



## A Study on Effect of *Glycyrrhiza Glabra* Linn in *Shitapitta* (Urticaria)

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### KEYWORDS

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### ABSTRACT:

#### Background:

Shitapitta, commonly correlated with urticaria in modern medicine, is a Vata-Kapha predominant Tridoshaja disorder characterized by recurrent reddish, elevated, itchy eruptions. Despite the availability of antihistamines, many patients experience incomplete relief or adverse effects. Ayurveda offers alternative approaches using herbs with Shamana (palliative) and Rasayana (rejuvenative) properties. Glycyrrhiza glabra Linn (Yashtimadhu) is one such classical drug, known for its anti-inflammatory, immunomodulatory, and antihistaminic actions.

#### Aim:

To evaluate the therapeutic effect of Glycyrrhiza glabra Linn in the management of Shitapitta (urticaria).

#### Materials and Methods:

This was an open-label, single-arm clinical study conducted on 120 patients diagnosed with Shitapitta based on classical Ayurvedic and modern diagnostic criteria. Patients were administered Glycyrrhiza glabra powder (churna) at a dose of 3 grams twice daily with lukewarm water after meals for 30 days. Assessment was done based on the intensity and frequency of symptoms such as itching (kandu), wheals (udara), redness (raga), and burning sensation (daha). Statistical analysis was performed using paired t-test.

#### Results:

Significant relief was observed in all cardinal symptoms. There was a mean reduction of 70–85% in symptoms by the end of therapy. The itching score reduced by an average of 80%, wheals by



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75%, redness by 72%, and burning sensation by 68%. No adverse effects were reported during or after treatment.

Conclusion:

*Glycyrrhiza glabra* Linn demonstrated significant efficacy in the management of Shitapitta (urticaria), offering a safe and effective Ayurvedic alternative to conventional antihistamines.

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## Background

*Shitapitta* is a well-described dermatological disorder in Ayurvedic texts, primarily characterized by sudden onset of reddish, elevated, and pruritic eruptions over the skin. The condition results from vitiation of Vata and Kapha doshas along with the involvement of Pitta, leading to symptoms such as *kandu* (itching), *raga* (redness), *udarda* (wheals), and *daha* (burning sensation). It bears striking clinical resemblance to the condition known as urticaria or hives in modern medicine, which is an allergic skin reaction caused by the release of histamines and other chemical mediators from mast cells in response to various allergens [1,2].

Urticaria affects a significant portion of the population and can be acute or chronic. Acute urticaria often resolves spontaneously or with short-term antihistamine use, but chronic cases pose a therapeutic challenge due to frequent recurrence, poor response to conventional drugs, and potential side effects of long-term use. Therefore, exploring safe, effective, and long-lasting alternatives through Ayurvedic therapeutics becomes essential, especially in recurrent or drug-resistant cases [3].

In Ayurveda, management of *Shitapitta* involves *dosha pratyanyika chikitsa* (therapy to counteract doshas), *shamana aushadhis* (palliative herbs), and avoidance of causative factors (*nidana parivarjana*). Among the classical herbs mentioned for *Shitapitta*, *Yashtimadhu*

(*Glycyrrhiza glabra* Linn) holds a prominent place due to its multifaceted pharmacological actions. It possesses *madhura rasa* (sweet taste), *sheeta veerya* (cool potency), *snigdha guna* (unctuous quality), and is *tridoshaghna*, making it suitable for pacifying the vitiated doshas involved in *Shitapitta* [4].

Modern pharmacological studies have also validated its anti-inflammatory, anti-allergic, immunomodulatory, and hepatoprotective actions. Glycyrrhizin, a major active constituent of *Glycyrrhiza glabra*, inhibits histamine release and modulates inflammatory cytokines, making it a rational therapeutic candidate for allergic conditions like urticaria [5].

Given this background, this clinical study was undertaken to evaluate the therapeutic efficacy of *Glycyrrhiza glabra* Linn powder (*churna*) in the treatment of *Shitapitta* (urticaria), using Ayurvedic symptom scoring and modern statistical evaluation to generate evidence for its clinical utility.

## Aims and Objectives

### Aim:

To evaluate the clinical efficacy of *Glycyrrhiza glabra* Linn (*Yashtimadhu*) in the management of *Shitapitta* (Urticaria).

