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Case Report

Chronic plaque psoriasis treated with topical Unani formulation *Marham Ḥina* – A series of case reports

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ABSTRACT

Background: Although psoriasis treatment has advanced significantly in recent years, the disease remains incurable and relapsing. Alternatively, several potent systemic and topical formulations have been described in the Unani (Greco-Arab) system of medicine for conditions clinically similar to psoriasis, but there is a dearth of scientific evidence.
Aim: The purpose of this study was to investigate the efficacy and safety of the Unani formulation Marham Ḥina in chronic plaque psoriasis.
Methods: Seven patients with chronic plaque psoriasis, were treated with Marham Ḥina for 12 weeks.
Results: The mean ± SD of the psoriasis area and severity index (PASI) was significantly decreased from 24.00 ± 10.18 at baseline to 2.00 ± 1.29. One case attained PASI 100, two cases attained PASI 95, another two cases attained PASI 90, and the remaining two cases attained PASI 75.
Conclusion: The trial formulation appears to have a strong anti-psoriatic effect, while posing no adverse effects. However, more precise prospective clinical studies are recommended to confirm its scientific validity

1. Introduction

Psoriasis is a common chronic inflammatory disorder of the skin manifested as sharply demarcated, circumscribed, erythematous, pruritic, scaly papules and or plaques [1]. It affects 0.51–11.43 % of adults worldwide and up to 1.37 % of children [2]. In India, its reported prevalence ranges from 0.4 % to 2.8 % [3]. The exact causes of psoriasis remain unclear and the mechanism of immune response is also not well understood. However, hyperproliferation of keratinocytes, acanthosis, parakeratosis, and T cell-mediated inflammatory response are some reported findings for its pathophysiology [4]. The conventional treatment for psoriasis includes the use of topical corticosteroids with vitamin D analogs for mild cases [5]; phototherapy (Psoralen + ultraviolet light A), systemic therapy (methotrexate, acitretin, or cyclosporine), apremilast, and biologic agents for moderate to severe cases [6].

The disease remains largely incurable and recurrent amidst all of these treatments. Moreover, some of these medications are associated with serious adverse effects, such as carcinogenesis, hepatotoxicity, and worsening of the disease [7]. Thus, exploring novel and alternative treatments with potent anti-psoriatic action is urgently needed.

Psoriasis is clinically similar to *Taqashshur al-Jild* in Unani medicine [8] and is caused by the accumulation of *Sawdā' Ghalīẓ* (thick black bile) in the skin, which interferes with its normal functions, resulting in the shedding of dead skin in the form of scales [9]. The treatment is based on the evacuation of *Sawdā' Ghalīẓ* (thick black bile), *Taṣfiya al-Dam* (purification of blood), *Tajliya-i Jild* (cleansing of the skin), *Teḥlīl* (resolution of inflammation), *Taskīn* (local sedation), *Dāfi'-i 'Ufūnat* (disinfectant), and *Tarṭīb-i Badan* (moisturizing the body). Based on this therapeutic principle, numerous systemic and topical drugs as well as *'Ilāj bi'l Tadābīr* (therapeutic regimens) have been described in Unani classical texts [10]. The topical Unani formulation, *Marham Ḥina* has *Tajliya-i Jild* (skin cleansing), *Muḥallil* (resolvent), *Musakkin* (local sedative), and *Dāfi'-i 'Ufūnat* (disinfectant) proprieties. Hence, it is prescribed for conditions similar to psoriasis [11], but the formulation has not been scientifically evaluated for psoriasis as a single entity and,

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thus, this study was conducted to explore its efficacy and safety in the treatment of psoriasis.

The data from the participants in this study were obtained in accordance with the principles of the Helsinki Declaration. After obtaining written informed consent from the participants, they were instructed to apply the ointment to the affected area twice a day in an amount sufficient to cover the skin lesions. No concomitant therapy was permitted during the course of the study. This series of case reports followed the CARE case report guidelines [12] and publication guide for integrative medicine case reports [13].

