



## **Study the Effect of *Ipomea carnea* Jacq. *Patra swarasa* (Leaves Juice) in Treatment of *Indralupta* (Alopecia Areata): A Pilot Study**

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### **Authors' contributions**

*This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.*

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### **ABSTRACT**

**Introduction:** Hair and skin disease create negative impact on individuals. Although such diseases doesn't have any life threatening effects like systemic diseases still have much more importance as the cosmetic issue concern. *Indralupta* is a rare entity found in both male, and female at any age which can be correlated with Alopecia areata. There are many treatment modalities are available for the *Indralupta* (Alopecia areata) but application of leaf juice of *Ipomea carnea* is simple and cost effective treatment.

**Aim & Objective:** Study the effect of *Ipomea carnea* Jacq. *patra swarasa* (leaves juice) in management of *Indralupta* (Alopecia Areata). To study the adverse effects of *Ipomea carnea* leaf juice local application if noted during study.

**Methodology:** Fresh leaf juice will be extracted from clean leaf of *Ipomea carnea* and apply over

the spot where hairs are lost for 15 days at morning before bath. 10 objects will be selected from kaychikitsa OPD randomly and consider for study after their willingness and consent. Outcomes will be assessed with the help of different criteria according to hair texture, Hair fall and scalp area examination.

**Result:** Result will be observed according to criteria and Wilcoxon signed rank test will be applied.

**Conclusion:** *Ipomea carnea* will be effective in *Indralupta*(*Alopecia areata*).

**Keywords:** *Indralupta*; *Ipomea carnea*; *Alopecia areata*.

## 1. INTRODUCTION

According to Ayurveda each dravya (material) in this universe is a medicine when it is used in proper manner [1]. Many plants are being used traditionally for treating various diseases but not mentioned in classical text. *Ipomoea carnea* jacq. is an example of same and are being used by traditional healers of Melghat area of Maharashtra to treat "cha" i.e. a condition in which a patch or many patches or total hairs on scalp are falling out and area of scalp became hairless (bald). The similar disease presentation mention in Ayurved under the name of *Indralupta*. It symptomatically can be correlated to Alopecia Areata [2]. Alopecia Areata is hypothesized to be an organ specific autoimmune disease mediated by T lymphocytes directed to the hair follicles and of unknown aetiology [3].

There are abundance of therapeutic modalities are available in Ayurveda and modern system of medicine. In Ayurveda, both *shodhana* (Internal and external cleansing procedures) and *shamana* treatment (Disease specific internal medications) are prescribed for *Indralupta* [4]. Some of the medicinal plants are effective but induces erosion and blisters; although these side effects are mild, non-serious and can subsides with proper treatment within 2-3 days [5,6]. In modern system of medicine use of systemic as well as local steroid is preferred the important component of treatment in alopecia areata with reported adverse effect. Also few other medicines with the steroid included in treatment which has limitation and not advisable for long term use and few surgical interventions with limited involvement which are costly and it has common surgical risks [7,8].

*Ipomoea carnea* jacq, belongs to convolvulaceae family found everywhere in India which is native of tropical America [9] and the main character of the plant is that it can regenerate very fast from its part in dry as well as the moist surfaces. Due to this unique character this plant is locally

termed as *thethar* or *besharam*. The unique property of the plant is that this can survive well in terrestrial surface as well as can tolerate the waterlogged region or even water bodies [10,11,12]. *I. carnea* is used in leukoderma and other related skin diseases [13,14]. Formulated gel was found safe in skin irritation test [15]. It is taken for study after reviewing the data from various researches and the study has started which is based on a strong folklore claim from ethanomedicinal use of leaf juice (*Patra swarasa*) in *Indralupta*.

