shaka</i> <sup>[26]</sup>	<i>Kashaya</i>	<i>Ruksha, laghu</i>	<i>Sheeta</i>	<i>Katu</i>	<i>Krimighna, shothahara, stambhana, shonitasthapana</i>
<i>Shala</i> <sup>[26]</sup>	<i>Kashaya, tikta</i>	<i>Ruksha</i>	<i>Sheeta</i>	<i>Katu</i>	<i>Putihara, jantughna, vranaropanashodhana, stambhana, shulahara</i>
<i>Kramuka</i> <sup>[23]</sup>	<i>Kashaya</i>	<i>Guru, ruksha</i>	<i>Sheeta</i>	<i>Katu</i>	<i>Deepana, kaphapittajit, kledanashana, malabhedhi, mukhashodhana, vikasi</i>
<i>Dhava</i> <sup>[26]</sup>	<i>Kashaya, Madhura</i>	<i>Laghu, ruksha</i>	<i>Sheeta</i>	<i>Katu</i>	<i>Kushtaghna, vranashodhaka, ropana, vedanasthapana, raktapittashamaka, grahi, vishaghna</i>
<i>Kalinga</i> <sup>[26]</sup>	<i>Tikta, kashaya</i>	<i>Laghu, ruksha</i>	<i>Sheeta</i>	<i>Katu</i>	<i>Kushtaghna, vranashodhaka, arshoghna, jwaraghna, sthambana</i>
<i>Chagakarna</i> <sup>[27]</sup>	<i>Katu, tikta, Kashaya</i>	<i>Snigdha, ushna</i>	<i>Ushna</i>	<i>Katu</i>	<i>Vatahara, varnya, vishaghna, krimighna, swedahara, kaphahara</i>
<i>Ashwakarna</i> <sup>[22]</sup>	<i>Tikta, Katu</i>	<i>Laghu, Snigdha</i>	<i>Ushna</i>	<i>Katu</i>	<i>Kaphavatashamaka</i>



Table no 5: Pharmacological action of each drug of *Asanadi gana* [28-57]

S.No	Pharmacological action	Drugs	Common phytochemicals
1.	Anti-inflammatory activity	<i>Asana, Tinisha, Bhurja, Shwetawaha, Prakirya, Khadira, Kadara, Bhandi, Simshapa, Meshashringi, Shweta Chandna, Raktachandana, Tala, Palasha, Agar, Shaka, Shala, Kramuka, Kalinga, Chagakarna, Ashwakarna</i>	Phenols, polyphenols, tannins, Phytosterols, terpenoids, tri-terpenoids, saponins, alkaloids, carbohydrates, flavonoids, lactones, tannins, phenolic compounds, proteins, glycosides, anthraquinones.
2.	Analgesic	<i>Asana, Khadira, Simshapa, Tala, Shaka, Shala, Kalinga, Ashwakarna,</i>	
3.	Wound Healing Activity	<i>Tinisha, Shwetawaha, Prakirya, Bhandi, Raktachandana, Daruharidra, Palasha, Agar, Shaka, Kramuka, Dhava</i>	
4.	Anti-microbial and anti-bacterial	<i>Agar, Bhurja, Shwetawaha, Prakirya, Khadira, Bhandi, Simshapa, Meshashringi, Shwetachandana, Raktachandana, Daruharidra, Tala, Palasha, Agar, Shaka, Shala, Kramuka, Dhava, Kalinga, Ashwakarna</i>	
5.	Antioxidant and free radical scavenging activity	<i>Asana, Tinisha, Bhurja, Shwetawaha, Prakirya, Khadira, Kadara, Bhandi, Simshapa, Meshashringi, Shweta Chandna, Raktachandana, Tala, Palasha, Agar, Shaka, Shala, Kramuka, Kalinga, Chagakarna, Ashwakarna</i>	
6.	Immunomodulatory	<i>Tinisha, Shwetawaha, Raktachandana, Daruharidra, Shala, Dhava, Ashwakarna</i>	
7.	Hepatoprotective	<i>Dhava, Shaka, Agar, Palasha, Daruharidra, Rakta and Shweta Chandana, Khadira, Tinisha</i>	
8.	Anti-Diabetic	<i>Asana, Tinisha, Bhurja, Shwetawaha, Prakirya, Khadira, Kadara, Bhandi, Simshapa, Meshashringi,</i>	

