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Case Series

POOVARASAM PATTAI KUDINEER IN THE MANAGEMENT OF *KAANA KADI* (PAPULAR URTICARIA)

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ABSTRACT

Kaanakadi, described in Siddha classical texts as a condition caused by the bite of an unknown creature, corresponds to papular urticaria in modern dermatology- a common hypersensitivity skin disorder characterized by pruritic erythematous papules, wheals, and localized swelling, primarily triggered by insect bites. *Poovarasam Pattai Kudineer*, a decoction prepared from the bark of *Thespesia populnea* (Malvaceae), is indicated in classical Siddha literature for the management of *Kaanakadi*. The present study evaluates the clinical efficacy of this formulation through a structured case series. The objective of the study is to evaluate the effectiveness of *Poovarasam Pattai Kudineer* in treating *Kaanakadi* (papular urticaria) using the Urticaria Activity Score (UAS) and eosinophil count as outcome measures over a 7-day follow-up period. It is a descriptive case series of 20 patients (9 males, 11 females; age 26–50 years) diagnosed with *Kaanakadi* (papular urticaria) was conducted at the OPD of Nanju Maruthuvam, Government Siddha Medical College and Hospital, Palayamkottai. Patients administered with *Poovarasam Pattai Kudineer* (50ml twice daily before food) for 7 days. UAS (Wheals and Pruritus, 0–3 scale) and eosinophil count (before and after treatment) were assessed for clinical outcomes. Paired t-test was used for statistical analysis. Post-treatment, UAS-Wheals significantly reduced (mean: 1.75±0.851 vs 0.95±1.191; $p<0.001$), UAS-Pruritus reduced significantly (mean: 1.7±0.733 vs 1.3 ± 0.979; $p=0.017$), and Eosinophil count showed a significant decline (mean: 6.45±2.460 vs 4.85±3.083; $p=0.002$). Complete resolution of wheals was observed in 55% of cases. *Poovarasam Pattai Kudineer* demonstrated statistically significant improvement in all three outcome parameters within 7 days, supporting its potential as an effective Siddha formulation for the management of *Kaanakadi* (papular urticaria).

INTRODUCTION

Kaanakadi, as described in classical Siddha literature, refers to a dermatological condition arising from the bite of an unidentified creature- one in which the patient is unaware of the causative organism. The term is etymologically derived from the Tamil words *Kaana* (unseen) and *Kadi* (bite).

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Classical literature describes *Kaanakadi* as lightning-like erythematous patches on the skin with intense pruritus and wheal formation and a bark-like appearance of the skin.

In modern dermatology, these symptoms closely resemble to papular urticaria, a hypersensitivity skin disorder characterized by pruritic, erythematous papules predominantly occurring on exposed areas of the body, triggered by insect bites especially from mosquitoes, fleas, and mites. Due to persistent scratching of the skin secondary infections may occur in some cases. The *Thespesia populnea* bark, contains several bioactive compounds such as flavonoids, tannins, and saponins and also possess anti-inflammatory, antimicrobial, and

antioxidant activities. These properties makes that it could help in managing skin issues including papular urticaria. This case series insights the use of decoction (*Kudineer*) *Thespesia populnea* bark as a treatment for papular urticaria. *Kudineer*, in siddha is a method of preparing the decoction by boiling the plant material by which the active compounds get extracted into a concentrated form. The aim of this study is to evaluate the effectiveness of this herbal preparation in reducing the symptoms of papular urticaria, such as pruritus, inflammation, and lesion size, in the meantime to monitoring for any potential side effects or adverse reactions. In this case series, 20 patients diagnosed with papular urticaria will be administered a decoction of *Thespesia populnea* bark, and their responses to the treatment will be documented over a period of time. Acute urticaria was more frequent in middle-aged atopic female patients. Lesions more often involved upper and lower limbs and head. Most frequent subtypes of acute urticaria were spontaneous, dermographic, papular, and drug-induced urticaria.[1] No vulnerable population were included in the study.

Suvai: *Kaippu* (bitter)*, Thuvarppu* (astringent)*,* ***Thanmai:*** *Veppam,* ***Pirivu:*** *Kaarppu*

Literature Review

Kaanakadi: Siddha Classical Perspective

Several classical Siddha texts provide detailed descriptions of *Kaanakadi* and its management:

- ***Vishavaidya Aruda Nool***: Describes *Kaanakadi* as swelling or thickening occurring anywhere on the body due to the sting of an unidentified creature.
- ***Nanju Murivu Nool***: States that the biting creature is invisible to the naked eye, making identification impossible. The condition arising from such bites is termed *Kaanakadi*.
- ***Sirappu Maruthuvam***: Describes the appearance of itchy, raised plaques in patches on the limbs or body, with an unclear causative factor. The text equates this condition with hypersensitivity reactions.

