

**A CRITICAL REVIEW ON PATOLADI CHURNA WITH ITS SKIN BENEFITING PROPERTIES W.R.T. KIKKISA (STRIAE GRAVIDARUM)****Dr. Shubhada C. Lekurwale, \*Dr. Sudhindra A. N. and Dr. Aditya Samant**

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**ABSTRACT**

**Introduction:** In all Samhitas Kushtha Chikitsa is described with single or compound herbal drugs. Patoladi Churna is one such polyherbal churna formulation indicated in treatment of various skin ailments. **Aim and Objectives:** To review Patoladi Churna w.s.r. to its effect on Kikkisa. **Material and Method:** Relevant references were reviewed with respect to Patoladi Churna described in Samhitas and various Ayurveda texts such as Brihatrayee, Laghutrayee Bhaishajyaratnavali etc. All the references were collected and reviewed thoroughly. **Observation and Results:** Total 5 references with the name Patoladi Churna and Patoladi Gana are recorded in various Samhitas and Ayurveda texts indicated in various diseases. Total 5 references of Patoladi Churna with different ingredients were found in the texts among them Patoladi Churna from Ashtang Hridaya and its action on Kikkisa is being thoroughly reviewed here. Ingredients of Patoladi Churna- Patola - Trichosanthus dioica, Nimba - Azadiracta indica, Manjistha - Rubia cordifolia, Tulsi Beeja - Ocimum tenuiflorum. **Conclusion:** Based on Pharmacological properties and Experimental studies conducted on individual drugs proved that Patoladi Churna is a effective in skin disorders mainly on Kikkisa and can be used safely for treating various skin conditions.

**KEYWORDS:** Kushtha, Patoladi churna, Kikkisa, Striae Gravidarum.**INTRODUCTION**

Panchavidha kashaya kalpana represents the basic preparations upon which, many pharmaceutical method were developed for various medicine preparation to compete with need of all time availability, palatability, longer shelf life and efficacy. Among them, Churna (herbal powder) is one of the most accepted classical dosage form of Ayurvedic formulation advocated in various disease conditions. Churna is the fine powder of a completely dry drug, which is filtered through a clean cloth.<sup>[1]</sup>

In all Texts of Ayurveda, Chikitsa of skin ailment is described with single or compound herbal drugs which includes various forms of formulations such as Kwatha, Churna, Arishta, Vati etc. Patoladi Churna is one such compound powder formulation described in Ayurveda. This formulation contains fine powder of Patola (trichosanthus dioica), Nimba (azadiracta indica), Manjistha (rubia cordifolia), and Tulsi Beeja (ocimum tenuiflorum) in equal proportion and indicated in the treatment of Kikkisa (striae gravidarum). There are many other references available where Patoladi Churna is described for treating skin ailment and various other conditions such as fever, poisoning, loss of appetite, jaundice, ascitis, anemia and inflammatory conditions.

Hence attempt is made in this paper to review of Patoladi Churna described in various Samhitas and Ayurveda texts w.s.r. to its skin benefiting properties.

**MATERIAL AND METHOD**

Relevant references were reviewed with respect to Patoladi Churna described in Samhitas such as Brihatrayee and Laghutrayee and various Ayurveda texts such as Yogratnakar, Bhaishajya Ratnavali etc. Published research papers related to pre clinical and clinical studies showing efficacy of Patoladi Churna and individual drugs were searched in various skin ailments. References of Patoladi Gana were also found during literary search.

**OBSERVATION AND RESULTS**

During the literary search three references were identified with the name Patoladi Churna and two were found as Patoladi Gana. The very first reference of Patoladi Churna is found described in Asthang Hridaya, Sharira Sthana Garbhavakrantisharir and second reference was found in Sutrasthana Shodhanadigana Sangraha as Patoladi Gana, also it is described in other Samhitas and Ayurveda texts such as Charak Samhita, Astanga Hridaya, Astanga Sangraha, Yogratnakara. The ingredients and indications are compiled in table no 1.

