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**Kikkisa and Striae Gravidarum: Ayurvedic Perspectives on Pathophysiology and Management**

Dr. Anju\* Dr. B. Pushpalatha\*\* Dr. K. Bharathi\*\*\*

\* PG Scholar, Department of Prasuti Tantra evam Stree Roga, National Institute of Ayurveda, Jaipur,  
<https://orcid.org/0009-0003-2046-5649>.

\*\*Professor, Department of Prasuti Tantra evam Stree Roga, National Institute of Ayurveda, Jaipur.

\*\*\*Professor & HOD, Department of Prasuti Tantra evam Stree Roga, National Institute of Ayurveda, Jaipur,

Abstract

ABSTRACT

Introduction

Pregnancy induces various physiological changes, among which dermatological alterations, including *Kikkisa* (striae gravidarum), are common. Striae gravidarum, often regarded as stretch marks, typically develop during the second and third trimesters and are a prominent cosmetic concern. This study explores *Kikkisa* in the context of Ayurveda and its association with striae gravidarum.

Methods

A literature review of classical Ayurvedic texts, including *Garbhini Paricharya*, was conducted to identify traditional therapeutic approaches for managing *Kikkisa*. Studies on the pathophysiology of striae gravidarum, including hormonal changes and skin tension, were reviewed to establish a correlation with Ayurvedic practices.

Results

Striae gravidarum, affecting 70-90% of pregnant women globally, present as linear, atrophic dermal lesions on the abdomen, groin, and breasts. Ayurvedic texts describe *Kikkisa* with symptoms like burning sensation (*Vidaha*), skin discoloration (*Vaivarnya*), itching (*Kandu*), and dermal tearing (*Charma Vidarana*). Ayurvedic management strategies, such as topical herbal applications (*Lepa*), medicated decoction showers (*Parisheka*), oil massage (*Taila Abhyanga*), and internal herbal treatments

(*Abhyantara Chikitsa*), offer promising therapeutic options.

## Discussion


While striae gravidarum are benign, their psychological impact on body image and emotional well-being is significant. Ayurvedic therapies provide holistic management, addressing both the physical and emotional effects of *Kikkisa*. Further clinical studies are needed to validate the efficacy of these treatments in modern practice.

**Keywords:** *Kikkisa*, Striae gravidarum, *Lepa*, *Taila Abhyanga*, *Parisheka*, *Abhyantara Chikitsa*.

### Address for Correspondence:

Dr. Anju, PG Scholar, Department of Prasuti Tantra evam Stree Roga, National Institute of Ayurveda, Jaipur, Email Id: [anjushrawan29@gmail.com](mailto:anjushrawan29@gmail.com)

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## Introduction

*Kikkisa* is a clinical condition described in Ayurvedic literature, typically manifesting during the seventh month of gestation [3]. It presents with symptoms such as *daha* (burning), *kandu* (itching), *twak bheda* (skin tearing), and *vaivarnya* (skin discoloration), resulting from the vitiation of the tridoshas—*vata*, *pitta*, and *kapha*. Classified as a *Garbhini Vyadhi* (pregnancy-related disorder), *Kikkisa* can be correlated with *striae gravidarum* in modern medicine, which commonly appears during the late second to early third trimester of pregnancy. According to *Arunadatta*, symptoms of *Kikkisa* include burning sensations in the palms and soles, along with circular or linear marks on the hips, breasts, abdomen, and groin. *Bhela Samhita* explains that during the seventh month of pregnancy, the aggravated *Vata*, *Pitta*, and *Kapha* doshas rise toward the chest, leading to itching and burning, which contribute to the development of *Kikkisa*.