2. Presenting concerns

The study included seven adult males aged 23–49 years old who presented to the outpatient department (OPD) of the National Research Institute of Unani Medicine for Skin Disorders in Hyderabad, India, with 2–13 years of chronic plaque psoriasis and who had not taken any medication for psoriasis in the previous month (Table 1).

3. Clinical findings

All the participants had no family history of psoriasis. The mean ± SD of chronicity of psoriatic lesions of all seven participants was 7.71 ± 3.64 years (min-max 2–13). The Auspitz sign (appearance of small pinpoint bleeding after scraping off the scales [14]) was positive, and erythema, induration/thickness, and scaling were also present in all cases. Moreover, all patients had previously received unsuccessful treatments with 1–4 different drugs from the allopathic, homeopathic, and Ayurvedic systems of medicine before the Unani drug was advised (Table 1).

4. Timeline

The first participant received treatment on December 2, 2020, and the last participant completed 12 weeks of treatment on April 6, 2021.

5. Diagnostics and assessment

Chronic plaque psoriasis was diagnosed based on clinical evaluation, and the response to therapy was assessed using the psoriasis area and severity index (PASI) score at baseline and after 12 weeks of treatment. In addition, photographs of the lesions were taken before and after treatment (Fig. 1). For safety evaluation, hemogram, liver function tests (LFTs), kidney function tests (KFTs), and complete urine tests were performed at baseline and after 12 weeks of therapy.

6. Therapeutic measure

The trial formulation *"Marham Ḥina"* was chosen from the National Formulary of Unani Medicine, a Unani pharmacopeia published on behalf of the Department of Ayush, Ministry of Health & Family Welfare, Government of India by the Central Council for Research in Unani Medicine. The ingredients of Marham Hina, as well as their bioactive components and known effects, are detailed in Table 2. It was prepared as an ointment in the GMP-certified pharmacy of the National Research Institute of Unani Medicine for Skin Disorders (NRIUMSD), Hyderabad, India, in accordance with the National Formulary of Unani Medicine [11].

7. Follow up and outcomes

The participants were followed up every 4th, 8th, and 12th weeks. PASI assessments and laboratory investigations were performed at baseline and upon completion of the 12-week treatment duration, whereas safety assessments, including local dermal tolerability and vital sign changes, were performed at each follow-up visit. The mean ± SD of PASI score was significantly reduced from 24.00 ± 10.18 at baseline to 2.00 ± 1.29 after 12 weeks of treatment ($p < 0.001$). Out of 7 participants, 1 participant attained PASI 100 (100 % reduction in PASI score from baseline), 2 participants attained PASI 95 (95 % reduction in PASI score), another 2 participants attained PASI 90 (90 % reduction in PASI score) and the remaining 2 participants attained PASI 75 (75 % reduction in PASI score) (Table 3). During the treatment period, no adverse

Table 1
Clinico-demographic profile of the participants studied.

Patient no.	Age (years)	Sex	Profession	Family history of psoriasis	Site (s) of lesion	Disease chronicity (years)	Past interventions	Outcome of past interventions	Other clinical findings	Timeline of trial therapy (dd/mm/yy)
Case 1	32	Male	Engineer	None	Abdomen, back, arms, and legs	2	Oral and local steroids 4 months back	Temporary relief in symptoms	Not significant	02/12/20–01/03/21
Case 2	38	Male	Engineer	None	Abdomen, back, and legs	10	Oral and topical steroids for 6 months and Ayurvedic treatment for 1 year	Relief in itching and scales also disappeared temporarily	Not significant	04/12/20–02/03/21
Case 3	29	Male	Student	None	Abdomen, back, arms, and legs	5	Allopathic treatment for 4 months and homeopathic treatment for 1 year	Complete relief was achieved by homeopathic treatment but relapsed after some time	Not significant	15/12/20–12/03/21
Case 4	43	Male	Electrician	None	Legs, arms, abdomen, and back	13	Systemic and topical steroids for 6 years	Initially, improvement was there, but after 6 years no improvement	Not significant	17/12/20–13/03/21
Case 5	30	Male	Laborer	None	Head, abdomen, back, arms, and legs	7	Took medication from local practitioner intermittently	Temporary symptom relief	Not significant	22/12/20–17/03/21
Case 6	23	Male	Student	None	Arms and legs	7	Systemic and topical steroids for 6 years	Got no satisfactory relief	Not significant	29/12/20–30/03/21
Case 7	49	Male	Unemployed	None	Abdomen, back, arms, and legs	10	Ayurvedic treatment for 1 year	Got no satisfactory relief	Not significant	05/01/21–06/04/21