Clinical Features per Siddha Texts

- Erythematous patches on the skin (Lightning-like appearance).
- Bark-like rough texture of the skin surface.
- Sudden appearance of dark and reddish papular lesions.
- Intolerable pruritus (itching)
- Wheal formation with localized swelling.

Papular Urticaria: Modern Dermatological Perspective

Papular urticaria is a common hypersensitivity reaction characterized by recurrent, pruritic, erythematous papules predominantly on exposed areas of the skin, particularly in children and young adults. The condition results from a sensitized immune response to salivary antigens of hematophagous insects- primarily mosquitoes, fleas, and bed bugs. The immune mechanism involves IgE-mediated (Type I) hypersensitivity, leading to mast cell degranulation and release of histamine, serotonin, and other inflammatory mediators. Lesions are typically grouped, arranged in linear or curved patterns, and appear predominantly on the arms, legs, and trunk. Intense pruritus frequently leads to excoriation, secondary bacterial infection, and post-inflammatory hyperpigmentation.

Poovarasam Pattai (Thespesia populnea Bark): Pharmacological Evidence

Thespesia populnea bark has been extensively studied for its pharmacological properties:

- The ethanolic extract of *T. populnea* bark (TPE) demonstrated significant anti-inflammatory activity in carrageenan-induced rat paw edema, histamine-induced, and serotonin-induced edema models, suggesting inhibition of synthesis or release of key inflammatory mediators (Vasudevan et al., 2007).
- TPE exhibited substantial antioxidative activity against carbon tetrachloride-induced liver injury in rats (Ilavarasan et al., 2003).
- Mast cell stabilization and anti-anaphylactic activities of the bark extract were demonstrated to be comparable to the standard drug Ketotifen, suggesting its potential as an anti-allergic agent (Patel et al., 2010).
- No mortality was observed even at the highest dose tested (2000mg/kg, p.o.), confirming the safety profile of *T. populnea* bark extract (Vasudevan et al., 2007).

These pharmacological properties are directly relevant to the pathophysiology of papular urticaria and provide a sound scientific rationale for the use of *Poovarasam Pattai Kudineer* in *Kaanakadi*.

MATERIALS AND METHOD

Ethical Considerations

The study was conducted after Institutional Ethics Committee (IEC) approval. Written informed consent was obtained from all participants prior to enrolment. The study adhered to the ethical principles of the Declaration of Helsinki (2013 revision).[19]

Twenty participants (9 Male and 11 Female) of *Kaanakadi* from the OPD of Nanju maruthuvam department, Government siddha medical college and Hospital, Palayamkottai.

Criteria for Inclusion

Age: 15 –60 years.

Sex: Both male and female.

Presenting with itching, wheal formation, swelling.

Criteria for Exclusion

Evidence of any skin condition other than urticaria.

Treatment of Participants

Drug details

Name and details of the drug: *Poovarasam pattai kudineer.*

Tamil name: *Poovarasu, Poolam, Poovirasan.*

Botanical name: *Thespesia populnea*

Family: Malvaceae

English name: Portia tree

Dose: 50ml (morning and night) before food.

Dosing schedule: Twice daily half an hour before food. (7am & 7pm)

Route /mode of administration: Oral

Duration of drug administration: Period of the 7 consecutive days.

Drug preparation

Poovarasam pattai kudineer

Drug collection: Barks of *Thespesia populnea* were collected in the local areas of Tirunelveli district.

Drug Authentication: Collected raw drug was authenticated from the Department of Gunapadam, Government Siddha Medical College, Palayamkottai.

Preparation

Collected raw drug was purified and dried. 10 grams of *Poovarasam pattai* (coarsely powdered bark of *Thespesia populnea)* is boiled with 200ml of water and reduced to 50ml.

Reference: Gunapadam - Mooligai

Outcome Measures

The UAS is a validated, patient-reported outcome tool for evaluating the severity of urticaria. It scores two parameters- wheals and pruritus- independently on a 0–3 scale daily over 7 days. The total score ranges from 0 to 42 (UAS7= sum of daily scores).

Score	Wheals (No. per 24 hrs)	Pruritus
0	None	None
1	Mild (< 20 wheals/24 hrs)	Mild (present but not annoying or troublesome).
2	Moderate (20–50 wheals/24 hrs)	Moderate (troublesome but does not interfere with normal daily activity or sleep).
3	Intense (> 50 wheals/24 hrs or large confluent areas)	Intense (severe pruritus, interferes with normal daily activity or sleep).

Eosinophil Count

Peripheral blood eosinophil count (%) was measured before treatment (day 0) and after treatment (day 7) as an objective laboratory marker of allergic response.

