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## Review Article

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## An overview of Ayurvedic & contemporary approaches to Psychodermatology

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### Abstract

**Aim & objective:** The main objective of this paper is to increase the awareness of the psychodermal effect of different type of skin diseases with special reference to Psoriasis, Atopic dermatitis and Acne. **Basis of evidence:** The authentic subject material has been reviewed from Ayurveda and modern medical literature. Selected articles from dermatologic and psychiatric literature were reviewed and used as the basis for the discussion of how psychological factors & skin diseases interact with each other and affect patient's quality of life and selection of appropriate management. **Central Message:** This review is mainly focused on psychodermal effects of commonly encountered skin ailments - Psoriasis, Atopic dermatitis and Acne. Patients with the skin disorder always experience physical, mental and socioeconomic embarrassment in the society. This embarrassment leads to mental stress which further causes aggravation of preexisting disease. 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. **Conclusion:** The psychodermal aspect of skin diseases is underappreciated. Increased understanding of psychodermal comorbidities associated with skin diseases and a psychodermal approach to the management would ultimately improve patient's quality of life. In this way, the present review has made a humble effort to clearly understand psychodermal aspects of skin disorders.

**Keywords:** Stress, Kushtha roga, Skin disease, Psychodermatology, Quality of life.

### Introduction

The disease prevention and health promotive approach of 'Ayurveda', which takes into consideration the whole body, mind and spirit while dealing with the maintenance of health, promotion of health and treating ailments is holistic and finds increasing acceptability in many regions of the world.

It has been known since antiquity in Ayurveda that a connection exists between the skin and mind. Ayurveda described several factors like chinta, shoka, bhaya, abusing deities and teachers, different type of sinful activities and other forms of antirituals and antisocial activities which have a negative impact on the psyche/mind. This negative impact on mind leads to stress which in turn directly or indirectly plays a major role in the manifestation and aggravation of skin diseases (Kushtha rogas).

It is estimated that more than one-third of patients seeking treatment for skin disorders have underlying psychiatric problems complicating their skin conditions.

The first recorded case of psychodermatosis dates back to 1700 B.C., when the

physicians to the prince of Persia speculated that prince's psoriasis was caused by anxiety over succeeding his father to the throne.<sup>1</sup> Further, 62 years have passed since 'emotional factors in skin disease' was published. Since, then physicians and dermatologists in particular, have steadily become aware of the impact of the individual's emotional states on the skin diseases and how the skin can reflect, like a mirror, their psychological state. It should come as no surprise that these two structures have common origin in the ectoderm.

Psychological factors have traditionally been associated with the onset, development and persistence of skin disease.<sup>2</sup> Stress is emphasized as one of the 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. Patients with the skin disorder always experience physical, mental and socioeconomic embarrassment in the society. This embarrassment leads to mental stress which further causes aggravation of preexisting disease.

The psychological / psychodermatological approach of management of skin diseases (kushtha roga) in Ayurveda includes different pharmacological and non pharmacological tools. Pharmacological tools include mainly the use of Rasayanas. Non pharmacological tools include Daivavyapashraya and Satvavajaya Chikitsa. These have a positive impact on Manas and directly or indirectly lead to reduction in stress. Therefore the ultimate result is

- Reduction in frequencies of exacerbations.
- Improvement in clinical condition
- Increase ability to cope up with skin diseases.

Ayurveda is highlighted as a holistic system with its concern for prevention and promotion of stress and mental health and maintaining a healthy balance of Manas and Sharira (mind & body).

Ayurvedic medicines have great importance to keep body and mind free from diseases. The modern science of medicine slowly realized about chemical medicine that they have a devastating effect on several human systems by their side effects and toxicity and damage to the intestinal flora. Therefore, the whole world is looking

towards Ayurveda to cure of different chronic diseases. Skin disorders are one of them, which is much difficult to treat.

### Etiopathological Consideration

Acharya Charak has described the skin (Tvachaa) as 'Chetah Samvaayi' i.e. the skin has an eternal relationship with Manas (psyche/mind).<sup>3</sup> 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.

Ayurveda recognizes that the connection between the brain and the skin is more than a physiological fact. Skin conditions can impose great effects on every field in the patients' lives. Reciprocally, skin diseases can be evoked by psychological problems.

The psychosocial effect of skin diseases is considerable and underappreciated. Although skin conditions are usually not life-threatening, but they can be life-ruining due to their visibility.

Acharya Gayadaas has described improper food and improper conducts as the etiology of skin disease (Kushtha roga). He further categorizes the improper conducts into 3 groups, physical, verbal and mental.<sup>4</sup>

#### Improper physical conducts

1. Suppression of natural urges
2. Some environmental factors like excessive sun exposure, excessive exposure to air conditioned, contradicting with hot and humid environment/ exposure to sudden change in temperature, which is encountered regularly in today's life style due to use of air conditioners.
3. Physiological factors like over exertion, day sleep and late night sleep.
4. Improper therapeutic procedure (Panchakarma Apachaar).