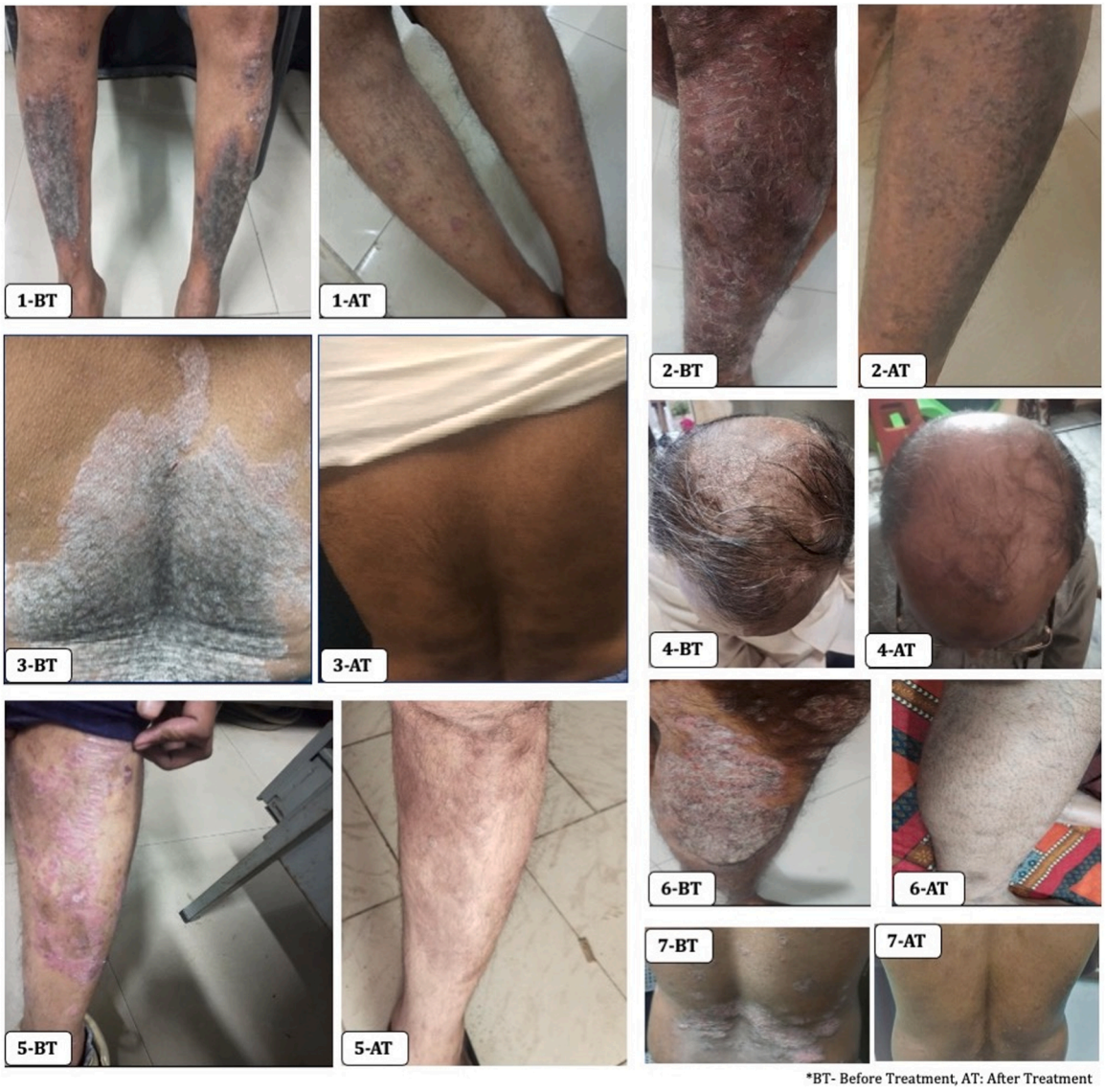

Fig. 1. Response to *Marham Ḥina* after completion of 12 weeks of treatment.

effects were observed, and all laboratory results were within normal limits.