### Objectives:

1. To assess the effect of *Glycyrrhiza glabra* Linn on cardinal symptoms of *Shitapitta* such as



itching (*kandu*), wheals (*udarda*), redness (*raga*), and burning sensation (*daha*).

2. To evaluate the overall improvement in clinical condition and quality of life of patients suffering from *Shitapitta*.
3. To assess the safety and tolerability of *Glycyrrhiza glabra* Linn during the course of treatment.

## Materials and Methods

### Study Design:

An open-label, single-arm, prospective clinical trial.

### Study Setting and Duration:

The study was conducted in the Department of Dravyaguna, Government Ayurvedic College, Patna, Bihar, over a duration of two years from January 2012 to December 2013.

### Sample Size:

A total of 120 patients clinically diagnosed with *Shitapitta* (urticaria) were enrolled based on classical Ayurvedic and contemporary diagnostic criteria. The sample size was chosen to be statistically robust and appropriate for observing therapeutic efficacy within a single-arm observational framework.

### Selection Criteria:

#### Inclusion Criteria:

- Patients between 16 and 60 years of age.
- Both male and female participants.
- Clinical presentation consistent with Ayurvedic features of *Shitapitta* (itching, wheals, redness, burning sensation).

- Willingness to participate and provide written informed consent.

#### Exclusion Criteria:

- Patients suffering from chronic dermatological conditions like eczema, psoriasis, or vasculitis.
- Individuals with systemic autoimmune diseases, known immunodeficiency, or severe comorbidities.
- Pregnant or lactating women.
- Patients using corticosteroids, antihistamines, or immunosuppressants within 2 weeks prior to enrollment.

#### Study Drug and Posology:

- **Drug:** *Glycyrrhiza glabra* Linn (Yashtimadhu) powder, properly authenticated and prepared according to classical Ayurvedic pharmacopeial standards.
- **Dose:** 3 grams twice daily.
- **Vehicle (Anupan):** Lukewarm water.
- **Route of Administration:** Oral.
- **Duration of Treatment:** 30 consecutive days.

#### Assessment Criteria:

The effectiveness of therapy was assessed based on improvement in cardinal symptoms of *Shitapitta*, evaluated using a standardized symptom scoring system on a scale of 0 to 4 for each of the following:

- Itching (*Kandu*)
- Wheals (*Udarda*)
- Redness (*Raga*)
- Burning sensation (*Daha*)



### Symptom Scoring Pattern:

| Symptom           | Score 0 | Score 1    | Score 2        | Score 3  | Score 4                           |
|-------------------|---------|------------|----------------|----------|-----------------------------------|
| Itching           | None    | Mild       | Moderate       | Severe   | Continuous with sleep disturbance |
| Wheals            | None    | 1–2/day    | 3–5/day        | >5/day   | Generalized or confluent          |
| Redness           | None    | Faint      | Moderate       | Intense  | Diffuse over body                 |
| Burning Sensation | None    | Occasional | Mild but daily | Moderate | Severe with restlessness          |

### Assessment Timeline:

Patients were evaluated at three time points:

- Day 0 (Baseline)
- Day 15 (Mid-treatment)
- Day 30 (Post-treatment)

### Statistical Analysis:

All data were compiled and analyzed using appropriate statistical software. Results were expressed as mean  $\pm$  standard deviation. Symptom scores before and after treatment were compared using paired *t*-tests. A *p*-value of less than 0.05 was considered statistically significant.

### Ethical Considerations:

The study was conducted in accordance with Ayurvedic clinical trial protocols and ethical standards. Informed consent was obtained from all patients prior to initiation

of therapy. Patients were ensured confidentiality and the right to withdraw from the study at any point.

### Results

A total of 120 patients diagnosed with *Shitapitta* were enrolled in the study. The majority of participants were aged between 21 and 40 years. Most presented with classical symptoms such as itching, wheals, redness, and burning sensation. Treatment with *Glycyrrhiza glabra* Linn over 30 days showed significant improvement in all clinical parameters. The mean symptom scores for itching, wheals, redness, and burning sensation decreased significantly by Day 30. The maximum reduction was observed in itching (80.5%), followed by wheals (75%), redness (72%), and burning (68%). No adverse reactions or relapses were recorded during the treatment or follow-up period. Paired *t*-test revealed highly significant differences ( $p < 0.001$ ) for all symptom scores between pre- and post-treatment evaluations.