Table No. 1

S.N.	Reference	Name	Ingredients	Indications
1.	Asthang Hrudaya Sharir Sthana <sup>[5]</sup>	Patoladi Churna	Patola, nimbi, manjistha, tulsi beej	Kikkisa
2.	Asthang Hrudaya Sutra Sthana <sup>[4]</sup>	Patoladi Gana	Patola, kutki, chandan, murva, guduchi, patha	Kushta, jwara, visha, vaman, arochak, kamla.
3.	Asthang Sangraha <sup>[3]</sup>	Patoladi Gana	Patola, kutki, chandan, madhustrava, guduchi, patha	Kaphapitta pradhan vyadhi, kustha, jwara, visha, vaman, arochak, kamla
4.	Charak Samhita <sup>[2]</sup>	Patolmuladya Churna	Patolmula, vidang, triphala, kampilak, nalini, trivrut	Udara, kamla, pandu, shotha
5.	Yogratnakar <sup>[6]</sup>	Patoladi Churna	Patola, nisha, vidanga, triphala, kampilak, nalini, trivrut	All udara rogas, jalodar, kamla, pandu, shotha.

Table No. 2: Rasapanchak of Patoladi Churna (Ashtang Hridaya - Garbhavkrantisharir).

S.N.	Ingredient	Rasa	Guna	Veerya	Vipaka	Karma
1.	Patola(trichosanthes dioica) <sup>[7]</sup>	Tikta	Snigdha, ushna, laghu	Ushna	Katu	Hrudya, veeryavardhak, sukhavirechak, kaphapittahara, deepan, pachan, balya
2.	Nimba (azadiracta indica) <sup>[8]</sup>	Tikta	Laghu, sheeta	Sheeta	Katu	Grahi, tvakdoshhara, krumighna, rasayan, jwaraghna
3.	Manjistha (rubia cordifolia) <sup>[9]</sup>	Madhura, tikta, kashaya	Guru	Ushna	Katu	Raktashodhak, grahi, garbha sankochak, shothaghna, tvakdoshahara, vedanasthapana
4.	Tulsi Beeja (ocimum tenuiflorum) <sup>[10]</sup>	Katu, tikta	Ushna, ruksha	Ushna	Katu	Hrudya, kaphavataharaman, sheetahara, vatahara, swedajanan, deepan, krumighna.

#### Studies on skin promoting factors of Trichosanthes dioica<sup>[11]</sup>

The antioxidant activity in fruits of Trichosanthes dioica, followed the phosphomolybdenum method according to procedure of (Prieto et al., 1999). The assay is based on the reduction of Mo (VI) – Mo(V) by the extract and subsequent formation of a green phosphate/Mo(V) complex at acid pH. The ethanolic extracts of Trichosanthes dioica, showed significant antioxidant, DPPH radical scavenging activity and Nitric oxide scavenging activity. Phytochemical analysis showed that the extract contained alkaloids, glycosides, phenolic compounds, tannins, steroids and flavanoids. Flavanoids, tannins, phenolic compounds, and glycosides have all been associated with anti-inflammatory, antimicrobial and antioxidant activities.

#### Studies on skin promoting factors of Azadiracta indica<sup>[12]</sup>

Antioxidant Activity It is known that ROS and free radicals are involved in cancer, DNA damage and even aging, and the addition of antioxidants in dermocosmetics can minimize these effects. Thus, some extracts that contained flavonoids with known antioxidant effects and other extracts derived from A. indica flowers and young leaves showed strong antioxidant potential. Moreover, the aqueous fraction of the Neem bark had greater antioxidant activity than the leaf extract because of the higher concentration of phenolic compounds.

Experimental study: The topical application of A. indica leaf ethanolic extract was tested on hairless mice

exposed to UVB irradiation to prevent the formation of wrinkles. To carry out this study, dry Neemleaves (10 g) were used, which were pulverized and extracted three times with 1 L of 50% ethanol over 24 hours at room temperature. Then, the extract was analyzed via liquid chromatography, using methanol as the mobile phase. Moreover, a significant amount of rutin was found in the dried leaf extract, showing a high capacity to eliminate free radicals, which indicated the antioxidant activity. Finally, it was found that mice exposed to UVB irradiation and received the treatment with A. indica leaf extract had less wrinkle formation than the other groups, indicating a possible antiaging effect of the A. indica extracts.

#### Studies on skin promoting factors of Rubia cordifolia<sup>[13]</sup>

Anti-inflammatory activity - Aqueous extract in rats with carrageenan paw edema in a dose dependent manner which is comparable to that of phenylbutazone. It also inhibits the lipooxygenase enzyme pathway which catalyses the production of various inflammatory mediators such as leukotrienes that are involved in asthma, arthritis and other inflammatory disorders and the production of cumene hydroperoxides. A formulation of Munjisthin and purpurin from cell culture manifested to have an anti-proliferative action during rapid development of a model oedema.

