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## Stress and psoriasis: An overview

**Kanhaiya Agrawal and Satyapal Singh**

### Abstract

It is well known in the present time and has been known since antiquity in Ayurveda, that a connection exists between skin and mind. Psoriasis is the best known for its association with stress and by far the most intensively studied for this association. Stress or related factors directly or indirectly involved in the etio-pathogenesis of many dermatological disorders including psoriasis and vice versa. Psoriasis is associated with mental and socio-economic embarrassment in the society which leads to psychological stress and aggravate the pre-existing disease. Studies reported that 40–60% cases of psoriasis triggered by stress. Psoriasis produces anxiety, depression, and other psychological problems. These have a psychosocial impact on behavior of the patients and affects quality of life, the affection can be compared with the Arthritis, Asthma or other disabling illnesses.

**Keywords:** stress, psychosomatic, psycho-social, psychological, psoriasis, quality of life

### Introduction

Psoriasis is a chronic inflammatory skin disorder clinically characterizes by erythematous sharply demarcated papules and rounded plaques covered by silvery micaceous scales. Psoriasis is non-infectious and notoriously chronic and is well known for its course of remissions and relapses<sup>[1]</sup>.

Since skin serves as an external protection therefore, skin is a major target for toxic insult by a broad spectrum of physical (i.e. UV radiation) and chemical (xenobiotic) agents that are capable of altering its structure and function. Skin is the largest body organ which provides a protective envelope that is crucial for homeostasis. Several environmental pollutants catalyzes the production of reactive oxygen species (ROS) directly or indirectly. ROS are believed to activate proliferative and cell survival signaling which leads to alteration in apoptotic pathways that may be involved in the pathogenesis of psoriasis, disorders of photosensitivity and in some types of cutaneous malignancies. ROS acts through the molecular pathways that play important roles in diverse pathologic processes including ischemia–reperfusion injury, atherosclerosis, and inflammatory responses. But, the skin possesses an array of defense mechanisms that interact with toxicants to obviate their deleterious effect. These include non-enzymatic and enzymatic molecules that function as potent antioxidants or oxidant-degrading systems.

Ayurveda recognizes the connection between skin and mind and the connection believed to be more than a physiological fact. Skin disorders can impact by several means on quality of life. Reciprocally, skin diseases can be evoked by psychological problems. The Ayurvedic scripture Charak Samhitahas described the skin (Tvachaa) as ‘Chetah Samvaayi’ i.e. the skin has an eternal relationship with Manas (psyche/mind). Therefore, any mental stress due to any cause has a direct impact on the skin. Thus, we can say that stress and skin diseases have an eternal relationship with each other<sup>[2]</sup>.

### Stress and Psoriasis

It is well acknowledged that stress and related factors have a unique role in the pathophysiology of numerous dermatological disorders. However, the strength of association between stress responses and the onset, recurrence or exacerbation of various skin diseases varies. Among the skin disorders psoriasis is well for its association with and by far the most intensively studied for this association with 40–60% of cases triggered by stress<sup>[3-7]</sup>.

Stress activates several neural pathways. The main stress response systems are the sympathetic-adrenal medullary system and the hypothalamic–pituitary–adrenal (HPA) axis<sup>[8]</sup>. Psychological factors like stress and other related factors have traditionally been associated with the onset, development and persistence of skin disease. Stress is emphasized as one of the

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major important factors in the initiation & exacerbation of skin diseases. In Ayurvedic texts, skin is described as one of the five 'Gyanendriyas', an organ which is responsible for Sparsha 'Gyan' or touch sensation. Therefore, it plays a major role in the physical and mental well being of an individual. More than a cosmetic nuisance, a skin disease produces anxiety, depression, and other psychological problems that affect the patient's life in many ways comparable to Arthritis, Asthma or other disabling illnesses<sup>[9]</sup>.

