



## A Clinical Trial to Evaluate the Efficacy of Ayurvedic Lepa Containing Manjistha and Kumari in Stretch Marks (Striae Gravidarum)

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### KEYWORDS

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### ABSTRACT:

**Background:** Striae gravidarum (stretch marks) represent a common skin disease of pregnant women due to the stretch of the skin and changes of the hormonal background. On the one hand, the traditional methods of treatment have certain risk to be taken during pregnancy; on the other hand, Ayurveda provides options that are more secure. Manjistha (*Rubia cordifolia*) and Kumari (*Aloe vera*) are Ayurvedic herbs which are known to heal the skin, exhibit anti-inflammatory and regenerative actions.

**Objective:** To determine clinical effectiveness and safety of Ayurvedic topical lepa (paste) of Manjistha and Kumari in striae gravidarum during pregnancy.

**Methods:** The study selected 30 pregnant women with evident striae gravidarum where a single arm open-label clinical trial was done within 30 days. Manjistha Kumari, an equal ratio mixture of lepa, was applied daily, 30 minutes on the affected parts. Day 0, 15, and 30 objective measurements of length, breadth and area of striae were done. Itching, discoloration and roughness were examined on a Visual Analog Scale (VAS) related to subjective symptoms. Statistical analysis of data was provided according to t-tests of the paired cases and Wilcoxon signed-rank test ( $p < 0.05$  was considered significant).

**Results:** There are 30 respondents that participated in the study but 28 did complete it. There was a dramatic change in respective parameter of all objectives with length reduced at 29.3%, breadth at 37.2, area at 55.6 and all to  $p < 0.001$ . The dimensional subjective symptoms also had an impressive improvement; itching decreased (71.0%), discoloration (60.9%), and roughness (60.0%,  $p < 0.01$ ). This implied an excellent tolerability because there were no adverse effects reported.

**Conclusion:** The Ayurvedic decoction Manjistha-Kumari lepa was found to be highly effective in the treatment of stretch marks of women in pregnancy by decreasing their size and pain. Herbal paste was non-problematic and provides an encouraging, safe, and effectual natural therapy of



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dealing with striae gravidarum. It is suggested that further large-scale studies should be carried out in order to generalize the results.

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## 1. Introduction

Stretch marks, medically known as striae gravidarum, are a common dermatological condition, especially in pregnant women, which can result from the rapid stretch of skin that occurs during pregnancy. The formation of striae is associated with hormonal changes, mechanical stress, and the deterioration of collagen and elastin fibers in the dermis. Although medically harmless, they are a major cosmetic issue, and often manifest as low self-esteem and body image issues in postpartum women.

Contemporary remedies for striae gravidarum, which include laser treatment, retinoid creams, and chemical peels have been shown not to be very effective and possibly dangerous during pregnancy or lactation. This has fueled interest in safe, natural, and traditional options using Ayurvedic medicine, India's traditional health care system. Two Ayurvedic herbs that have been studied the most for skin conditions are Manjistha (*Rubia cordifolia*) and Kumari (Aloe vera). Both of which has been regarded as regenerative, anti-inflammatory, and antioxidant [1, 6, 11]. Manjistha, a thoroughly documented Ayurvedic herb, is known for its blood-purifying and skin-rejuvenating effects. It has been shown to improve dermal healing; and has traditionally been used in the treatment of a variety of dermatological disorders, such as acne, hyperpigmentation, and wounds [6, 11, 16]. Improving microcirculation and lowering inflammation, particularly relevant in the management of striae gravidarum, as well as to its potential antioxidant and anti-inflammatory effects, may collectively explain the improved dermal elasticity and lowered appearance of stretch marks [11].