		<i>Shweta Chandna, Raktachandana, Tala, Palasha, Agaru, Shaka, Shala, Kramuka, Kalinga, Chagakarna, Ashwakarna, Kadara</i>
9.	Anti-Tumour, Anti-Mutagenic/ anti-cancer, chemoprotective	<i>Bhurja, Shwaetawaha, Prakirya, Khadira, Bhandi, Shweta Chandana, Rakta Chanadana, Shaka, Kalinga, Chagakarna</i>
10.	Cytotoxic Effect	<i>Tala, Shaka, Ashwakarna</i>
11.	Hypolipidemic Activity / Anti-Obesity	<i>Asana, Tinisha, Prakirya, Meshashringi, Shweta Chandana, Shala</i>
12.	Anti-Ulcer	<i>Simshapa, Dhava</i>
13.	Anti-Hypertensive	<i>Tinisha, Shwetawaha</i>

Patil et al. investigated the anti-inflammatory properties of gels made from different plant extracts on animals. According to the study, a formulation that included *Pterocarpus marsupium* extract had greater anti-inflammatory action than the other gels, suggesting that it could be utilised as a useful treatment for inflammation.<sup>[58]</sup> According to Nimisha et al; transferosomal gel loaded with *B. aristata* extract may have anti-inflammatory and antipsoriatic properties.<sup>[59]</sup> A. Tiwari et al. studied the wound healing potential of acacia catechu in excision wound model using in vitro and in vivo approach. Among the tested extracts, the ethanolic extract showed the highest wound healing in comparison to other extracts.<sup>[60]</sup> Reviews show *Santalum album* has demonstrated biological activity as an anti-inflammatory, anti-microbial, and antiproliferative agent. Sandalwood album oil has also shown promise in clinical trials for treatment of acne, psoriasis, eczema, common warts, and molluscum contagiosum.<sup>[61]</sup> Above are some of the examples of drugs used for dermatological purpose. Similarly, other drugs included in the asanadi gana have been studied for their antimicrobial, anti-inflammatory, wound healing etc effects.

**Table no 6: Ekamulika prayoga of drugs of asanadi gana in various twak vikara** [62-69]

Sr No	Drug	Mode of administration	Indication
1.	<i>Daruharidra</i> [58]	<i>Rasanjana Kashaya-Snana, Pana, lepa</i>	<i>Kushta</i>
2.	<i>Tinisha</i> [59]	<i>Kashaya-Snana, Pana, lepa</i>	<i>Kushta</i>
3.	<i>Khadira</i> [60,61]	Oral intake of heartwood powder early morning and <i>Kashaya-Lepa, snana, pana, udvarthana</i>	<i>Twak roga</i>
4.	<i>Kutaja</i> [62]	<i>Beeja grinded with tandulambu lepa</i>	<i>Visphota</i>
5.	<i>Arjuna</i> [63]	<i>Twak with makshika-lepa</i>	<i>Vyanga</i>
6.	<i>Asana</i> [64]	<i>Shu.chi.6/19</i>	<i>Sarva kushtha</i>
7.	<i>Chandana</i> [65]	For relieving burning sensation	<i>Shu.uttr.47/55</i>

## DISCUSSION

*Kushtha* is regarded as one of the most chronic illnesses that is very challenging to treat. The pathophysiology of *Kushtha roga*, including psoriasis, appears to be heavily influenced by dietary, behavioural, environmental, genetic, and immunologic variables. Immunological changes brought on by *kapha* disruption favour the emergence of psoriasis. Keratinocyte hyperproliferation develops in the epidermis as a result of *Pitta* disruption. Vitiating *Vata* is the cause of an increase in the epidermal cell turnover rate. Therefore, psychological stress resulting from any factor has a bad impact on *Mana*, which in turn causes the onset or aggravation of an already present skin condition.<sup>[70]</sup>

Research shows that using herbal medicines and utilising their immunoregulatory and antioxidative roles in treatment is one strategy to modify the response of the cells involved in the psoriasis.<sup>[71]</sup> Literature reviews support the use of herbal medicines for psoriasis and the beneficial effect of phytochemicals in the treatment of this inflammatory illness. Skin microbiota is linked to the aetiology of psoriasis. Different skin-colonizing bacteria play a role in the control of the immune system. As a result, it is hypothesised that an abnormal immune activation caused by skin microbiota contributes to the pathogenesis of autoimmune disorders.<sup>[72]</sup>

Long-lasting inflammation that causes keratinocytes to grow out of control and differentiate abnormally is an important characteristic of psoriasis. Psoriatic plaque's histology reveals epidermal hyperplasia, which causes an inflammatory response made up of dermal dendritic cells, macrophages, T cells, and neutrophils.<sup>[73]</sup>

### **Contemporary mode of action of *asanadi gana* drugs in *twak vikaras***

*Asanadi Gana*, a combination of 23 medications, successfully manages a number of skin conditions while having minimal adverse effects. The activities of these plants are attributed to the presence of alkaloids, terpenoids, polyphenols, glycosides and other active ingredients. For these plant extracts, various potential mechanisms of action have been predicted.