#### Improper verbal conduct

Acharya Charak has described '*Vipraan Gurun Gharshayataam*' as the etiological factor of Kushtha (skin diseases in Ayurveda).<sup>5</sup> It means that behavioural misconduct or verbal sinful activities like abusing teachers, deities etc or other verbal antisocial activities directly or

indirectly produces psychogenic stress which is mainstay in the pathogenesis of most of the skin diseases.

### **Improper psychogenic conducts**

Most of the authors in Ayurveda considered Kushtha roga (skin diseases) as Paapkarmaja Vyaadhi (a disease due to sinful activities). Both Charak and Sushruta have described the skin disease as most chronic disorder.<sup>6</sup> Long standing diseases produce psychogenic stress to the patient, which further aggravates the preexisting disease.

Some forms of psychogenic stress like Bhaya, shoka itc cause Swedavaha Srotodushti, which is considered as an etiological factor of Kushtha roga (skin diseases). Another form of psychogenic stress, Chinta causes Dushti of Raktavaha Srotas which is also considered as an etiological factor of Kushtha roga (skin diseases).

### **Skin diseases and psychosocial stress**

Psychodermatology addresses the interaction between mind and skin. Psychiatry is more focused on the “internal” non visible disease, and dermatology is focused on the “external” visible disease. Connecting the two disciplines is a complex interplay between neuroendocrine and immune systems that has been described as the NICS, or the Neuro-immuno-cutaneous system. The interaction between the nervous system, skin, and immunity has been explained by release of mediators from NICS.<sup>7</sup>

Disfiguring dermatological conditions often run a chronic course, resulting in profound psychological morbidity, leading to secondary psychiatric disorders.<sup>8</sup> Psychophysiologic disorders refer to those cases of bona fide skin disorder, such as urticaria, psoriasis, acne, atopic dermatitis and rosacea that can be exacerbated by emotional stress. In examining distressed patients with a flare up of a real skin disorder such as eczema, it is important to determine how much of the emotional distress is psychosomatic and how much of it is somatopsychic in nature. A psychosomatic problem refers to a situation whereby external stresses such as occupational difficulty or family problems lead to worsening of the skin disease. Sometimes, both psychosomatic and somatopsychic elements may be active in creating a vicious cycle that perpetuates the flare up of the skin disease.

Inflammatory and sensory skin disorders are significantly influenced by stress and emotion. Stress can induce or

exacerbate anxiety disorders or depression in susceptible individuals.

It has been found that depression scores among psoriasis patients and the severity of skin disorders correlates directly with the severity of depression and frequency of suicidal ideation.<sup>9,10</sup> In a cross sectional survey, a 2.5% prevalence of suicidal ideation was observed among less severely affected psoriasis out-patients in contrast to 7.2% suicidal ideation among the more severely affected in-patients of psoriasis.<sup>11</sup> Psychiatric morbidity in acne is often the most important index of disease severity and often the most important factor for deciding whether or not to institute the treatment in acne especially in case of mild to moderate disease.<sup>12</sup> Psychiatric morbidity in acne can be severe and comparable to the disability resulting from other chronic disorders such as diabetes and asthma.

Dermatologists and primary care physicians frequently encounter important psychiatric issues affecting the diagnosis and management of patients with dermatologies complaints. Psychiatrists confront with frequent pruritus and rashes in their patients. A study of psychiatric inpatients excluding those with known skin diseases found that 33% of patients reported itching.<sup>13</sup>

A large case-control study comparing 560 patients with psoriasis to 690 patients with a new diagnosis of skin disease other than psoriasis found a high index of stressful life events associated with patients having more than doubled the risk of psoriasis compared to low scorers. However, the same study found that current and ex-smokers had approximately double the risk of psoriasis.<sup>14</sup>

Acne vulgaris is the most common dermatological condition encountered in adolescents. It affects almost 85% of people 12–24 years of age. It commonly affects young people during the time when they are undergoing maximum psychological, social and physical changes. Acne commonly involves the face. Facial appearance represents important aspects of one’s perception of body image. Therefore, it is not surprising that a susceptible individual with facial acne may develop a significant psychosocial disability. Even mild acne can pose a significant problem for some patients, diminishing their quality of life and in some cases their social functioning.<sup>15</sup>

However, the relationship between the severity of acne and emotional distress is poorly understood although it is

known that acne is a source of distress and embarrassment.<sup>16</sup>

A study that reviewed the prevalence of psychiatric symptoms in psoriasis patients found a higher rate of psychiatric disorders than in the healthy population.<sup>17</sup> Similarly, another study found that the prevalence of psychiatric disease among psoriasis patients was less than in psychiatric patients but higher than in healthy controls.<sup>18</sup>

Most patients with psoriasis experience unpredictable exacerbations throughout life. The pathogenesis of psoriasis appear to involve genetic and environmental factors, influencing the body's systems of skin repair, inflammatory defense mechanisms, and immunity.<sup>19,20</sup>

Higher anxiety and depressive symptoms have been reported in the patients with atopic dermatitis. The anxiety may be a feature of an underlying depressive illness in some of these patients.<sup>21</sup>