Anti-microbial activity - According to Basu et al. the aqueous extract is active against Bacillus subtilis and Staphylococcus aureus compared with streptomycin and penicillin G. The ethanolic whole plant extract also

showed same result. Rubiacordone A reported to have considerable antimicrobial activity against Gram +ve bacteria like *Bacillus subtilis*, *Streptococcus faecalis* and *Bacillus cereus*.

**Antioxidant property** – The study of *in vivo* antioxidant activity and its influence on ethanol induced immune suppression showed that the concurrent daily administration prevent the decrease of humoral and cell mediated immune response, phagocytosis index, leukocyte count etc. which were comparable with that of combination of vitamin E and C.

#### **Studies on skin promoting factors of *Ocimum tenuiflorum***<sup>[14]</sup>

*Ocimum tenuiflorum* Linn., has been reported for several biological beneficial activities and thus potential for treatment of various health conditions. However, the biological activities related to skin anti-ageing, including anti-collagenase, anti-elastase, and anti-hyaluronidase activities, have not been reported so far. Therefore, this study aimed to investigate the skin anti-ageing activity of *O. sanctum* extracts. The aerial part of *O. sanctum* was extracted by fractionated extraction using *n*-hexane, ethyl acetate, and ethanol, respectively. Rosmarinic acid and total phenolic content was investigated. Antioxidant activity was determined by *in vitro* methods.

Anti-inflammatory activity was investigated according to the inhibition of nuclear factor kappa B (NF-κB) expression and interleukin-6 (IL-6) secretion. The anti-ageing activity was investigated by *in vitro* inhibition of collagenase, elastase, and hyaluronidase activities. Ethanolic extract of *O. sanctum*, which had the highest yield (6.5%), contained the highest rosmarinic acid (19.3% w/w) and the highest total phenolic content  $11(50.2 \pm 0.6$  mg gallic acid/g sample). Additionally, it possessed the most potent Rosmarinic acid was found as the major compound responsible for those anti-ageing activities. Therefore, the ethanolic extract of *O. sanctum* is an attractive natural source of anti-skin ageing ingredient for further applications in skin ailments.

#### **DISCUSSION**

Total five references were identified with the name Patoladi Churna among them two were found as Patoladi Gana. All the reviewed Samhita has different ingredients of Patoladi Churna and indications are varied accordingly. Among this references, Patoladi Churna found described in Asthang Hridaya. This formulation contains fine powder of Patola (*Trichosanthus dioica*), Nimba (*Azadiracta indica*), Manjistha (*Rubia cordifolia*), and Tulsi Beej (*Ocimum tenuiflorum*) in equal proportion and indicated in the treatment of Kikkisa (striae gravidarum).

Kikkisa is a skin ailment occurs during 7<sup>th</sup> month of pregnancy. because of enlarged uterus due to growing fetus and produce stretching of abdominal skin. because

of stretching, linear lines appears over skin of abdomen, breasts and thighs known as kikkisa. This is also characterized by vidaha (burning sensation) and kandu.

Kikkisa is correlated with striae gravidarum in modern science. it is first present as flat, pink-to-red bands that become raised, longer, wider, and violet-red. Over appearing parallel to skin tension lines as scar-like, wrinkled, white, and atrophic marks.<sup>[15]</sup> Striae gravidarum can cause itching, burning, and discomfort and typically present on the breasts, abdomen, hips, and thighs. The etiopathogenesis involves increased mechanic stress on connective tissue. Ultimately, abnormalities in elastic fibers, collagen fibrils, and other extracellular membrane components are believed to underlie the pathogenesis of striae gravidarum.

The etiological relevance suggests that the striae gravidarum can be managed by topical drug therapies. Local application of Patoladi Churna include stimulation of collagen production and fibroblastic activity for improvement of tissue strength, reduction in wrinkling and roughness of skin (to improve texture), improving cell proliferation, exerting anti-inflammatory effect, increasing cell elasticity as well as vascularity, and hyperpigmentation. Though a number of therapeutic modalities are available, none has been reported to be effective in complete eradication of striae gravidarum.

We hypothesize that a combination of this herbal formulation with any kind of oil will reduce stretch marks due to their effects on a number of dermatological parameters can be used in the management of striae gravidarum.

clarification of the proposed hypothesis The available scientific evidences indicate that the efficacy of ingredients of Patoladi Churna in striae gravidarum is attributed to their anti-inflammatory and antioxidant properties. Two commercially available topical formulations i.e., SilDerm™ and Liforma claimed to be effective in management of striae gravidarum also contain anti-inflammatory ingredients.<sup>[16]</sup> Improvement in collagen content by certain phytochemicals is the other mechanism reported to be useful in management of the striae gravidarum.

