



Review Article

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AN INTEGRATED DIETARY APPROACH FOR THE MANAGEMENT OF DERMATOLOGICAL DISORDERS

Satyapal Singh ^{1*}, J.S. Tripathi ², N.P. Rai ³

¹Research Scholar, Department of Kayachikitsa, Faculty of Ayurveda, Institute of Medical Sciences, Banaras Hindu University, Varanasi, Uttar Pradesh, India

²Professor, Department of Kayachikitsa, Faculty of Ayurveda, Institute of Medical Sciences, Banaras Hindu University, Varanasi, Uttar Pradesh, India

³Professor & Head, Department of Kayachikitsa, Faculty of Ayurveda, Institute of Medical Sciences, Banaras Hindu University, Varanasi, Uttar Pradesh, India

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*Corresponding author

E-mail: spmairti@gmail.com

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ABSTRACT

The authentic subject material has been reviewed from Ayurveda and modern medical literature. Concerned articles were reviewed from different journals and used as the basis for the discussion of how the diet or dietary supplementations affect the physical and mental health and help in the management of wide range of dermatological disorders. The concerned material has also been searched on internet. Ahara (diet or dietary supplementation) is very much emphasized in Ayurvedic system of medicine for the prevention as well as management of wide range of disorders including dermatological disorders. It is well acknowledged that most of the dermatological disorders are auto-immune; chronic inflammatory and psychosomatic in nature like psoriasis, atopic dermatitis, acne etc. Therefore, dietary supplementations having holistic approach to promote psychosomatic health should be recommended for such type of patients. Ahara, especially Medhya Ahara (diet which promotes cognition functions) and dietary Rasayanas (rejuvenative measures) promote physical as well as mental health and ultimately improve the quality of life in the patients of dermatological disorders. In this way, the present review has focused on the impact of dietary supplementation for the management of dermatological disorders.

Keywords: Kushtha Roga, Dermatological disorders, Ahara, Diet and Psychosomatic.

INTRODUCTION

Ayurveda clearly states that there is strong relationship between diet and dermatological disorders at various levels of their etio-pathogenesis and treatment outcome. Diet has long been associated with skin health, beauty, integrity and aging through multiple pathways and co-factors implicated in skin biology. The onset and clinical course of various common skin diseases, especially psoriasis, acne and atopic dermatitis have been suggested to be critically affected by nutrition patterns and habits.

Ayurveda emphasizes more on Ahara (diet & dietary supplementation) in comparison to other systems of medicine and also explored its emotional and spiritual significance, in addition to its material and biological attributes. Ahara is considered as Prana (basis of life) in Ayurveda¹. Ahara has described as one of the Trayopastambha (three subsidiary pillars) of life which are Ahara, Nidra (sleep) and Brahmacharya (celibacy)². Diet is considered as vital for a human body as it provides the basic nutrients and promotes longevity. Ayurveda always emphasizes on consuming healthy and nutritious diet for maintaining good health.

As per the view point of Ayurveda, both the living human body and the diseases afflicting it are the products of Ahara³. Use of Hita Ahara (wholesome diet) promotes health and longevity and Ahita Ahara (unwholesome diet) promotes manifestation of different disorders⁴. Unfortunately, in modern era the concept of Hita Ahara is continuously being ignored, leading to the manifestation and or exacerbation of different disorders including dermatological disorders. Unwholesome diet has been

suggested to play a role in the etiology and pathogenesis of dermatological disorders^{5,6}.

Poor nutrition may be responsible for the manifestation of different disorders. At the same time, therefore, a healthy diet can be the most powerful medicine for providing adequate nutrition and nourishment for the body and mind. Specificity of Ayurvedic nutrition lies in the fact that it emphasizes on individualized approach to the diet, based on one's Prakriti (constitutional make-up) and current health status.

ROLE OF AHARA

Ahara (diet) and Vihara (lifestyle) play a central role in the life according to Ayurvedic understanding. Ayurveda places special emphasis on Ahara and Vihara as measures for better living, health and wellness.

Nutritional supplementation may provide a viable treatment alternative in patients with dermatological disorders. Nutrients are substances that are not synthesized in the body in sufficient amounts therefore, must be supplied by the diet. Ayurveda has explained the importance of Hita Ahara and timely consuming Ahara that in promotion of psychosomatic health and longevity^{7,8}. Reduced resistance in the body, arising from the adaptation of a faulty nutritional pattern is a primary cause for manifestation of various disorders. Healing mechanism within the body perform its function only if, it is abundantly supplied with all the essential nutritional factors. Acharya Charaka has clearly stated that one should consume such type of Ahara, which not only helps to maintain the health but also serves as a prophylactic measure against forthcoming disorders^{9,10}.