Atopic individuals with emotional problems may develop a vicious cycle between anxiety/depression and dermatologies symptoms. In one direction of causality, anxiety and depression are frequent consequences of the skin disorder. In the other direction of causality, anxiety and depression aggravate atopic dermatitis. This may occur via several possible mechanisms, including modulation of pruritus perception, acceleration of immune responses or perturbation of epidermal permeability barrier homeostasis.<sup>22-24</sup>

### **Role of stress in the pathogenesis of skin diseases**

It is well acknowledged that psychological stress plays an important role in the pathophysiology of numerous skin disorders. However, the strength of association between stress responses and the onset, recurrence or exacerbation of various skin diseases varies. The skin disease best known as the stress associated and by far the most intensively studied for this association is psoriasis, with 40–60% of cases triggered by stress.<sup>22-29</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>30</sup>

**Hypothalamic-Pituitary-Adrenal (HPA) Axis:**

Corticotropin-releasing hormone (CRH) is a central component of the HPA axis and regulates the expression of pro-opiomelanocortin (POMC) and POMC-derived peptides [adrenocorticotropin (ACTH), melanocyte-stimulating hormone (MSH) and endorphin] from the anterior pituitary gland.<sup>31</sup>

During acute stress response, the paraventricular nucleus of the hypothalamus releases CRH. CRH then acts on the pituitary gland to induce a release of adrenocorticotrophic hormone (ACTH), which in turn causes the adrenal cortex to release cortisol. CRH, the main coordinator of the stress response can be secreted by various skin cells, including epidermal and hair follicle keratinocytes, sebocytes and mast cells.<sup>32</sup> CRH has a pleiotropic effect in the skin depending on the cell type and experimental growth conditions. CRH stimulates diverse signaling pathways via CRH-R1 activation, which modulates proliferation, differentiation, apoptosis and pro- or anti-inflammatory activities of skin cells.<sup>33-34</sup>

After psychosocial stress, psoriasis patients showed an increased number of activated T cell with a shift towards a Th1-derived cytokine profile and increased number of cutaneous lymphocyte-associated antigens-positive T cells and natural killer cells in the circulation, which was pathologically relevant in aggravation of psoriatic plaques.<sup>35-36</sup>

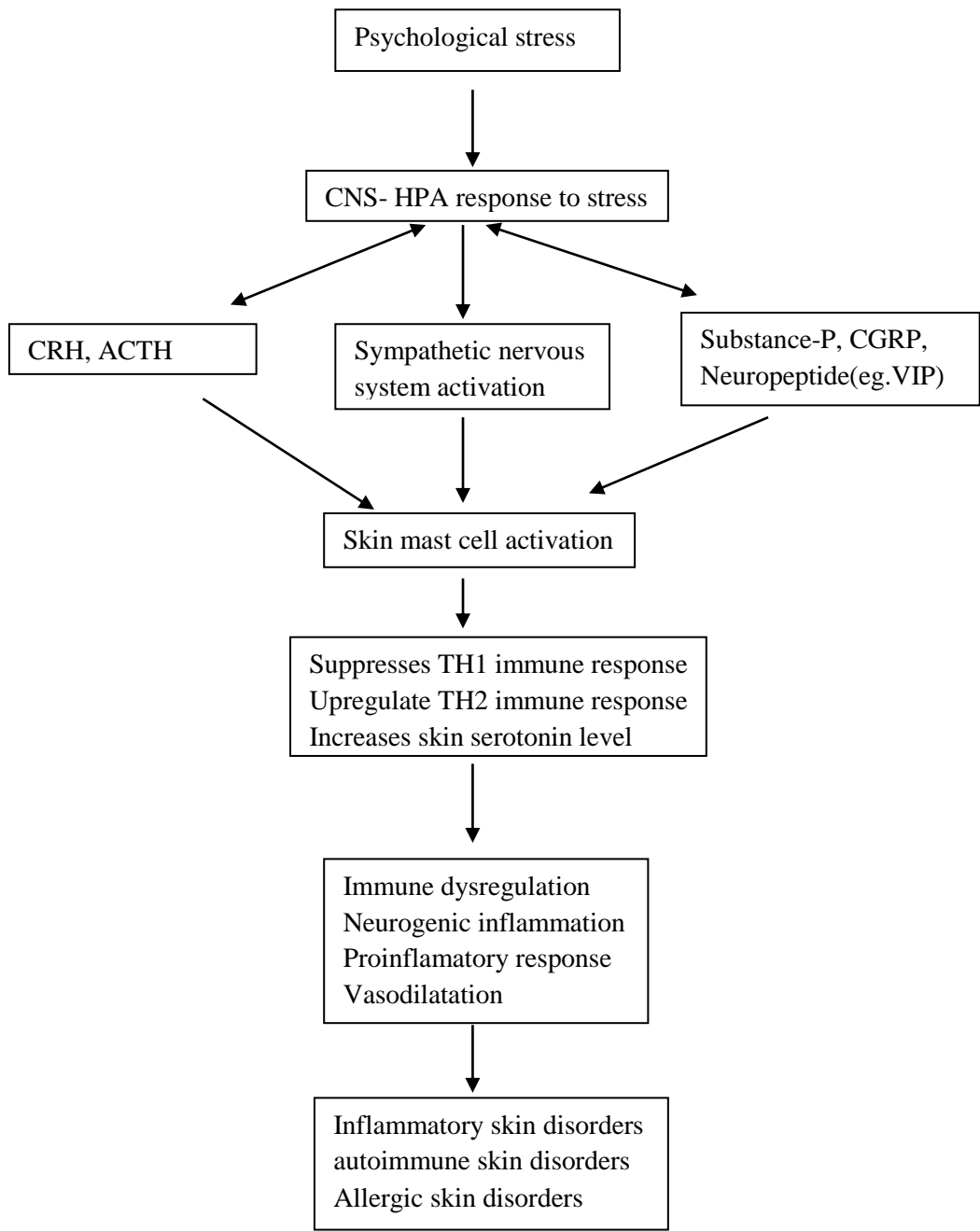
Substance-P (SP), one of the stress neuropeptides, is suggested to have a role of neurogenic inflammation in the pathogenesis of psoriasis. Expression of SP and its receptor correlated with the severity of depression and was associated with low level of cortisol, which indicates chronic stress.<sup>37</sup> Emotional stress was shown to cause a release of SP from neurons.<sup>38</sup> Cutaneous nerves and SP also play an important role in the pathogenesis of Atopic dermatitis.<sup>39</sup> SP also play a critical role in stress induced mast cell degranulation in mice.<sup>40</sup>