8. Discussion

The efficacy of *Marham Ḥina* in the treatment of chronic plaque psoriasis has been explored in this study. The reduction in disease activity may be attributed to its *Dāfi-i Waram* (anti-inflammatory), *Dāfi-i 'Ufūnat* (disinfectant), *Mumallis* (emollient), and *Musakkin-i Maqāmi* (local sedative) properties as described in the classical Unani literature [11], corroborated by pharmacological studies of its ingredients. *Ḥina* (*Lawsonia inermis*), the primary active ingredient of *Marham Ḥina*, possesses anti-inflammatory, antioxidant, analgesic, wound healing, and immunomodulatory properties [24]. *Kāfūr* (*Cinnamomum camphora*), the second active ingredient, has analgesic, antiseptic, antipruritic, anti-inflammatory, and antimicrobial properties [17]. In addition, it is used as a skin penetration enhancer, which can make topical drug delivery to plaque psoriatic lesions more feasible [25]. *Ajwāin* (*Trachyspermum ammi*) is another important ingredient in *Marham Ḥina,* which possesses anti-inflammatory, antioxidant, antiseptic, antiulcer, and anesthetic properties [21,26], while *Pudīna* (*Mentha arvensis*) possesses anti-inflammatory and sedative properties [27], and has also been reported as a topical vasodilator that increases the absorption of topical drugs [20]. Moreover, the *Marham* (ointment) vehicles, including beeswax and petroleum jelly, exhibit moisturizing, mild wound healing, emollient, antibacterial, and anti-inflammatory properties [22,23].

Biochemically, the principal bioactive constituents of *Lawsonia inermis, Cinnamomum camphora, Mentha arvensis,* and *Trachyspermum ammi* are lawsone [15], camphor [17], menthol [19], and thymol [21], respectively (Table 2). The amelioration of signs and symptoms of chronic plaque psoriasis can be linked to all of these bioactive ingredients.

To summarise, the anti-inflammatory activity of *Ḥina* (*Lawsonia inermis*), *Kāfūr* (*Cinnamomum camphora*), *Ajwāin* (*Trachyspermum ammi*), and *Pudīna* (Mentha arvensis), as well as the emollient properties of *Ḥina* (*Lawsonia inermis*) and *Kāfūr* (*Cinnamomum camphora*), all appear to contribute to the reduction of inflammation and acanthosis; the wound healing property of *Ḥina* (*Lawsonia inermis*) appears to be critical in minimizing pin-point bleeding; the anti-pruritic property of *Kāfūr* (*Cinnamomum camphora*), analgesic property of *Ḥina* (*Lawsonia inermis*), sedative property of Pudina (*Mentha arvensis*), and the wound healing property of henna may all contribute to the improvement in clinical characteristics of psoriasis. Still, additional research is required to confirm the efficacy of each component of *Marham Ḥina* in chronic

Table 2
Components of Marham Hina with their bioactive constituents and reported actions.