Follow-Up Timeline

Timepoint	Events / Assessments
Day 0 (baseline)	Patient enrolment; clinical examination; *Naadi* assessment; UAS scoring (wheals + pruritus); eosinophil count; initiation of *Poovarasam Pattai Kudineer* (50ml bd before food).
Day 1–2	Patient self-administered *Kudineer*; daily UAS self-scoring (wheals and pruritus).
Day 3 (mid-follow-up)	Clinical review; UAS reassessment; monitoring for adverse effects.
Day 4–6	Continuation of treatment; daily UAS self-scoring.
Day 7 (end-point)	Final clinical review; UAS reassessment; post-treatment eosinophil count; documentation of outcome.

Therapeutic Interventions

All 20 enrolled patients received *Poovarasam Pattai Kudineer* as the sole therapeutic intervention. No concomitant allopathic or other traditional medications were administered. Patients were also counselled on preventive measures including vector control (use of mosquito nets, repellents), maintenance of skin hygiene, and avoidance of scratching to prevent secondary infection.

RESULTS AND OBSERVATIONS

UAS- Pruritus: Before and After Treatment

Table 1 presents the pruritus count scores (UAS) for each case before and after treatment.

Table 1: UAS- Pruritus Level Before and After Treatment

Case	Before Treatment	After Treatment	Case	Before Treatment	After Treatment
1	Moderate	Mild	11	Moderate	Mild
2	Moderate	Intense	12	Mild	Mild
3	Moderate	Mild	13	Moderate	Nil
4	Mild	Nil	14	Moderate	Mild
5	Intense	Intense	15	Mild	Nil
6	Mild	Mild	16	Intense	Intense
7	Mild	Mild	17	Mild	Mild
8	Moderate	Moderate	18	Moderate	Mild
9	Intense	Intense	19	Mild	Mild
10	Mild	Mild	20	Mild	Mild

Out of 20 cases, 3 cases (2 mild + 1 moderate) showed complete resolution of pruritus (NIL), 5 moderate cases reduced to mild, 7 mild, 1 moderate and 3 intense cases remained unchanged, and 1 moderate case aggravated to intense.

UAS- Wheals: Before and After Treatment

Table 2 presents the wheal count scores (UAS) for each case before and after treatment.

Table 2: UAS - Wheals Level Before and After Treatment

Case	Before Tx	After Tx	Case	Before Tx	After Tx
1	Intense	Mild	11	Intense	Moderate
2	Mild	Moderate	12	Mild	Nil
3	Mild	Nil	13	Mild	Nil
4	Moderate	Nil	14	Moderate	Nil
5	Intense	Intense	15	Mild	Nil
6	Mild	Mild	16	Intense	Intense
7	Mild	Nil	17	Moderate	Moderate
8	Mild	Nil	18	Moderate	Moderate
9	Intense	Intense	19	Moderate	Nil
10	Mild	Nil	20	Mild	Nil

Out of 20 cases, 11 cases (8 mild + 3 moderate) showed complete resolution of wheals, 1 intense case reduced to mild, 1 intense case reduced to moderate, 1 mild case aggravated to moderate, and 1 mild, 2 moderate, 3 intense cases remained unchanged.

Eosinophil Count: Before and After Treatment

Table 3: Eosinophil Count (%) Before and After Treatment

Case	Before Treatment (%)	After Treatment (%)	Case	Before Treatment (%)	After Treatment (%)
1	7	4	11	4	3
2	6	6	12	6	2
3	9	7	13	8	3
4	5	4	14	9	6
5	7	9	15	5	2
6	3	2	16	13	13
7	4	2	17	3	3
8	6	5	18	6	5
9	9	11	19	4	3
10	8	3	20	7	4

Eosinophil count decreased post-treatment in 75% of cases (n=15), remained unchanged in 15% (n=3), and increased in 10% (n=2). Case 16 had the highest eosinophil count (13%), which remained unchanged.

Naadi Distribution Before and After Treatment

Naadi (pulse diagnosis) was assessed before and after treatment as per classical Siddha methodology. Post-treatment, a shift towards *Vatha Pitham* was observed in the majority of cases, indicating a restoration of physiological balance.

Statistical Analysis

Paired t-test was applied to compare pre- and post-treatment values of the three outcome parameters. Results are summarized in Tables 5 and 6.

Table 4: Mean ± SD of Outcome Measures Before and After Treatment

Parameter	Before Treatment (Mean ± SD)	After Treatment (Mean ± SD)
Eosinophil Count (%)	6.45 ± 2.460	4.85 ± 3.083
UAS - Wheals	1.75 ± 0.851	0.95 ± 1.191
UAS - Pruritus	1.70 ± 0.733	1.30 ± 0.979

Table 5: Paired t-Test Results

Parameter	t-value	p-value	Significance	Interpretation
Eosinophil Count	2.516	0.002	HS*	H0 rejected; significant decrease
UAS - Wheals	4.290	<0.001	HS*	H0 rejected; significant decrease
UAS - Pruritus	2.620	0.017	HS*	H0 rejected; significant decrease

HS*= Highly Significant ($p<0.05$). For all three parameters, the null hypothesis (H0: no significant difference between before and after treatment) was rejected in favour of the alternate hypothesis (Ha: significant difference exists).