Schematic presentation of the various factors originating from stress shown in figure 1. It is a Modified from of Lev Pavlovsky 2007.<sup>41</sup>

**Sympathetic- adrenal medullary system:**

Its activation causes central sympathetic discharge and peripheral sympathetic outflow, resulting in secretion of NE from nerve fiber terminals, and adrenaline (or epinephrine), which is secreted from the adrenal medulla. During the stress response, both molecules are invariably

present in the circulation. The main mechanism involved in response to stress in the skin is sympathetically mediated active vasodilatation. The best evidence existing now for this vasodilatation points to sympathetically release cholinergic co-transmitter<sup>42</sup> and nitric oxide.<sup>43</sup>



**Figure 1:** Schematic presentation of the various factors originating from stress and leading to various types of skin diseases through the activation of the HPA axis and PNS which may affect the skin directly or through modulation of the immune system.

VIP= Vasoactive intestinal polypeptide, CGRP = Calcitonin gene related peptide

Here, we have reviewed the up-to-date knowledge of mechanisms proposed to underlie stress-induced skin diseases, from stress perception by the brain’s cerebral cortex to the appearance of skin lesions. Since the brain and the skin communicate in both directions through the

immune and the neuroendocrine systems, stress effects on skin disease must be mediated through these systems. Thus, when searching for understanding of the mechanism underlying the role of stress action in skin diseases, we should understand the role of stress-induced activation of

the neuroendocrine system in the inflammatory cascade and the skin immune system.

### Psychodermatology and quality of life (QOL)

The social stigma of a visible skin disease, frequent visits to doctors and the need to constantly apply messy topical remedies all add to the burden of disease. Lifestyle restrictions in more severe cases can be significant, including limitations on clothing, staying with friends, owning pets, swimming, or playing sports.

Psoriasis, atopic dermatitis and acne are among the most common skin conditions presenting to primary care physicians. They are the most studied in how they affect psychosocial health.

The misery of living with atopic dermatitis may have a profoundly negative effect on health-related quality of life (HRQOL) of children and their families. Intractable itching causes significant insomnia, and sleep deprivation leads to fatigue, mood lability, and impaired functioning. Teasing and bullying by children and embarrassment in adults and children can cause social isolation and school avoidance. The impairment of quality of life caused by childhood atopic dermatitis has been shown to be greater than or equal to that of asthma or diabetes.<sup>44</sup>

Psoriasis is associated with substantial impairment of HRQOL, negatively impacting psychological, vocational, social, and physical functioning.<sup>45</sup> In a study of 369 patients with psoriasis, 35% were reported that their condition affected their careers, 20% reported that they were substantially impaired in performing their work.<sup>46</sup>

Acne has a demonstrable association with depression and anxiety; it affects personality, emotions, self-image and esteem, feelings of social isolation, and the ability to form relationships.<sup>47-50</sup> Its substantial influence is likely related to its typical appearance on the face, and would help explain the increased unemployment rate of adults with acne.<sup>51</sup> Acne's effect on psychosocial and emotional problems, however, is comparable to that of arthritis, back pain, diabetes, epilepsy, and disabling asthma.<sup>52</sup>

### Psychodermal morbidity

In addition to the effects of depression on possibly triggering psoriasis and certainly reducing disease-related quality of life, suicide is a concern. One study found that

10% of adults with psoriasis reported suicidal ideation during the previous 2 weeks.<sup>53</sup>

