

## Effectiveness of yoga and naturopathy intervention on palmar psoriasis - a case report

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### ABSTRACT

Palmar psoriasis is a chronic variant of psoriasis that affects the skin of the palms producing significant functional disability. It is usually triggered by environmental factors such as trauma, infections, medicines, metabolic / hormonal factors, stress, alcohol use, smoking and lifestyle. Worldwide 2% population are affected by psoriasis, whereas in India 0.4% - 2.8% are affected. Yoga and Naturopathy (YN) is a widely used traditional healing science that encompasses holistic approach in prevention and treatment of diseases. A 25 years old male presented with palmar psoriasis underwent YN- based lifestyle interventions which includes hydrotherapy, mud therapy, yoga therapy and acupuncture for a period of 24 days. Baseline PASI score and PSS scores were 1.26% and 26 respectively. Both PASI score and PSS score reduced considerably after treatment. This case report indicates that YN have a positive role in reinstating palmar psoriasis. However large-scale studies are warranted to bestow better care

**Keywords-** Palmar psoriasis, Yoga and Naturopathy, PASI score.

Psoriasis is a chronic, non-communicable, inflammatory, painful, disfiguring and disabling disease affecting skin, nails and joints [1]. It is characterized by erythematous itching plaques covered with silvery scales [2]. Worldwide 2% population are affected by psoriasis, whereas in India 0.4% - 2.8% are affected [3]. psoriasis is multi-factorial and it is believed to be auto-immune with marked hyperproliferation and abnormal epidermal differentiation. This activity is mainly regulated by cytokines TNF- $\alpha$ , IL-1, IL-20, IL-22 and NF- $\kappa$  B [4]. psoriasis, erythrodermic psoriasis, palmoplantar psoriasis, impetigo herpetiformis and inverse psoriasis [5]. Untreated psoriasis may lead to psoriatic arthritis, cause negative impact on patient's quality of life and act as a risk factor for many diseases [6]. Conventionally psoriasis is treated by

corticosteroids, immune suppressors like methotrexate, PUVA (Psoralen Ultra-violet - a) therapy, vitamin A and vitamin D supplements. The untoward effects of long-term use of corticosteroids and immune suppressors seek great attention towards non-pharmacological agents to treat psoriasis [7]. YN is a safe and cost-effective non-pharmacological remedy encompassing holistic approach in prevention and treatment of diseases, that is widely used to treat psoriasis.

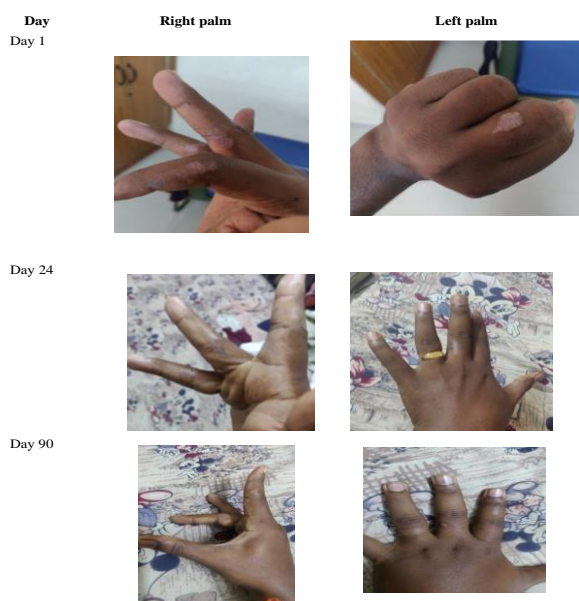
### CASE REPORT

A 25 years old male visited out-patient department of Government Yoga and Naturopathy Medical College and Hospital on 03.08.2021 with complaints of white itchy

patches on both hands since 2019. On physical examination, lesions were present in and around the proximal interphalangeal joints and proximal phalanges of index, middle and ring finger of right palm, and also in the middle finger of left palm. On both the palms lesions were hyperkeratotic, non-erythematous, white silvery scales with the absence of subungual hyperkeratosis, coarse pitting and longitudinal ridges. During the acute stage of disease, itching was intolerable for which he had visited a dermatologist and got diagnosed with palmar psoriasis in 2019. Immediately after the diagnosis he had consulted an ayurvedic physician and was under ayurvedic medication for the period of six months from May to October 2019 and he was unaware about the medication which he had taken during the time of visit to our hospital. He was unsatisfied by the ayurvedic medication since itching and scaly lesion was persisted and also admitted that intensity of the itching Psoriasis Area and Severity Index (PASI) was assessed by using plaque characteristic, percentage of area affected and body surface area involved, stress was assessed by using

Note: GV - Governing vessel, SP - Spleen, LU - Lung, BL - Urinary bladder, LI - Large intestine.