## Overview

*Indu* describes *Kikkisa* as the formation of linear striae, or *Rekha Swaroopa Twaka Sankoca* (skin contraction in the form of lines) [2]. *Chakrapani* characterizes it as *Charma Vidaranam* (skin tearing) [3], which results from the stretching of the skin and underlying connective tissue as the uterus expands within the abdominal cavity. *Arunadatta* defines *Kikkisa* as *Vishesha Rekha Aakar Vali* (distinct linear striae)

occurring on the *uru* (thighs), *stana* (breasts), and *udara* (abdomen), resembling *Shukairiv Purnata* [4] (elevated, barley-like structures on the skin).

## Samprapti (Pathogenesis)

Women describe experiencing a burning sensation during the seventh month of pregnancy, often attributed to *Keshotpatti*, which leads to *Kikkisa*. However, according to *Atreya*, the growing fetus exerts pressure on the *garbhashaya*, causing an upward displacement of the *tridosha*—*vata*, *pitta*, and *kapha*. These displaced doshas then affect the *ura* (thoracic region, as per *Charaka*) or *hridaya* (as per *Vagbhata*) [5], resulting in *daha* and *kandu* on areas such as the *udara*, *stana*, and *uru*.

## Roopa (Symptoms) [6]

- *Kandu* (Itching)
- *Daha* (Burning)
- *Twak Bheda* (Skin Tearing)
- *Rekha Swaroop Twak Sankoca* (Skin Contraction in Lines)
- *Vaivarnya* (Skin Discoloration)

## Cikitsa (Treatment) [7]

### 2. Abhyantara (Internal Treatment)

1. **Navaneeta:** When medicated with drugs from the *Madhura* group, should be administered to pregnant women regularly in a dose equivalent to *Panitala Matra*. Alternatively, butter infused with a decoction of the stem bark of *Badari* along with other *Madhura* group drugs should also be

given.

### 3. Bahya (External Treatment)

4. **Lepa (Topical Applications):** Any one of the following should be rubbed over the abdomen:

- Lepa of *Chandana* and *Mrunala* or *Chandana* and *Ushira*.
- Powdered stem bark of *Sirisa*, flowers of *Dhataki*, *Sarsapa*, and *Madhuyasti*.
- Pestled bark of *Kutaja*, seeds of *Arjaka*, *Musta*, and *Haridra*.
- Pestled leaves of *Nimba*, *Badari*, and *Surasa* with *Manjistha*.
- *Triphala* pestled with the blood of *Prsata* or *Ena* deer and rabbit or only *Prsata* deer or else *Triphala*.

### 5. Parisheka (Therapeutic Pouring):

- Water infused with *Punarnava*, flowers of *Malati* and *Madhuka*, and blended with the blood of deer and rabbit is recommended for therapeutic use.
- The abdomen and breasts should be irrigated using a decoction prepared from *Patola*, *Nimba*, *Manjistha*, and *Surasa* to soothe and protect the skin.
- Repeated cleansing of the affected areas should be performed with a decoction of *Daruharidra* and *Madhuka* to maintain skin health and manage symptoms of *Kikkisa*.

### 6. Taila (Oil):

- Oil prepared with pestled leaves of *Karavira*, either alone or combined with *Karanja*.

### 7. Pathya (Dietary and Lifestyle Recommendations)

1. The diet should predominantly consist of *madhura rasa* (sweet taste).
2. Foods should be selected for their *vata-shamaka* (vata-reducing) properties.
3. The diet should be either free from salt and fat or contain them in minimal amounts.
4. Light, easily digestible meals should be consumed frequently in small portions, followed by a small quantity of water.

### Striae Gravidarum

*Striae gravidarum* are linear, slightly depressed marks of varying length and width that appear during pregnancy. They are most commonly located on the lower abdominal wall, beneath the umbilicus, and may also occur on the thighs and breasts. These stretch marks are a form of scar tissue that forms in the deeper layers of the skin [8].

### 8. Causes

#### 1. Maternal Factors:

- **Genetics** (Family History): If a mother or sister had striae, the likelihood increases.
- **Age**: Younger pregnant women are more prone due to firmer skin.