Kumari, or Aloe vera, is one of the most well-known herbal treatments for skin repair. Aloe vera contains polysaccharides, glycoproteins, and vitamins that contribute to collagen synthesis, hydration, and tissue repair. Aloe vera has been studied extensively for its use on the skin and has been shown to achieve desired outcomes regarding skin texture, elasticity, and hydration [1,2,3]. Multiple studies showed that Aloe vera gel employed topically in pregnancy, allowed for decreased severity or striae development [2,3]. The soothing, anti-pruritic properties of Aloe vera also provide comfort to users experiencing the itchiness and inflammation associated with stretch marks.

Previous clinical studies have examined either Aloe vera or Manjistha separately or along with prescription medication or other herbs. Bagherian et al. [3] found that Aloe vera gel reduces the risk of striae development in nulliparous women. Similarly, Hegde and Dhamale [4] reported that Manjistha Ghrita, which incorporates *Rubia cordifolia*, was effective in the management of Kikkisa, the Ayurvedic term for striae gravidarum. However, to date, little research has evaluated the combined effects of Manjistha and Aloe vera in the form of Lepa (topical herbal paste); this combined treatment is a promising synergy based on their supporting - complementary actions.

Ayurveda classifies Kikkisa as an imbalance of aggravated Vata and Kapha doshas in the pregnant abdomen, manifesting as stretch marks with pruritus and discoloration [5,7,8]. Lepa (herbal paste) is traditionally utilized in Ayurveda as an external therapy for localized skin and musculoskeletal conditions. Applying Lepa



externally is thought to directly apply the active ingredients of herbs to a particular site of pathology to promote local healing [5,7]. It is expected that the topical application of Manjishta-Kumari Lepa for Kikkisa not only treats the dosha imbalance, but also supports tissue regeneration and healing as per Ayurvedic and contemporary dermatological thinking.

This study was designed to provide a meaningful link between Ayurvedic historical knowledge and modern clinical evidence in the use of a Lepa formulation containing Manjishta-Kumari for the management of striae gravidarum. A clinical trial was devised to provide strong evidence in support of this traditional-to-modern approach, and ultimately provide an effective, safe and accessible means to manage stretch marks during and after pregnancy.

In addition, this research also carries on the earlier results of both randomized controlled trials and systematic reviews that point out the necessity of herbal based dermatological solutions containing minimal to no side effects [9,10,17]. Perspective and observations score of the participants, as well as photographic records makes the study even more clinical and patient-centered.

To sum up, the rationale of the current research lies in the fact that the Ayurvedic formulations are therapeutically compatible with the pathological substrate of striae gravidarum. This manuscript would present an evidence-based herbal therapy of dermatological health particularly among women in the perinatal period, with the aim of assessing an objective value of the effects of a topical Lepa that incorporates *Rubia cordifolia* and *Aloe vera*.

## 2. Materials and Methods

### 2.1 Study Design

This study was set up as a single-arm, open-label, randomized clinical experiment. The trial was place in an Ayurvedic hospital environment for 30 days, after getting permission from the ethics board. Before being included, all of the individuals had to give their written approval.

### 2.2 Study Area

Department of Prasuti Evam Stri Rog, Nitishwar Ayurved Medical College & Hospital &PG Research Institute Muzaffarpur, Bihar, India from February 2021 to December 2021. The location guaranteed traditional Ayurvedic treatment and adequate care during the intervention process

### 2.3 Study Duration

The study lasted altogether 30 days with the study subjects treated with the Ayurvedic lepa on a daily basis. The objective and subjective assessments were of three baselines: Day 0 (Baseline), Day 15 (Midpoint), and Day-30 (Endline).

### 2.4 Sample Size

Thirty pregnant women between the ages of 20 and 35 years and with Striae Gravidarum showing up during their 2<sup>nd</sup> or 3<sup>rd</sup> trimester were included in the study. Of them, 28 patients took the entire 30-day schedule of treatment and their results were represented in the final analysis.

### 2.5 Selection Criteria

#### Inclusion Criteria:

- Pregnant women aged 20–35 years.



- Presence of visible *Striae Gravidarum* developed during the current pregnancy (2nd or 3rd trimester).
- No use of other topical products or steroidal creams in the past 3 weeks.
- Willingness to participate and comply with treatment and follow-up.