Perceived Stress Scale (PSS) which contained 10 questions related to the feeling and thoughts, weight, height, BMI and pulse rate was assessed at baseline and also on post intervention. This case report was aimed to explore the effectiveness of YN interventions on reducing the severity of palmar psoriatic lesions and stress level of the patient.



**Figure 1: Clinical images at various time interval before and after intervention**

**Table 1: Intervention details**

Therapy		No. of sessions	Duration (minutes / session)
Mud therapy	Mud pack over abdomen	10	20
	Full mud bath	1	40
Heliotherapy	Sun bath	22	15
Acupuncture	GV -14, Bilateral: SP-10, LU -5, BL -40, LI -5.	20	20
Yoga therapy	Nadi shodana pranayama	40	5
	Bhramari pranayama	30	5
	Cyclic meditation	20	45
	Quick relaxation technique	4	20

**Table 2: Diet details**

Morning 7.00 am	Breakfast 9.00 am	Mid-morning 12.00 am	Lunch 2.00 pm	Evening 4.00 pm	Dinner 7.00 pm
Ash gourd / curry leaves / mint / plantain pith juice - 250 ml	Vegetables (carrot, beetroot, cucumber, Pumpkin) -100g, Fruits (banana, pomegranate, muskmelon - 100g and sprouts (green gram) - 25g	Amla / cucumber / lemon / grapes juice - 250 ml	Fruit salad (papaya, banana, orange) - 100g and sprouts (green gram) - 50 g	Amla / lemon / sapota / beetroot juice -250 ml	Vegetable (carrot, beetroot, cucumber, Pumpkin) 100g, and fruits (watermelon, guava, pineapple, banana) -100g

## DISCUSSION

Results showed improvements in PASI, PSS, weight, and body mass index [Table 3]. This shows the effectiveness of 24-days YN interventions in reducing the severity of palmar psoriasis and associated stress. The baseline PASI and PSS score of 1.26% and 26 respectively reduced into 0% and 13

correspondingly. After 24 days of intervention patient had no itching and complete absence of hyperkeratotic erythematous plaque. Lesions did not relapse after the intervention. Previous studies show that stress and skin diseases are interrelated and moreover 40-70% cases psoriasis is triggered by stress [8]. Practice of yoga such as asana, meditation and relaxation technique known to alleviate stress and also brings about parasympathetic dominance [9]. Regular practice of yoga reduces pro-inflammatory cytokines IL-1, IL-6 and TNF- $\alpha$  and also increases IL-10 which acts as anti-inflammatory cytokine [10,11]. Exposure to sun rays reduces the CD4+ and CD8+ T-cells, and regulates the local and systemic inflammatory reactions and also rejuvenates the skin [12,13]. Also, Sunlight helps in the production of vitamin- D inhibits hyperproliferation of keratinocytes [14].

Mud therapy helps to reduce the excess heat in blood and has a capacity to absorb some toxic substances in body [15]. In addition, application of mud as a direct influence on skin microbiome thereby modulating immune function and inflammatory responses [16]. According to Traditional Chinese Medicine (TCM), psoriasis is due to accumulation of excess wind heat, fire toxins in blood, and blood stasis [17]. Acupuncture points are used to expel excess heat in blood and to eliminate toxins in blood [18].

**Table 3: Assessment**

Variables	Baseline	Post-test
PASI (psoriasis area severity index)	1.6%	0%
PSS (perceived stress scale)	26	13
Weight (kilograms)	76.6	72
Height (meters)	1.80	1.80
BMI (kg/m <sup>2</sup> )	23.6	22.2
Blood pressure (mm Hg)	120/70	110/70
Pulse rate (beats per minute)	78	76

Fruits and vegetables are a good source of phytochemicals, which are the non- nutritive component of the plant as potential health benefits. Phenol, carotenoids, flavonoids and phytosterol acts as an antioxidant, exerts anti-inflammatory role and also has prevents progression of chronic diseases. [19,20]. Previous case report showed YN interventions have significant clinical improvement in palmar plantar psoriasis [21], similar to our findings. However large-scale randomized control trial is recommended to confirm the findings.

## CONCLUSION

This case report suggests that integrated yoga and naturopathy interventions have significant role in managing

symptoms and stress level of patients with palmar psoriasis. However large studies are needed to confirm the same.

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