## 2. RATIONALE OF STUDY

Hair disorders cause negative impact towards the individual and his/her quality of life. *Indralupta* is included in *Kshudraroga* in Ayurveda characterised by hair loss. Although there are variety of treatments available in Ayurveda and modern science either they have some adverse effects or cost issue. *Ipomoea carnea* jacq is easily available plant and have reported effective in various diseases including. Traditionally being used in folklore medicine and found efficiently effective in *indralupta*. Degeneration of hairs is the main concern in *indralupta* and the regenerative property of *Ipocarnia carnea* might have effective in this condition. There is no skin eruption noted with the use of leaf juice (patra swaras). Hence the present study is taken with the view of minimal intervention, cost effectiveness, least or no adverse effect and to introduce *Ipomoea carnea* in *Indralupta* (Alopecia Areata).

### 2.1 Aim

Study the efficacy of *Ipomoea carnea* patra swaras (leaf juice) local application on *indralupta* (Alopecia areata)

### 2.2 Objectives

1. To study the effect of *Ipomoea carnea* leaf swarasa on *indralupta*.
2. To assess any ADR.

**2.2.1 Case definition**

A diagnosed *Indralupta* subject with symptoms patchy hair loss in single or multiple patches.

**2.3 Research Question**

Whether *Ipomoea carnea* is effective in management of *Indralupta* (Alopecia areata)?

**2.3.1 Hypothesis**

*Ipomoea carnea* is effective in management of *Indralupta* (Alopecia areata).

**2.3.2 Null Hypothesis**

*Ipomoea carnea* is not effective in management of *Indralupta* (Alopecia areata).

**3. METHODOLOGY**

**3.1 Study Setting**

Department of Dravyaguna, DMAMCH&RC and Dept. of kaychikitsa- DMAMCH&RC, Nagpur and MGAMCH&RC, Salod (H), Wardha.

**3.1.1 Inclusion criteria**

- a) Diagnosed patients of *Indralupta* (Alopecia areata) showing clinical findings as oval or round, well circumscribed, bald patch (having diameter less than or equal to 3 cms).
- b) Patients of either sex of age 15 yrs to 55yrs.
- c) Patient will be included with written consent only.

**3.1.2 Exclusion criteria**

- a) Patient with more than 3 bald patches.
- b) Patient with any other skin diseases.
- c) Patient with systemic disease.

**3.1.3 Criteria for discontinuing or modifying allocated interventions**

Subject will be withdrawn from the study if any untoward incidence, features of drug sensitivity or any other disease or problem arises, the subject will be offered free treatment till the problem subsides.

**Sample size- 10**

**Groups-** Single group (Before and after treatment)

**Study design-** Single armed study.

**Study type-** Intervention

**Intervention** - Patra swarsas (Leaf juice) of *I. carnia* for local application.

**Posology-** Q.S., at morning time, after bath at in the morning.

**Skin irritation test-** *I. carnea* swarasa will be apply on the skin covering 0.5 cm area of dorsal aspect of forearm observe half hour for any skin irritation, redness or any other reaction.

**Screening investigations (base line)**-CBC, ESR, RBS

**Treatment period** – 15 days

**Follow up period**

During treatment – 0, 5<sup>th</sup>, 10<sup>th</sup>, 15<sup>th</sup> day

After treatment – 30<sup>th</sup>, 45<sup>th</sup> day

**3.1.4 Assessment criteria [16]**

A. To assess the effect of therapy, subjective symptoms criteria like hair texture, hair fall and hair loss (Table A1, A2 & for gradation of patches table A3) will be considered.

**Table A1 [20]**

1. Hair texture examination	Score
Smooth hair surface	0
Occasional roughness of hair surface	1
Slight roughness of hair surface	2
Rough hair surface	3

**Table A2 [20]**

2. Hair fall > 100 per day	Score
Absent 0 – 50	0
Mild (hair fall on washing) 51 - 100	1
Moderate (hair fall on combing) 101- 150	2
Severe (hair fall on simple strengthening) > 150	3

**Table A3 [20]**

<b>3. Hair loss or Alopecia</b>	<b>Score</b>
Scalp not seen by naked eye	0
Scalp slightly seen by naked eye	1
Scalp can be seen by naked eye/thinning of hairs	2
Scalp clearly seen by naked eye/bald Patch	3