#### Exclusion Criteria:

- History of dermatological disorders (e.g., psoriasis, eczema).
- Known hypersensitivity to herbal products.
- Systemic illnesses or ongoing medication interfering with skin condition.
- Non-consent or inability to complete the study.

#### 2.6 Intervention

We made the Ayurvedic Lepa by mixing equal parts of powdered Manjistha root and fresh Kumari pulp. Before each use, the materials were combined into a smooth paste. Once a day, ideally in the evening, the paste was put on the problematic areas for 30 minutes and then gently washed off with warm water.

#### 2.7 Evaluation Criteria

##### Objective Parameters:

- Length and Breadth of stretch marks measured in millimeters.

- Area calculated as: Length  $\times$  Breadth (mm<sup>2</sup>).
- Readings taken on Day 0, Day 15, and Day 30 using a sterile measuring tape.

##### Subjective Parameters:

- Itchiness, discoloration, and roughness rated using a 5-point Visual Analog Scale (VAS).
- Periodic digital photographs for visual comparison.

#### 2.8 Statistical Analysis

Statistical analysis was completed using SPSS version XX. Continuous variables (length, width, area) were reported as mean  $\pm$  standard deviation. Paired t-test was applied to compare pre and post-treatment values. Wilcoxon signed-rank test was applied for non-parametric subjective scores. Statistical significance was defined as  $p < 0.05$  [11].

### 3. Results

The clinical trial recruited 30 pregnant women who had visible *Striae Gravidarum*. 28 completed the full 30-day intervention protocol using the Ayurvedic Manjistha-Kumari Lepa. Outcomes were evaluated using both objective and subjective measures at Day 0, Day 15 and Day 30.

#### 3.1 Objective Evaluation

Over time, the length, width, and area of stretch marks all got smaller. Here are the average changes:

**Table 1: Objective Evaluation of Stretch Marks Over the Treatment Duration**

Parameter	Day 0 (Mean $\pm$ SD)	Day 15 (Mean $\pm$ SD)	Day 30 (Mean $\pm$ SD)	% Improvement
Length (mm)	58.3 $\pm$ 6.1	47.8 $\pm$ 5.5	41.2 $\pm$ 5.0	29.3%
Breadth (mm)	5.9 $\pm$ 1.2	4.6 $\pm$ 1.0	3.7 $\pm$ 0.8	37.2%



Area (mm <sup>2</sup> )	343.0 ± 50.2	219.9 ± 45.1	152.4 ± 40.3	55.6%
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A paired t-test revealed a statistically significant decrease in the dimensions of all of the parameters from Day 0 to Day 30 ( $p < 0.001$ ), which indicates the effective reduction of the size of the lesions.

The clinical findings demonstrate a consistent and significant reduction in the dimensions of stretch marks during the 30 days of treatment. The mean length reduced by 29.3%, breadth by 37.2%, and area by 55.6%. This shows the efficacy of the Manjistha-Kumari Lepa to

support improvement in dimension and the severity of Striae Gravidarum. These findings appear to provide evidence for a strong increase in dermal healing and collagen-regeneration properties of the formulation.

### 3.2 Subjective Evaluation

Subjective symptoms like itching, discoloration, and roughness were rated using a 5-point Visual Analog Scale (VAS). Mean scores are given below:

**Table 2: Subjective Symptom Score Changes Based on Visual Analog Scale**

Symptom	Day 0	Day 15	Day 30	% Reduction
Itching	3.8	2.2	1.1	71.0%
Discoloration	4.1	2.9	1.6	60.9%
Skin Roughness	3.5	2.3	1.4	60.0%

The Wilcoxon signed-rank test showed significant improvement across all subjective outcomes ( $p < 0.01$ ). A participant shared, “After two weeks of regular application, the itching was completely gone and the marks began to fade.”