In a study of a different sample, Gupta and colleagues found that 9.7% of patients with psoriasis reported a wish to be dead, and 5.5% reported active suicidal ideation at the time of study. Death wishes and suicidal ideation were associated with higher depression scores and higher patient self-ratings of psoriasis severity.<sup>54</sup>

Gupta and Gupta in another study reported suicidal ideation in 2.5% of psoriasis out (OPD) patients and 7.2% of of (IPD) patients.<sup>55</sup>

Case-control and cross-sectional studies assessing the effect of acne on psychological health found a range of abnormalities, including depression, suicidal ideation etc.<sup>56</sup>

There are certain findings, which explain high co-morbidity of cutaneous and psychiatric disorders:

- a. Chronic skin disease involves life adaptation, which, in most cases, results in lower life quality, influencing the patient's social life and making the treatment more difficult
- b. Noticeability of skin lesions exposes the patient to negative society reactions and stigmatization because of disfigurement, resulting in patient's loss of self-confidence
- c. Factors like severe anxiety, emotional instability and loss of self –confidence, reduce the quality of life and working abilities in such patients.

### Management

Psychodermatology or Psychocutaneous medicine straddles the interface of psychiatry and dermatology. Understanding the psychosocial and occupational context of skin disease is critical for the optimal management of psychocutaneous disorders. Understanding the pathophysiology aids in selection of treatment plans for correcting the negative effects on the psyche on specific skin conditions.

Realistic goals in the treatment of psychodermatologic diseases include reducing pruritus and scratching, improving sleep, and managing psychiatric symptoms such as anxiety, anger, social embarrassment, and social withdrawal. Psychodermatology or psychocutaneous



medicine encompasses disorders prevailing on the boundary between psychiatry and dermatology.

Psychodermal patients can present a real challenge for physicians. It is recognized that, within the limited setting of a dermatology practice, judicious, knowledgeable, and responsible use of psychopharmacology may be more helpful to the patient than to ignore the psychodermatology problem.

The Psychodermatological approach of management includes pharmacological and nonpharmacological therapy.

### Pharmacological therapy

Pharmacological therapy in Ayurveda includes the use of different type of Rasayanas. In this stressful, ever busy and toxic environment, our natural health, happiness and inner sense of wellbeing are masked by the accumulation of impurities. A Rasayana (rejuvenation) therapy revitalises the sense, detoxify the body, and restore the health in normal state.

Most of the drugs described for the management of skin diseases in Ayurveda have Rasayana properties viz. Guduchi (*Tinospora cordifolia* Willd), Haridra (*Curcuma longa* Linn.), Shunthi (*Zingiber officinale* Rosc.), Pippali (*Piper longum* Linn.), Haritaki (*Terminalia chebula* Retz.), Amalaki (*Embllica officinalis* Gaertn), Bhallataka

(*Semecarpus anacardium* Linn.), Chitraka (*Plumbago zeylanica* Linn.), etc.

It has been experimentally proved that Rasayana has good antistress activity. In an experimental study the whole, aqueous, standardized extracts of six Rasayana drugs administered orally to experimental animals, in a dose extrapolated from the human dose, following which they were exposed to a variety of biological, physical and chemical stressors. These plants were found to offer protection against these stressors, as judged by using markers of stress responses and objective parameters for stress manifestations.<sup>57</sup> Details of the drugs along with their dose and common side effect shown in table 1.<sup>58</sup>

Rasayana drugs also exert a good degree of anti-inflammatory and immunomodulating effect. In this way Rasayana drugs are helpful in controlling skin diseases.

In modern medical science the pharmacological means belong to three main groups, these are as follows-

1. Antidepressants eg. amitriptyline, fluoxetine etc.
2. Anxiolytics eg. Diazepam, alprazolam, buspirone, propranolol etc.
3. Anti-psychotic drugs eg. Haloperidol, trifluoperazine, olanzapine etc.

**Table 1.** Showing details of the drugs along with their dose and common side effect. Modified from Philip D Shenefelt 2010.<sup>58</sup>

| Class           | Category        | Agent         | Dose   | Side effects          |
|-----------------|-----------------|---------------|--|-----------------------|
| Anti-depressant | Tricyclic       | Amitriptyline | 25-50 mg/d                                   | Sedation, Dry mouth   |
|                 |                 | Clomipramine  | 25-250 mg/d                                  | Sedation, Dry mouth   |
|                 |                 | Doxepin       | 25-300 mg/d                                  | Sedation              |
|                 | SSRI            | Fluoxetine    | 20-80 mg/d                                   | Insomnia              |
|                 |                 | Citalopram    | 20-40 mg/d                                   | Sedation              |
|                 |                 | Sertraline    | 25-200 mg/d                                  | GI symptoms           |
| Anxiolytics     | Benzodiazepines | Alprazolam    | 0.25–0.5 mg tid                              | Short-acting sedation |
|                 |                 | Diazepam      | 2–10 mg bid–qid                              | Long-acting sedation  |
|                 |                 | Lorazepam     | 1 mg bid–tid                                 | Short-acting sedation |
|                 | Azaperone       | Buspirone     | 5–30 mg bid                                  |                       |
| Antipsychotics  | Typical         | Haloperidol   | Initially 5–20mg/d,<br>Maintenance 1–10mg /d | Tardive dyskinesia    |
|                 | Atypical        | Olanzapine    | 2.5–10 mg /d                                 | Weight gain           |