- **Body Mass Index (BMI):** Higher BMI increases the risk [9].

## 2. Pregnancy-Related Factors:

- **Rapid Weight Gain:** Excessive weight gain stretches the skin beyond its elasticity.
- **Multiple Pregnancies:** Twin or multiple pregnancies increase the risk due to excessive stretching.
- **Fetal Size:** Large babies increase abdominal skin stretching.
- **Polyhydramnios:** An excessive accumulation of amniotic fluid can lead to rapid distention of the abdomen.

## 3. Hormonal Factors:

- **Increased Cortisol Levels:** Weakens collagen and reduces skin elasticity.
- **Elevated Estrogen & Relaxin:** Affect skin fiber integrity, making it prone to tearing.
- **Increased MSH Level:** Changes in melanocyte-stimulating hormone.
- **Increased Aldosterone Production:** Occurs during pregnancy [10].

## 4. Skin Type & Condition:

- **Low Collagen Content:** Less collagen reduces skin elasticity.
- **Dry Skin:** Lacks moisture, making it less flexible.

- **Fair Skin:** Some studies suggest lighter skin tones may be more prone.

## 9. Other Causes:

- Poor Nutrition
- Fitzpatrick skin types I and IV
- Socioeconomic Status (Lower SES)
- Lower Education Level

## 10. Distribution

1. Abdomen
2. Thighs
3. Hips
4. Buttocks
5. Breasts

## 11. Clinical Features

### Symptoms:

1. Burning
2. Itching

### Signs:

1. Pink, red, discolored, black, blue, or purple streaks.

## 12. Prevention

- Controlled weight gain during pregnancy [11].
- Olive oil massage may reduce their formation [12].
- Trofolastin cream with *Centella asiatica* extract is effective.
- Alphastria and Verum creams with hyaluronic acid and vitamins improve skin elasticity.

## Management

Treatment for *striae gravidarum* should begin in the early stages of pregnancy before

the striae mature and permanent changes occur. The primary treatment goals include enhancing dermal collagen production, improving vascularity (especially in *striae rubrae*), and addressing skin wrinkling and roughness.

### 1 Topical Treatment

Tretinoin cream, combined with a 20% glycolic acid + 10% ascorbic acid formulation, has shown improvements in the appearance of *striae gravidarum*. Daily use of tretinoin (0.05% and 0.1%) for 3-7 months demonstrated up to a 47% improvement, with lesion length reduced by 20% and width by 23%. Glycolic acid with ascorbic acid or tretinoin also improves the appearance of *striae*. Tretinoin is believed to boost elastin and epidermal thickness while reducing dermal thickness.

### 2 Laser Treatment

1. The **1540-nm non-ablative fractional laser** has shown clinical improvement in *striae gravidarum*, with results ranging from 1% to 24%, and noticeable changes typically observed within three months post-treatment.
2. For non-pregnancy-related *striae distensae*, both fractional and non-fractional laser therapies have been used, yielding varying degrees of success.
3. Histological analysis revealed increased collagen and elastic fiber production, with the procedure

generally being safe and well-tolerated.

4. **Ablative CO<sub>2</sub> lasers** demonstrated significant improvement—ranging from 50% to 75%—particularly in mature *striae* (*striae alba*).
5. **Pulsed dye lasers** improve skin texture and are effective in treating *striae rubra* by reducing redness (erythema).
6. The **Nd:YAG vascular laser** showed marked efficacy, with improvement rates reaching 70% or higher.

### 3 Light Treatments

Light-based therapies, including **intense pulsed light (IPL)**, **ultraviolet (UV) light**, and **infrared light**, have been utilized in the management of non-gestational *striae distensae*.