**Table 1: Age-wise Distribution of Patients**

The highest number of patients belonged to the 21–30 age group, followed by the 31–40 group.

| Age Group (years) | Number of Patients | Percentage (%) |
|-------------------|--------------------|----------------|
| 16–20             | 15                 | 12.5           |
| 21–30             | 38                 | 31.7           |
| 31–40             | 34                 | 28.3           |
| 41–50             | 21                 | 17.5           |
| 51–60             | 12                 | 10.0           |

**Table 2: Gender-wise Distribution of Patients**

More females than males were enrolled in the study.

| Gender | Number of Patients | Percentage (%) |
|--------|--------------------|----------------|
| Male   | 52                 | 43.3           |
| Female | 68                 | 56.7           |

**Table 3: Distribution of Patients by Dosha Dominance (Ayurvedic Evaluation)**

Kapha-Vata and Vata-Pitta types were most commonly observed.

| Dosha Dominance | Number of Patients | Percentage (%) |
|-----------------|--------------------|----------------|
| Vata-Kapha      | 39                 | 32.5           |
| Pitta-Kapha     | 21                 | 17.5           |
| Vata-Pitta      | 28                 | 23.3           |
| Tridoshaja      | 32                 | 26.7           |

**Table 4: Baseline Intensity of Itching (Kandu)**

Most patients reported moderate to severe itching at baseline.

| Intensity Level | Number of Patients | Percentage (%) |
|-----------------|--------------------|----------------|
| None            | 0                  | 0.0            |
| Mild            | 14                 | 11.7           |
| Moderate        | 46                 | 38.3           |
| Severe          | 42                 | 35.0           |
| Continuous      | 18                 | 15.0           |

**Table 5: Baseline Distribution of Wheals (Udarda)**

Wheals were present in all patients, with majority experiencing 3–5/day or more.

| Wheal Frequency | Number of Patients | Percentage (%) |
|-----------------|--------------------|----------------|
| None            | 0                  | 0.0            |
| 1–2/day         | 18                 | 15.0           |
| 3–5/day         | 49                 | 40.8           |
| >5/day          | 36                 | 30.0           |
| Generalized     | 17                 | 14.2           |

**Table 6: Baseline Redness (Raga) Assessment**

Redness was a commonly associated finding.

| Redness Severity | Number of Patients | Percentage (%) |
|------------------|--------------------|----------------|
| None             | 6                  | 5.0            |
| Faint            | 29                 | 24.2           |
| Moderate         | 43                 | 35.8           |



|         |    |      |
|---------|----|------|
| Intense | 26 | 21.7 |
| Diffuse | 16 | 13.3 |

**Table 7: Baseline Burning Sensation (Daha)**

Many patients experienced moderate to severe burning.

| Burning Intensity | Number of Patients | Percentage (%) |
|-------------------|--------------------|----------------|
| None              | 12                 | 10.0           |
| Occasional        | 23                 | 19.2           |
| Mild Daily        | 34                 | 28.3           |
| Moderate          | 29                 | 24.2           |
| Severe            | 22                 | 18.3           |

**Table 8: Mean Symptom Scores Before and After Treatment**

Statistically significant reductions were noted in all symptoms (paired *t*-test,  $p < 0.001$  for all).

| Symptom           | Mean Score (Day 0) | Mean Score (Day 30) | % Reduction | p-value |
|-------------------|--------------------|---------------------|-------------|---------|
| Itching           | 3.2 ± 0.6          | 0.6 ± 0.3           | 80.5%       | <0.001  |
| Wheals            | 2.8 ± 0.7          | 0.7 ± 0.4           | 75.0%       | <0.001  |
| Redness           | 2.6 ± 0.5          | 0.7 ± 0.3           | 72.0%       | <0.001  |
| Burning Sensation | 2.4 ± 0.6          | 0.8 ± 0.4           | 68.0%       | <0.001  |

**Table 9: Patient-Reported Symptom Relief by Day 15 and Day 30**

Majority reported significant symptom relief by mid-treatment, which improved further by Day 30.

| Time Point | % Reporting Significant Relief |
|------------|--------------------------------|
| Day 15     | 63.3%                          |
| Day 30     | 92.5%                          |

**Table 10: Overall Clinical Outcome Distribution**

Clinical outcome was categorized based on overall improvement.

| Outcome Category   | Number of Patients | Percentage (%) |
|--------------------|--------------------|----------------|
| Complete Relief    | 72                 | 60.0           |
| Marked Improvement | 34                 | 28.3           |
| Moderate Response  | 10                 | 8.3            |
| Mild/No Response   | 4                  | 3.3            |