DISCUSSION

The present case series evaluated the clinical efficacy of *Poovarasam Pattai Kudineer* (decoction of *Thespesia populnea* bark) in treating *Kaanakadi* (Papular Urticaria) in 20 patients over a 7-day treatment period. The findings demonstrate statistically significant improvements across all three primary outcome measures: UAS-Wheals, UAS-Pruritus, and eosinophil count.

Wheals Reduction: The most notable outcome was the reduction of wheal scores post-treatment. Complete resolution of wheals (score reduced to Nil) was observed in 55% of patients (n=11). The mean UAS-Wheals score reduced from 1.75±0.851 to 0.95±1.191 ($p<0.001$). This is attributable to the anti-inflammatory and mast cell stabilizing properties of *T. populnea* bark. Flavonoids and tannins present in the bark extract are known to suppress mast cell degranulation and reduce histamine-mediated wheal formation. The anti-anaphylactic activity of the bark extract, demonstrated to be comparable to Ketotifen (Patel et al., 2010), provides a strong mechanistic basis for this clinical observation.

Pruritus Reduction: Pruritus, the most distressing symptom of papular urticaria, showed significant improvement with a mean UAS-Pruritus reduction from 1.70±0.733 to 1.30±0.979 ($p=0.017$). Complete relief from pruritus was achieved in 3 patients (15%). The antihistaminic and anti-serotonin properties of *T. populnea* bark extract, as demonstrated by Vasudevan et al. (2007) in histamine- and serotonin-induced edema models, provide a plausible pharmacological explanation. The persistence of intense pruritus in a subset of patients may be attributed to individual variability in immune response, ongoing allergen exposure, or secondary psychological factors.

Eosinophil Count: Eosinophil count, a reliable biomarker of allergic immune response, decreased in 75% of patients post-treatment. The mean eosinophil count declined from 6.45±2.460 to 4.85±3.083 ($p=0.002$). This reduction indicates a modulation of the underlying allergic response rather than mere symptomatic suppression, suggesting a disease-modifying potential of *Poovarasam Pattai Kudineer*. The absence of change in Case 16 (baseline count 13%) may indicate a more severe or persistent allergic state requiring longer treatment duration.

***Naadi* Perspective:** From the Siddha standpoint, the post-treatment shift towards *Vatha Pitham* in the majority of cases reflects a restoration of the body's internal humoral equilibrium ("*Mukkutram*" balance). This holistic normalization parallels the improvement in clinical symptoms and supports the systemic action of the formulation beyond localised anti-allergic effects.

Safety Profile: No adverse effects or allergic reactions attributable to *Poovarasam Pattai Kudineer* were reported during the 7-day treatment period, consistent with preclinical safety data demonstrating no mortality even at 2000 mg/kg (Vasudevan et al., 2007).

Patient Perspective

Patients reported subjective relief from itching and reduction in the number and size of skin lesions within the 7-day treatment period. Caregivers of affected patients noted improved sleep quality due to reduced nocturnal pruritus. The decoction was well-tolerated; patients described its taste as mildly bitter and astringent, consistent with the classical Siddha description of *Poovarasam Pattai* (Bitter: *Kaippu*; Astringent: *Thuvarpu*). No patient discontinued treatment due to palatability or adverse effects.

Limitations

- Small sample size (n=20) limits generalizability of findings.
- Non-random sampling introduces potential selection bias.
- Short study duration (7 days) does not allow assessment of long-term outcomes or recurrence rates.
- Absence of a control group prevents direct comparison with standard care or placebo.
- Geographic restriction to a single OPD centre limits representativeness.

CONCLUSION

Poovarasam Pattai Kudineer, prepared from the bark of *Thespesia populnea*, demonstrated statistically significant and clinically meaningful improvements in UAS-Wheals, UAS-Pruritus, and eosinophil count in patients with *Kaanakadi* (papular urticaria) over a 7-day treatment period. Complete resolution of wheals was achieved in 55% of cases, and eosinophil count decreased in 75%, indicating both symptomatic relief and modulation of the allergic immune response. The formulation was safe and well-tolerated with no adverse effects reported. These findings align with the classical Siddha indication of *Poovarasam Pattai* for *Kaanakadi* and are supported by contemporary pharmacological evidence for *T. populnea* bark (anti-inflammatory, antihistaminic, mast cell stabilizing, and antioxidant activities). Future research with larger sample sizes, randomized controlled trial design, and extended follow-up is recommended to validate and generalize these promising findings.

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