- **IPL therapy** can provide moderate improvement in the appearance of *striae*; however, side effects like persistent erythema and post-inflammatory hyperpigmentation may occur.
- **UV light therapy**, particularly a combination of UV-B and UV-A, has demonstrated consistent repigmentation of *striae alba*, though ongoing maintenance sessions are necessary to sustain results.
- **Infrared light therapy** within the 800 to 1800 nm range has shown 25–50% improvement in *striae alba* after as



few as four treatment sessions.

## Discussion

Ayurvedic formulations recommended for the management of *Kikkisa* offer a holistic approach to treating the symptoms and underlying pathophysiology of the condition. These formulations possess therapeutic properties such as *kandughna* (anti-itching), *dahaprashamana* (anti-burning), *varnya* (complexion-improving), and *vranaropaka* (wound-healing), which help alleviate common symptoms like itching, burning sensations, and skin discoloration.

While *kandu* (itching) is generally associated with *Kapha* dosha in Ayurveda, in the case of *Kikkisa*, it manifests due to skin dryness and lack of moisture, indicating the involvement of *Vata* dosha. This provides a crucial insight into the holistic treatment approach for *Kikkisa*. The *Vata-shamaka* (Vata-reducing) properties of medicated oils and butters, combined with the *snigdha* (unctuous) qualities, provide the necessary moisture to alleviate skin dryness and reduce itching. The use of *tikta rasa* (bitter-tasting substances) further aids in the *kandughna* effect by balancing the vitiated doshas, thus providing relief from itching.

In addition, *Sandhaniya dravyas* (herbs promoting tissue healing) are integral in repairing the skin by addressing *charma vidarana* (skin tearing). These herbs help in improving collagen production and stimulate the repair of dermal layers, thus aiding in the

healing process of the stretch marks. Furthermore, *tikta rasa* substances are thought to pacify *Pitta* at the site of the lesion, reducing *vidaha* (burning sensation). This suggests a dual mechanism of action: not only soothing the skin but also preventing further damage and promoting healing at the site of the lesion.

By incorporating Ayurvedic therapies such as *Lepa* (topical herbal applications), *Parisheka* (therapeutic pouring of medicated decoctions), *Taila Abhyanga* (oil massage), and *Abhyantara Chikitsa* (internal medicine), it is possible to both prevent and manage the progression of *Kikkisa*. These therapies not only address the physical symptoms of the condition but also help in managing the emotional and psychological aspects, as the appearance of stretch marks can often lead to body image concerns. The Ayurvedic approach to managing *Kikkisa* offers a natural, safe, and holistic method of care, complementing modern treatments.

Moreover, *Kikkisa* can be effectively managed using these Ayurvedic interventions to prevent its onset and mitigate its symptoms. Traditional Ayurvedic interventions for skin disorders are based on balancing the doshas and promoting the body's natural healing mechanisms. This is especially important for pregnant women, where safety and the minimization of side effects are paramount. Ayurvedic herbs and treatments offer a gentler alternative to some



of the more invasive options available in modern medicine, like laser treatments, making them suitable for use during pregnancy.

### Conclusion

In this study, *Kikkisa* has been correlated with *striae gravidarum* of pregnancy based on its clinical signs and symptoms. Both Ayurvedic and modern scientific treatments for *Kikkisa* have been explored, revealing the efficacy of a combined approach in managing this condition. The integration of topical treatments like tretinoin, glycolic acid, and ascorbic acid, as well as advanced laser therapies, complements the Ayurvedic strategies, which emphasize holistic care,

*dosha* balance, and skin healing. These formulations or medicines can be used both therapeutically and prophylactically to prevent the formation or progression of *Kikkisa*.

In conclusion, a multidisciplinary approach combining the best of Ayurvedic and modern scientific knowledge can provide comprehensive care for *Kikkisa* and *striae gravidarum*, offering pregnant women safe, effective, and holistic treatment options. Future studies and clinical trials are essential to further validate the efficacy of Ayurvedic treatments in the management of *Kikkisa* and to explore their potential in contemporary medical practice.

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