The skin is a biological barrier which protects us against multiple environmental insults. Free radicals induce or contribute to adverse effects on the skin, including erythema, edema, wrinkling, photo-aging, inflammation, autoimmune reactions, hypersensitivity, keratinization abnormalities, preneoplastic lesions, and skin cancer<sup>[10-11]</sup>.

Various types of pollutions, atmospheric gases, microorganisms, viruses and ultraviolet (UV) radiation all are the good source of various types of exogenous free radicals, whereas endogenous radicals are generated during normal cellular metabolism, immune reactions, and under pathological conditions<sup>[12]</sup>.

Just as in many dermatologic conditions, psoriasis appears to worsen with stress in a significant segment of patients. Studies report that the proportion of psoriasis patients who are stress-responders ranges from 37% to 78%<sup>[13]</sup>.

Various studies on stress define it in the three general categories

1. Major stressful life events (e.g., change of employment, major personal illness, financial problems)
2. Psychological or personality difficulties, and
3. Lack of social support.

Regardless of how stress is defined, studies consistently support a relationship between stress and psoriasis<sup>[14-20]</sup>.

Furthermore, a majority of patients consider stress to be the main cause for exacerbation of their psoriasis, ranking it above infections, trauma, medications, diet, or weather<sup>[21]</sup>.

Psoriasis itself can serve as a stressor for patients. Accordingly, patients often suffer significant interpersonal and psychological distress. Patients commonly experience difficulties in social interactions, especially in meeting new individuals and forming romantic relationships. In general, most patients demonstrate adverse psychological consequences, including poor self-esteem, anxiety, Depression and also developed suicidal ideas. Therefore, treatment considerations for psoriasis should integrate methods of stress reduction, including psychotherapy and pharmacotherapy, especially for known stress responders<sup>[22-24]</sup>.

### Management

The management strategies for psoriasis can be summarized into two categories viz. pharmacological and non-pharmacological therapy. Pharmacological means belong to three main groups, these are as follows<sup>[25]</sup>.

- Anti-depressants eg. amitriptyline, fluoxetine etc.
- Anxiolytics eg. Diazepam, alprazolam, buspirone, propranolol etc.
- Anti-psychotic drugs eg. Haloperidol, trifluoperazine, olanzapine etc.

A special class of drugs named as Rasayan is the principle pharmacological therapy in Ayurveda. Which can be used for the management of psoriasis. In this stressful, ever busy and

toxic environment, our natural health, happiness and inner sense of well-being are masked by the accumulation of impurities. A Rasayana (rejuvenation) therapy revitalises the sense, detoxify the body, and restore the health in normal state<sup>[26]</sup>.

Non-pharmacologic management for psoriasis includes both structured and unstructured interventions, reduce psychological distress, and improve the functional status of the affected individual. Non-pharmacologic techniques are often referred to as psycho-cutaneous interventions. Psycho-cutaneous interventions may not be disease-specific. All techniques can produce improved autonomic status and physiological calming (parasympathetic activation). There is a significant psychosomatic/behavioral component in psoriasis, hence complementary non-pharmacological psychotherapeutic interventions like biofeedback, CBT, hypnosis etc. have positive impacts on psoriasis<sup>[27-30]</sup>.

The strategies for non-pharmacological management of psoriasis include Daivavyapashraya Chikitsa, Satvavajaya Chikitsa, Pathyapathya (do's & don'ts regarding diet and behavioral conducts), non-pharmacological Rasayana like Achara Rasayana & others and Yoga therapy<sup>[31]</sup>.

### Conclusion

Now a days it is well acknowledged that the stress and related factors are the major culprits responsible for the initiation and or exacerbation of a wide range of disorders. Psoriasis is the disease which extensively studies for its relation with the stress. Psoriasis exerts more psychosocial impact on the sufferers due to its visibility or ugly nature of skin. It is need of time to promote the various pharmacological as well as non-pharmacological strategies which should be couples the ancient wisdom of Ayurveda, to educate the patients about psoriasis so that they can cope with psoriasis.

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