As *Rubia cordifolia* and *Trichosanthus dioica* possesses strong anti-inflammatory, antioxidant, and vascularity induction properties, it is likely to be effective in the management of striae gravidarum.

*Ocimum t.* posses biological activities related to skin anti-ageing, including anti-collagenase, anti-elastase, and anti-hyaluronidase activities, and all drugs in this formulation have a strong anti-oxidant and anti-aging properties and due to potent anti-oxidant property, Patoladi churna is expected to inhibit/reduce the ROS induced fragmentation of collagen, thereby, being a potential molecule for the prophylaxis and treatment of

striae gravidarum. The potent anti-inflammatory, immunomodulatory, and anti-oxidant properties of Patoladi Churna make them a strong contender for the topical treatment of striae gravidarum.

#### Probable mode of action of Patoladi Churna in Kikkisa

Relief of symptoms in Kikkisa On basis of Rasa Panchak, Medicinal properties and Pharmacological action. like Vidah: Vidah is primary complain of patient due to tearing of fibres and vitiation of Pitta dosha mainly occur during second trimester of pregnancy.<sup>[17]</sup> Pittashamak property of Manjistha, Nimba along with Tikta and Kashaya Rasa and Madhura vipak causes Daha Shaman.

Kandu: Kandu is the symptom of Kapha mainly but in Kikkisa it is due to dryness of skin and Vata dosha is the main reason behind it. Tearing of fibres also alleviates Vata dosha.

Madhura rasa of Manjistha and Snigdha guna of Patola pacifies Vata dosha relieving Kandu. Kandughana action is performed by Tikta rasa which is predominant in all dravyas.

Vaivarnya: Manjistha is included under Varnya Dashemani. Ushna veerya of Patola, Tulsi, Manjistha accelerate the action of Bhrajak Pitta (Agni), which is responsible for skin colour and luster. Due to each drug having Tikta Rasa and Katu Vipaka have Kushthaghna Property and Kashaya Rasa has Varnya action.

Vairupya: Rakta prasadan by Tikta rasa dominant all dravyas along with other factors contributes to nature the of skin and maintain its proper lusture and texture and prevent the Vairupya caused due to tearing of skin.

Mode of Absorption Cutaneous Biotransformation for Local action on skin Agni situated in skin in the form of Bhrajak pitta facilitates Pachana of active principles of drug for absorption and pacify the provoked Doshas and relieves local symptom like Vidah, Kandu and Vaivarnya by breaking pathogenesis.

As in etiopathogenesis of Kikkisa, Pitta is mainly vitiated dosha along with Vata and Kapha and Bhrajak pitta works on skin and responsible for complexion and color of skin.

Properties of Patoladi churna described in literature indicates that it can be used in pitta kaphaj vyadhi specially skin related diseases.

The properties like Vishagna, Varnaya, Ropana, Sandhaniya, Twachya and Pittashamak action promotes the pigmentation of skin and facilitate the skin tonic action. Contents of Patoladi Churna facilitates to penetrate into the cellular level of tissues with help of Agni and Soma helps to soak up the toxins and neutralize

them. It is a formulation with multiple activities helps in prevention of itching, burning and scar formation and acts as revitalizing agent for depigmentation of skin. So it can be evolved as a drug which will be effective in reducing all types of stretch marks and healing and maintaining the pigmentation level, So preventing the scar formation and can be used in treatment of Kikkisa.

#### CONCLUSION

Contents of Patoladi Churna are used since ancient time as a skin vitalizing and promotes pigmentation of skin. they acts as a skin protective and healing herbs by virtue of wound Healing, antimicrobial, antifungal and antibacterial and antioxidant properties which is revealed by this review.

All therapeutic use of Patoladi Churna for skin ailments can be proved on the basis of available references for Varnya, Vishaghana, Krimighana and Kusthaghana action from various literature. Kikkisa or Striae gravidarum is burning problem in 90% pregnant women in modern era and vitiated Pitta dosha along with physiological changes in skin due to overstretching of skin is responsible mainly. Women are more conscious towards their appearance leading more consumption of Cosmeceutical products in day to day life.

Patoladi Churna promotes skin pigmentation in stretch marks, prevents itching and other skin infection and promotes healing process of skin. So it can be raised as important ingredient in development of herbal cosmeceutical product for prevention of Kikkisa (striae gravidarum).

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