SSRI = selective serotonin reuptake inhibitor

## Nonpharmacological therapy

Nonpharmacological therapies in Ayurveda include

1. Daivavyapashraya chikitsa and
2. Satvavajaya chikitsa

Gayadas, the commentator of sushruta samhita has been quoted that the two types of treatment modalities viz Yuktivyapashraya and Daivyapashraya has been mentioned in Ayurveda for the management of Kushtha roga, as the disease Kushtha is originated due to derangement of Doshas and Paapkarma (sinful activities).<sup>59</sup>

### Daivavyapashraya chikitsa

Daivavyapashraya chikitsa include chanting mantras, Aushadhi and Mani dhaaran( spiritual use of herbs and gems), Mangal Karma (propitiary), Bali (offering oblations), Homa, Prayashchita (ceremonial penances), Upavasa (fasting), Swastyayana (rituals for social well being) etc.<sup>60</sup>

Vagbhata, the author of Ashtanga Hridaya cited that use of Vrat, Seva (service), Tyag (renunciation), Daan (donation), worship for deities, friendly behavior with everyone etc. roots out the skin diseases (kushtha roga), as it is originated due to vitiated Doshas (Mala) and Paapkarma.<sup>61</sup>

All these ritual activities directly or indirectly exert a positive impact on the mind (Manas) and therefore, cause reduction in stress, reduction & abolition of negative thoughts like suicidal ideations etc.

These activities also strengthen the mind (Manas/Satva) which helps in

- Reduction in frequency of social withdrawal
- Increases frequencies of social activities/participation in social programs
- Thus helps in accommodation with society.

### Satvavajaya chikitsa

Sattvavajaya in principles is full-fledged Psychotherapy, which has been described in Ayurvedaic literature. Charaka defines it as '**Sattvavajaya Punah Ahitebhyo Arthebhyo Manognigrah**'. Means a method of restraining or withdrawal of the mind from unwholesome objects (Arthas).<sup>62</sup>

Thus, the term Sattvavajaya implies to that modality which is therapeutic for mental or emotional stresses and disturbances. This is secured best by restraining the mind from desire for unwholesome objects, directing it towards wholesome objects and the cultivation of Gyana, Vigyana, Dhairya, Smriti and Samadhi. All these measures help in developing control over the Manas or mind, which is always unstable.<sup>63</sup>

Ultimately, these modalities improve the quality of life (QOL) in the patients of skin diseases (kushtha roga) and thus help these patients to cope up with skin diseases.

There is no doubt that skin disease can lead to a negative emotional sequel and disruptions in psychosocial functioning. Depression, anxiety, and anger are commonly observed emotional reactions in individuals with skin disease. Further, it has been clearly demonstrated that negative emotional states such as stress, anxiety, depression, and anger can elicit or exacerbate skin disease

Nonpharmacologic management of dermatology conditions includes both structured and unstructured interventions that may ameliorate skin disorders, reduce psychological distress, and improve the functional status of the affected individual. Nonpharmacologic techniques are often referred to as psychocutaneous interventions.

Psychocutaneous interventions are not disease-specific. All techniques can produce improved autonomic status and physiological calming (parasympathetic activation). There is a significant psychosomatic/behavioral component in many dermatologic conditions, hence complementary nonpharmacological psychotherapeutic interventions like biofeedback, CBT, hypnosis etc. has positive impacts on many dermatology disorders.

### Biofeedback

Biofeedback is a non-invasive conditioning technique with wide applications in the field of medicine. Biofeedback can enhance the patient's awareness of tension and help them to relax, thus help in improving skin disorders that flare with stress or that has an autonomic nervous system aspect. Electromyography (EMG, muscle tension) and blood flow (temperature) training are the most commonly used modalities. Patients are taught relaxation techniques and their effects can be directly observed by the patients in terms of changes in muscle tension, blood flow, heart rate, or other parameters paralleling desired improvements. Patients are often enthusiastic about this



modality because the monitoring and feedback displays suggest that they are receiving a high-tech intervention. Besides the auditory or visual feedback endpoints, the patients also experience/observe enhanced feelings of relaxation, well-being, symptom reduction, and an increased patient's sense of bodily control. modified from savita 2013.<sup>64</sup>

Biofeedback of GSR (galvanic skin resistance) can help reduce hyperhidrosis (excess sweating). Biofeedback of skin temperature by temperature-sensitive strip or by thermocouple can be used for relaxation, dyshidrosis, and Raynaud's syndrome.<sup>65,66</sup> HRV (heart rate variability) biofeedback can also help reduce the stress response that tends to exacerbate many inflammatory skin disorders. Hypnosis can produce relaxation and enhance the effects produced by biofeedback.<sup>67</sup>