B. Evaluation of results was done on the basis of Improvement (%)

**Table B1 [20]**

<b>1. Hair texture</b>	<b>Improvement</b>	<b>Result %</b>
Rough hair surface	Poor to Less	0-25
Slight roughness of hair Surface	Fair	50
Occasional roughness of hair surface	Good	75
Smooth hair surface	Excellent	100

**Table B2 [20]**

<b>2. Hair fall</b>	<b>Improvement</b>	<b>Result %</b>
Severe > 150 (hair fall on simple stretching)	Poor or Less	0-25
Moderate 101- 150 (hair fall on combing)	Fair	50
Mild 51 - 100 (hair fall on washing)	Good	75
Absent 0 – 50	Excellent	100

**Table B3 [20]**

<b>3. Hair loss</b>	<b>Improvement</b>	<b>Result %</b>
Scalp clearly seen by naked eye/bald patch	Poor or Less	0-25
Scalp can be seen by naked eye/ thinning of hairs	Fair	50
Scalp slightly seen by naked eye	Good	75
Scalp not seen by naked Eye	Excellent	100

3. Images of the patients were taken before and after the trial and used for analysis.

### 3.1.5 Statistical tests

Wilcoxon signed rank test.

### 3.1.6 Withdrawal criteria

If any type of side effect were observed during study.

If aggravation of symptoms occurred.

If patient is not willing to continue the treatment.

### 3.1.7 Dissemination policy

The information will be dispersed by paper distribution, Personal visit and through multimedia. Creation qualification rules and any proposed utilization of expert scholars.

## 4. RESULTS AND DISCUSSION

*Ipomoea carnea* is a tropical shrub does not mentioned in any classical text Ayurveda; but it is used by traditional healers since long ago claiming effective in *Indralupta* disease. *Indralupta* (Alopecia Areata) is categorised in Kshudra roga is a type of Skin disease characterised by hair loss in specific manner. Local application of medicine in skin diseases serves important and effective role. Here, folklore claim is about the same mode of application and found actual in the field survey. No one such study on *Ipomoea carnea* in *Indralupta* (Alopecia areata) found in review. Studies on *Indralupta*(Alopecia Areata) in Ayurveda and Allopathy system of medicine mainly focused on local application or interventions and use systemic medicine secondarily. Aaditya Bhavanbhai Shah et al. was published a case study on *Indralupta* treated with *Jalukavcharana* [17].Mittal Shivani et al. used jaypal beeja lepa and *Jalukavcharana* to treat *Indralupta* [18].Rahul Shingadiya et al successfully treated a case of *Indralupta* with *Gunja beeja lepa*, *Gunja* oil and other oral medicines [19]. Kishan Ninama et al has done clinical study on alopecia areata with Systemic corticosteroids, intralesional corticosteroids and intralesional platelet rich plasma where intralesional corticosteroids considered the first line of treatment [20-24].

## 5. STRENGTH

More of the effective treatment modalities in the *Indralupta*(Alopecia Areata) are mainly tropical administrations. In present study same modality

is being used which will hopefully give positive result.

## 6. CONCLUSION

*Ipomoea carnia* leaf juice application is very easy mode of treatment and the plant is abundantly available in field. Positive results will be more helpful than current treatment scenario in the management of Idralupta (Alopecia Areata).

## 7. LIMITATION

The plant material is not from classical literature and such studies are not conducted earlier hence it is taken as a pilot study and it is being conducted with minimal sample size.

## ETHICAL APPROVAL

The present study has approved by Institutional ethical committee on 22/02/2021. Ref.No.MGACHRC/IEC//February-2021/194.

## CONSENT

The consent has taken from the patient before starting the assessment. During the investigation the classification of every patient will be kept up. With all the data model assent structure and other related documentation has given to members in the language the individual understand.

## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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