**Antioxidant property-** The two primary categories of antioxidant phytochemicals are carotenoids and polyphenols, and these two groups are largely responsible for the antioxidant capabilities of plants. The primary antioxidant phytochemicals include anthocyanins, ellagitannin, carotene, quercetin, myricetin, and kaempferol. The subclasses of flavonoids include flavanols, flavones, flavanols, flavanones, anthocyanidins, and iso-flavonoids.<sup>[74]</sup> The majority of phytochemical antioxidants have been proven to have anti-inflammatory properties as well. Resveratrol, anthocyanins, and curcumin are phytochemicals that can reduce inflammation by increasing cytokine production, decreasing prostaglandin production, and nuclear factor-B activity.<sup>[75]</sup> Additionally, resveratrol, catechins, and curcumin all had neuroprotective properties. Curcumin therapy also decreased elevated acetylcholinesterase in mice while reducing oxidative stress levels in a dose-dependent manner.<sup>[72]</sup> There may be a direct correlation between total phenolic content and total antioxidant activity in phytochemical extracts of various plants. Parts with higher overall phenolic contents exhibited stronger antioxidant properties.

**Anti-inflammatory property-** Another significant element that contributes to the aetiology of many chronic diseases is chronic inflammation. Anti-inflammatory properties are found in the majority of antioxidant phytochemicals. Resveratrol, anthocyanins, and curcumin are phytochemicals that can reduce inflammation reducing prostaglandin production and nuclear factor-B activity, inhibiting enzymes, and increasing cytokine production.

The therapeutic properties of quercetin, which include anti-inflammatory, antiviral, antibacterial, and anti-tumour activities, are remarkable. The flavanol is a useful antioxidant to take into account due to its capacity for scavenging free radicals, binding of transition metal ions, and prevention of lipid peroxidation.<sup>[74]</sup>

**Wound healing property-** By boosting the formation of fibronectin and collagen, quercetin is also useful in promoting wound healing. Additionally, studies have indicated that quercetin aids in the repair of nerve tissue damage caused by skin wounds, which may hasten the healing of wounds. Comparatively to the control group, the collagenous matrix treated animal treated with quercetin demonstrated improved wound healing with increased cell proliferation. Quercetin-incorporated collagen matrix may also be a novel dressing for cutaneous wound healing, according to studies. According to a report, the naturally occurring antifibrotic substance quercetin reduces the production of scars.<sup>[76]</sup>

The pathophysiology of many chronic diseases is caused by the overproduction of oxidants and chronic inflammation. Antioxidant phytochemicals are therefore one of the most promising treatments for chronic illnesses. They have a wide range of biological effects and health advantages, including anti-inflammatory, anti-cancer, anti-aging, and protective effects against many chronic conditions including psoriasis.<sup>[74]</sup>

Exogenous therapies include retinoids, topical steroids, vitamin D derivatives, and UV therapy; systemic therapies include biologics like secukinumab, adalimumab, or ustekinumab, methotrexate, and anti-inflammatory medicines like cyclosporine. The aforementioned therapies' increased efficacy and safety requirements do not ensure their effectiveness, affordability, or patient compliance. Innovative treatments are urgently needed because of the numerous negative side effects of present ones, such as skin shrinkage, sensitivity to sunlight, skin irritations, increased risk of infection, carcinogenesis, immune system suppression, and organ toxicity.

Due to their inexpensive cost, low number of side effects, and numerous biochemical actions, these Phyto-therapeutics could provide patients with benefits while also increasing patient compliance.<sup>[77]</sup>

## CONCLUSION

Ayurveda includes description of a variety of dermatological conditions, including their classification, etio-pathogenesis, clinical manifestations, prevention, and treatment under the heading of kushtha. Psoriasis, a chronic skin condition which can be compared to kushtha, causes high levels of distress and numerous related psychiatric illnesses, such as anxiety and depression. There is a definite need for treatments and medications that provide long-lasting relief or that can effectively treat it.<sup>[78]</sup> The review highlights the therapeutic potential of Asanadi Gana in treating Kushtha, with its ingredients exhibiting significant anti-

inflammatory, antimicrobial, and wound-healing properties. Integrating these traditional remedies with modern treatments could offer new avenues for managing chronic skin conditions.

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