### **Cognitive behavioural therapy**

Cognitive-behavioural therapy (CBT) is a treatment approach that aims to change maladaptive ways of thinking, feeling and behaving through the use of cognitive and behavioural interventions. Cognitive-behavioural therapy alter dysfunctional habits by interrupting and altering dysfunctional thought patterns (cognitions) or actions (behaviors) that damage the skin or interfere with dermatologic therapy. In addition to hypnosis, CBT can facilitate aversive therapy and enhance desensitization. The various steps involved are as follows:

1. First identify specific problems by listening to the patient's verbalization of thoughts and feelings or by observing behaviours.
2. Determine the goals of CBT such as reduction in anxiety or stop a harmful action.
3. Develop a hypothesis about the underlying beliefs or environmental events that precede (stimulate), maintain (reinforce), or minimize (extinguish) these thought patterns and behaviours.
4. Test the hypothesis of cause and effect by altering the underlying cognitions, the behaviour, the environment, or all three, and observe and document the effects on the patient's dysfunctional thoughts, feelings, and actions.
5. Revise the hypothesis if the desired results are not obtained or to continue the treatment if the desired results are obtained until the goals of therapy are reached.

In this way CBT focuses on examining and trying to challenge dysfunctional beliefs and appraisals, which may be implicated in a person's low mood or avoidance of certain situations or behaviours. Consequently, targeting cognitions and maladaptive behaviour are the key areas of CBT interventions for facilitating change. So, the CBT has been successfully applied to various skin conditions and results suggested that patients could benefit from CBT in terms of coping and living with skin diseases. Modified from Savita Yadav 2013.<sup>64</sup>

### **Hypnosis**

Hypnotic techniques and the trance state have been used since ancient times to assist in healing. Hypnosis is an intentional induction, deepening, maintenance and termination of a trance state for a specific purpose. There are many myths about hypnosis, however, the main purpose of medical hypnotherapy is to reduce suffering and promote healing. Hypnotic trance can be defined as a heightened state of focus that can be helpful in reducing unpleasant sensations (i.e. pain, pruritus, dysesthesias), while simultaneously inducing favorable physiologic changes. Most commonly, the hypnotist uses calming techniques designed to relax the subject. Verbalizations are often used, including suggestions that the limbs are going limp and eyelids or arms are getting heavy. Hypnosis may improve or clear many skin disorders.<sup>68</sup>

Hypnosis alters the neurohormonal systems that in turn regulate many body functions and facilitate the mind-body connection to promote healing. modified from savita 2013.<sup>64</sup>

### **Three pronged strategies**

The following 3 strategies can be used to avoid frustrating clinical encounters and increase the satisfaction of both the patient and physician.<sup>69</sup>

### **Empathy**

By looking at the situation from the patient's perspective, the physician can better understand the patient and be prepared to counsel the patient on treatment. It is important not to confuse empathy with sympathy, which means a concern for the well-being of another person. In contrast to sympathy, empathy does not necessarily require the sharing of the same emotional state or agreeing with the patient's point of view.

For example, an acne patient comes to the clinic complaining how her life is over because she has a pimple on her forehead and the dermatologist comments, “You are lucky to have such a minor case of acne. Besides, look at all the other wonderful qualities you have. After all, it’s the personality that counts more than the looks!” The dermatologist might have good intentions, but the patient may feel that her perspective was invalidated and be upset with the dermatologist. In psychology, this unexpected negative reaction from the patient is called “empathic failure.” However, empathizing with the patient’s perspective may be more effective; i.e., “You have acne, and I know it must be embarrassing to go to school and meet up with your friends like this.”

In this way ensure that patients feel heard and feel that their concerns are validated. Spend extra time with patients, particularly during initial diagnosis or exacerbations. Enquire about the psychosocial and economic effects of skin disease.

### **Expectation management**

It is crucial to let patients know what to expect from the treatment plan and how long it will take to get better. Telling patients that they will get better in no time should be avoided if it gives them a “false hope” (i.e., using medications with a slow onset of action). This can lead to further frustration for the patient and even distrust towards the physician. It is best to give patients a realistic expectation up front. Generally, providing a well-established set of expectations early in the encounter can lead to better treatment adherence and stronger patient-doctor relationships.

### **Cheerleader approach**

It can be frustrating to live with chronic, recurring, and relapsing skin conditions for which we do not have a permanent cure. Even though there may be multiple effective treatments available, the clinical outcome relies heavily on the patient’s compliance. For example, patients with eczema may need to apply topical steroids twice daily to maintain adequate control of their symptoms. However, this time consuming and possibly frustrating treatment application could easily dampen the patient’s enthusiasm to continue with the regimen. To instill hope back into the patient’s regimen calls for a ‘cheerleading’ effort on the part of the dermatologist. Encouraging statements such as, “You have been doing a great job, and I know you can

keep this up,” may be all the patient needs to continue treatment through the next visit.

A multipronged approach to the problem is more effective than using only one mode of treatment. Use of non-pharmacological therapies can often reduce the amount of conventional drugs required, thereby reducing side effects while synergistically contributing to effectiveness. All these interventions require more commitment and lifestyle changes than just swallowing a drug, but the side effects are far less and the benefits often are greater than with a drug.