Drugs (Scientific name)	Part used	Quantity	Bioactive constituents	Actions
Roghan Ḥina (*Lawsonia inermis* L.)	Leaf oil	1.5 L	The leaves contain naphthoquinones, in particular lawsone; coumarins (laxanthone, I, II, and III); flavonoids, luteolin, 7-O-glucoside, and tannins [15].	Antioxidant, antifungal, antibacterial, antihemorrhagic, antispasmodic, oxytocic, antifertility, and antibacterial properties [15,16].
Kāfūr (*Cinnamomum camphora* (L.) J. Presl.)	Camphor	15 g	Camphor [17]	Topical analgesic, antiseptic, antipruritic, anti-inflammatory, and anti-infective properties [17].
Satt-i Pudīna (*Mentha arvensis* L.)	Dried herb extracts	7 g	Menthol (up to 95%) and menthone are the main components [18]. Other components are chrysin, p-coumaric acid, naringenin, scopoletin, phenylpyruvic acid, pinocembrin, hesperidin, carnosic acid, and caffeic acid [19].	Menthol is a vasodilator that facilitates the absorption of other topical medications [20]. Used externally for myalgia and neuralgia as well [18].
Satt-i Ajwain (*Trachyspermum ammi* (L.) Sprague)	Dried fruits extracts	7 g	The fruit, in addition to protein, fat, carbohydrates, and mineral matter, contains sugars, tannins, flavone, and sterol [18]. Volatile oil extracted from the fruit of Ajwain includes thymol, p-cymene, c-terpinene, and α-and β-pinene. Minerals include calcium, iron, phosphorus, and nicotinic acid [21].	Antiseptic, antiulcer, and anesthetic properties [21].
Mom Khālis (beeswax)	wax	70 g	Major hydrocarbons include heptacosane, nonacosane, hentriacontane, pentacosane, and tricosane, as well as free fatty acids and alcohols, linear wax monoesters, hydroxymonoesters derived from palmitic, 15-hydroxypalmitic, and oleic acids, and complex wax esters containing 15-hydroxypalmitic acid and diols [22].	Anti-inflammatory and antibacterial properties. Used in different cosmetics as a vehicle, thickener, emollient, and emulsifier [22].
Vaseline Safaid (petroleum jelly)	Jelly	30 g	Mixture of mineral oils and waxes	Moisturizing and mild wound healing properties [23].

Table 3
Reduction in psoriasis area and severity index (PASI) after completion of 12 weeks of treatment.

Cases	PASI score (before treatment)	PASI score (after 12 weeks of treatment)	Reduction in PASI score (%)
Case-1	28.40	2.40	91.50
Case-2	31.00	2.30	92.60
Case-3	12.40	0.00	100.00
Case-4	16.00	0.50	96.90
Case-5	25.00	3.50	86.00
Case-6	14.80	3.10	79.00
Case-7	40.40	2.20	94.60
Statistical analysis	**Mean ± SD 24.00 ± 10.18**	**Mean ± SD 2.00 ± 1.29**	**PASI 75 →2 cases PASI 90 →2 cases PASI 95 → 2 cases PASI 100 → 1 case**
	p < 0.001 (paired sample t-test)		

plaque psoriasis.

Strengths and limitations of the study

Although the data presented in this study are very limited, the observed changes are significant enough to warrant further investigation. We believe that the observed changes are due to the trial formulation, which contributed to the improvement in psoriatic lesions. However, additional evaluation of *Marham Ḥina* in chronic plaque psoriasis is required through rigorously designed randomized controlled clinical studies.

Patients perspective

All seven patients expressed that after 12 weeks of treatment with *Marham Ḥina*, all of their symptoms, including itching, redness, and scaling, had resolved completely.

Informed consent

Patients were informed about the study procedure and publication of their de-identified data in their native language before enrolment, and written informed consent was obtained from all the patients.

Ethical statement

Research involving human subjects complied with all relevant national regulations, institutional policies and is in accordance with the tenets of the Helsinki Declaration (as revised in 2013), and has been approved by the investigator's local Institutional Review Board.

CRediT authorship contribution statement

Faiza Khatoon: Conceptualization, Methodology, Investigation, Data curation, Writing – original draft, Project administration. **Arzeena Jabeen:** Validation, Resources, Data curation, Supervision. **Qamar Uddin:** Validation, Resources, Data curation, Writing – review & editing, Supervision. **Mohd Azahar:** Conceptualization, Methodology, Validation, Investigation, Data curation. **Nazim Husain:** Conceptualization, Methodology, Validation, Data curation, Writing – Review & Editing, Visualization. **Md Sanaul Moin**: Validation, Data curation, Resources,

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