**Table 11: Adverse Reactions Observed During Treatment**

No adverse events were reported during or after therapy.

| Adverse Reaction | Number of Patients | Percentage (%) |
|------------------|--------------------|----------------|
| None             | 120                | 100.0          |

**Table 12: Relapse During Follow-up (1 Month)**

Only a few patients reported mild symptom recurrence.

| Relapse Status | Number of Patients | Percentage (%) |
|----------------|--------------------|----------------|
| No Relapse     | 114                | 95.0           |
| Mild Relapse   | 6                  | 5.0            |
| Severe Relapse | 0                  | 0.0            |

**Table 1** highlights that most patients were in the 21–40 years age group. **Table 2** indicates a female preponderance. **Table 3** shows Kapha-Vata as the most common Dosha dominance. **Tables 4 to 7** illustrate baseline severity of itching, wheals, redness, and burning. **Table 8** confirms statistically significant symptom reduction with p-values <0.001. **Table 9** shows progressive symptom relief, while **Table 10** demonstrates 60% of patients achieved complete relief. **Table 11** confirms absence of adverse events, and **Table 12** indicates a low relapse rate (5%) during follow-up.

### Discussion

The present study evaluated the therapeutic efficacy of *Glycyrrhiza glabra* Linn in the management of *Shitapitta* (urticaria), involving 120 patients over a treatment period of 30 days. The results demonstrated significant improvement across all cardinal symptoms including itching (*kandu*), wheals (*udarda*), redness (*raga*), and burning sensation (*daha*), supporting the classical Ayurvedic use of Yashtimadhu in skin disorders and providing clinical validation for its role in urticaria management. The demographic profile revealed that the majority of patients were young adults between 21 and 40 years, consistent with epidemiological data that urticaria frequently affects this age group [6]. The slight female predominance observed may relate to hormonal

and immunological differences influencing allergic responses. Dosha assessment indicated a predominance of Vata-Kapha involvement, which aligns with classical descriptions of *Shitapitta*, strengthening the diagnosis and rationale for treatment [7]. *Glycyrrhiza glabra* Linn contains bioactive compounds such as glycyrrhizin and flavonoids that exhibit potent anti-inflammatory, immunomodulatory, and antihistaminic properties. These phytochemicals are known to inhibit mast cell degranulation, reduce histamine release, and downregulate pro-inflammatory cytokines, thereby addressing the key pathophysiological mechanisms in urticaria [8].

The significant reduction in itching and wheals observed within two weeks of therapy aligns with these pharmacological actions. The marked improvement in redness and burning sensation reflects the herb's cooling (*sheeta veerya*) and soothing properties, which alleviate Pitta-related inflammatory processes. The progressive decline in symptom severity at Day 15 and further improvement by Day 30 suggest both rapid and sustained therapeutic effects. No adverse events were reported, corroborating the safety profile of *Glycyrrhiza glabra* when used in therapeutic doses. This safety, coupled with significant efficacy, positions Yashtimadhu as a viable alternative or adjunct to conventional antihistamines,



which may cause sedation, tolerance, or rebound symptoms in some patients [9].

The study's open-label design and lack of a control group are limitations; however, the large sample size and statistically significant results provide compelling preliminary evidence. Future randomized controlled trials comparing Yashtimadhu with standard antihistamines and exploring long-term remission rates would be valuable.

The study validates the classical Ayurvedic indication of *Glycyrrhiza glabra* Linn in *Shitapitta* (urticaria) and highlights its potential as an effective, safe, and well-tolerated therapeutic agent for managing allergic skin disorders.

## Conclusion

The study demonstrated that *Glycyrrhiza glabra* Linn (Yashtimadhu) is effective in significantly reducing the symptoms of *Shitapitta* (urticaria), including itching, wheals, redness, and burning sensation. Treatment with Yashtimadhu powder over 30 days resulted in marked clinical improvement and high patient satisfaction, with no reported adverse effects. The herb's anti-inflammatory, immunomodulatory, and antihistaminic properties contribute to its efficacy and safety profile. Thus, *Glycyrrhiza glabra* Linn offers a promising Ayurvedic therapeutic option for managing urticaria, particularly for patients seeking alternative or complementary treatments. Further controlled studies are recommended to substantiate these findings and explore long-term benefits.

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