### **Discussion**

In present era stress and low immunity plays a major role in manifestation of different diseases, including skin diseases (kushtha roga), diabetes mellitus, bronchial asthma, gastric and duodenal ulcer etc. Ayurveda provides a great option to cope up with these problems.

Kushtha roga is one among the deerghakaaleen vyadhees and also included in Ashtamahagada as the disease kushtha is very difficult to cure. Even though the skin diseases are not fatal, they create comparatively greater stress and strain due to the blemished skin. This psychological stress leads to manifestation of mental and emotional disorders like delusions as well as somatoform disorder and factitious disorders and further aggravate the preexisting disease.

Psychodermatology covers all aspects of how the mind and body interact in relation to the onset, formation and progression of skin disease. The subject is best regarded as a global term, used to encompass the wide and diverse relationships that have been recognized to exist between the two disciplines, psychology and dermatology. Ayurveda has given more emphasis to this aspect of causation and management.

It has been estimated that the effective management of at least one-third of patients visiting dermatologist depends to some extent upon the recognition of emotional factors. Most of the such type of chronic disease raises two principal problems, preservation of the quality of life and therapeutic compliance.

Psychosomatic management of dermatological disorders requires a perspective beyond the skin and its lesions. This means a more holistic perspective, with the use of

anamnesic techniques and intimate physician & patient relationship. Many psychotherapeutic approaches, ranging from orthodox psychoanalysis to cognitive-behavioural therapy, biofeedback, behavioural conditioning and insight-orientated psychotherapy, have been employed in the treatment of dermatological disorders. Incorporation of psychotherapeutic techniques into the domain of dermatology does generally improve patients' quality of life. The aim of a psychotherapy is to reduce subjective feelings of a patient, the itching and related urge to scratch and to decrease negative emotions such as anger and sadness etc.

Therapy may have a pharmacological or non-pharmacological character. The pharmacological means belong to three main groups, antidepressants, anxiolytics and anti-psychotic drugs.

Non-pharmacological methods include multiple forms of therapies used in special centers, such as psychotherapy, biofeedback, CBT, hypnosis, meditation, stress control and others. One of the principal problems with non pharmacological treatments is that they lack the inherent appeal of drug studies to a scientific community.

According to view point of Ayurveda the pharmacological therapy for such type of psychosomatic disorders include Rasayana (rejuvenation) therapy.

Rasayana chikitsa as described in Ayurveda a nourishes the body, boosts immunity and helps to keep the body and mind in the best of health. It is a multi angled approach, taking care of body, mind and spirit thus affecting total well being of the individual. It seems that the Rasayana act at three levels of the bio - system to promote nutrition, at the level of Agni by promoting digestion and metabolism, at the level of Srotas by promoting microcirculation and tissue perfusion and at the level of Ras itself by acting as direct nutrition. Thus the Rasayana remedies act essentially on nutrition dynamics and rejuvenate both the body and psyche.

Nonpharmacological psychosomatic therapies in Ayurveda include Daivavyapashraya chikitsa and Satvavajaya chikitsa. Daivavyapashraya chikitsa as described in Ayurveda applies to diseases whose development cannot be explained from evident causes. It consists of various subtle, religious or occult methods to ward off negative influences and to promote those which are positive.

Non-pharmacological methods should be used for a long time, even as lifetime measures, due to chronic character of psychodermatologic disorders and a high percentage of recurrence after the therapy end. Non-pharmacological therapies should be carried out by a group of psychologist, psychiatrist, behavioural therapist, and also by specially trained social workers.

When simple measures fail, combining medications with other therapeutic options may produce better results. Skin conditions that have strong psychophysiologic aspects may respond well to techniques such as biofeedback, cognitive-behavioral methods, hypnosis or progressive relaxation that help to counteract stress. Treatment of primary psychiatric disorders that negatively influence skin conditions often results in improvement of those skin conditions.

With three different types of therapies, Yuktivyapashraya, Daivavyapashraya and Satvavajaya Ayurveda provides diverse methods and approaches for dealing with all possible difficulties in health and well-being. Ayurveda is a precise and comprehensive tool for healing physical and psychological wellbeing and promoting optimal health, energy and vitality. Thus, it is revealed that if a Daivavyapashraya line of treatment adopted along with Yuktivyapashraya and Satvavajaya chikitsa then the skin diseases can easily be cured.

Thus, in the present article we have reviewed the interface between dermatology and psychiatry, including different aspect of causation and mode of management.

## Conclusion

The interface between psychiatry and dermatology is multidimensional and begins in early development. The skin is a vital organ of communication and the role of skin as an organ of communication remains important throughout the life. The psychodermatological patients may be challenging and frustrating to treat at times. As such, it requires the understanding and patience from the treating physicians. Thus, to understand psychodermatology, which involve subjective and objective realities, it is critical to look at the situation from the patient's perspective. We hope that this brief overview will provide some insight and understanding on how to deal with challenging psychodermatological cases in the clinical practice.

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