A subjective assessment of the symptoms indicated a clinically relevant improvement in patient-reported outcomes over the 30-day course of treatment with Manjistha-Kumari Lepa. Itching reported an average of 3.8 at Day 0 and improved to 1.1 by Day 30 (71% reduction). Discoloration was at 4.1 and improved to 1.6 (60.9% reduction), and roughness dropped from 3.5 to 1.4 (60% reduction). The results show the formulation reduced the appearance of striae while also reducing discomfort and texture irregularity associated with striae involvement. In summary, the results brought to light the

soothing, anti-inflammatory, and skin-repairing properties of the formulation, suggesting that there may be a role for this Ayurvedic formulation in the effective management of Striae Gravidarum.

## 4. Discussion

The clinical findings of this investigation highlight the therapeutic effectiveness of the Ayurvedic formulation Manjistha-Kumari Lepa in the treatment of Striae Gravidarum (Kikkisa). The overall reduction in stretch mark size and improvement in subjective symptoms, such as itching, discoloration, and skin roughness, argues for a strong synergistic effect of the herbal ingredients in the formulation.

Manjistha (*Rubia cordifolia*) is an established Ayurvedic herb with acknowledged Rakta Shodhana (blood



purifying), anti-inflammatory, and Varnya (skin brightening) attributes. Manjistha provides for healthy microcirculation and assists tissue repair, with both mechanisms facilitating dermal regeneration and maintaining skin integrity. The known pharmacological effects of Manjistha include antioxidant, collagen stabilizing, and wound healing effects [6,11,12,13] which likely contributed to marked decreases in stretch mark length, width and area. Kumari (Aloe vera) provides moistening, anti-pruritic, and anti-inflammatory properties. Aloe vera is a rich source of polysaccharides, glycoproteins, and vitamins and has demonstrated the ability to promote fibroblast proliferation, stimulate collagen formation, and enhance wound healing (1,2,10). The soothing effect on irritated skin explains some of the subjective improvement in reported itch level and skin texture.

The application of the Lepa and the absorption of active phytoconstituents directly into the skin layers locally, removes the drug from systemic absorption and reduces any side effects in the person. A clear application of Ropana Karma (wound healing therapy) was established and Shamana Chikitsa (palliative treatment) as prescribed in ayurvedic therapy.

Similar studies [4,7] reported similar findings, confirming the effectiveness of Ayurvedic topical therapies for the management of Kikkisa. These comparative studies also reinforce the reliability of our findings and support furthering of these herbal formulations into the domain of contemporary obstetric skincare medicine.

Critically, throughout the study, no adverse effects were reported, indicating high tolerability and safety. When comparing the Ayurvedic formulation to conventional treatment (for example, retinoids or corticosteroids)

which, may cause irritation or teratogenicity, the Ayurvedic approach offers as a holistic, side effect-free and patient-centric alternative.

In short, the study helps support the use of Manjistha-Kumari Lepa as a possible intervention, for the treatment of Striae Gravidarum, to build on the evidence of clinical relevance and traditional knowledge.

## 5. Conclusion

The present clinical study demonstrated that the Ayurvedic lepa containing *Manjistha* (*Rubia cordifolia*) and *Kumari* (*Aloe vera*) is highly effective in the management of *Striae Gravidarum*. Over the 30-day treatment period, participants showed a statistically significant reduction in the objective parameters of stretch marks — with length, breadth, and area reduced by 29.3%, 37.2%, and 55.6% respectively ( $p < 0.001$ ). Subjective symptoms such as itching, discoloration, and skin roughness also improved markedly, with reductions of 71.0%, 60.9%, and 60.0% respectively ( $p < 0.01$ ). Importantly, no adverse effects were reported, indicating that the formulation is safe and well-tolerated during pregnancy. These findings support the synergistic action of *Manjistha* and *Kumari* in enhancing collagen synthesis, promoting skin healing, and providing symptomatic relief, thereby validating the traditional Ayurvedic approach as a scientifically sound, natural alternative for the treatment and prevention of stretch marks.

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