In Ayurveda, state of Ajeerna (indigestion) is considered as main culprit for the manifestation of majority of disorders including dermatological disorders¹¹. In the present era, unwholesome dietary patterns and faulty lifestyle are responsible for the state of Ajeerna. Stress and the related psychological factors are also responsible for the state of Ajeerna in wide range of disorders including dermatological disorders¹². Therefore, the appropriate dietary supplementation should be recommended to the patients of dermatological disorders after taking consideration of Agni Bala (digestive power), Sharira Bala (physical strength) and Satva Bala (mental strength) in the each and every patient.

The ultimate impact of a particular type of food depends not only on its material qualities but also largely on its processing, i.e., cooking and the discipline of eating. The foremost Ayurvedic classic Charaka Samhita describes¹³ the eight principles of Ahara Vidhi (food processing and discipline of eating) which are Prakriti (natural quality), Karana (preparation), Samyoga (combinations), Rashi (quantity), Desha (habitat and climate), Kala (temporal factor), Upayoga Samstha (rules of use) and Upayokta (the user). Similarly, Sushruta describes¹⁴ 12-fold considerations to be followed during the consumption of food and termed them Dvadash Ashana Vidhi.

In addition to food and diet, Ayurveda propounds a separate concept of medicinal dietary supplements in the context of Rasayana (rejuvenative measures). Rasayanas can be used as nutritional supplement as well as medicine depending upon its various types. The important Rasayanas which are part of our daily routine diet include Rasana, Haridra and Pippali. Use of some Rasayana like Amalaki and Haritaki should be promoted as a part of our routine diet to impede dermatological disorders.

Ayurveda described unwholesome diet and Viruddha Ahara (incompatible diet), excess liquid diet, excess Guru Ahara (heavy diet) as major factors involved in the etio-pathogenesis of Kushtha Roga (dermatological disorders).

Unwholesome diet, excess liquid diet and excess guru diet leads to Mandagni (reduced digestive power) which in turn leads to formation of Ama. Ama is considered as a group of intermediary metabolite producing oxidative stress to the body tissues which is involved in the pathogenesis of many dermatological disorders. Ama is also considered as an antigen and may have potency to induce immunological reaction in a susceptible individual¹⁵. Immunological reaction and autoimmunity is the mainstay in the pathogenesis of many dermatological disorders like psoriasis, atopic dermatitis etc. Therefore, such type of disorders can be managed by avoiding these types of food and promotion of easily digestible diet and antioxidant diet specially enriched with Rasayanas.

Some studies validated that oral administration of antioxidants (i.e. consuming diet rich in anti-oxidants) act as preventive therapy for the natural aging of the skin and cancer caused by ultraviolet rays¹⁶.

The principal physiological effects of Rasayanas are to improve and revitalize the physiological and endocrine functions of the body, to decelerate the ageing process and to improve body function by strengthening the immune system or via immunomodulation. Several studies validated the following actions of Rasayana^{17,18}.

- Immunomodulator
- Adaptogenic
- Antioxidant
- Nootropic
- Antistress

Therefore, promotion of Rasayanas as a part of our routine diet promotes physical as well as mental health, leads to immunomodulation, reduces the oxidative stress inside the body,

reduces psychological stress and thus ultimately plays a major role in the prevention as well as the management of dermatological disorders especially psoriasis (a well-established auto-immune, psychosomatic disorder), since the stress and altered immunity are the main factors involved in the pathogenesis of psoriasis.

The principles and practice of Rasayana in Ayurveda is most probably based on the principle of immunomodulation. Rasayanas as described in Ayurveda nourish the body, boost immunity and help to keep the body and mind in the best of its health. It is a multi-angled approach, taking care of body, mind and spirit, thus affecting total wellbeing of an individual¹⁹.

Most Rasayanas produce their nourishing and rejuvenating effect by promoting the Agni Bala, acting as direct nutrients and by way of Srotoprasadan (purification of body channels), resulting in an improved nutritional status, further leading to an improved quality of Dhatus or body tissues. Although the Rasayanas are a generic class of restorative and rejuvenative supplements, many Rasayanas could be tissue and organ specific such as Medhya Rasayana for the brain, Hridya Rasayana for the heart, Twachya Rasayana for the skin, and so on²⁰.

Some authors suggested anti-proliferation, pro-differentiation and immune-regulating properties of calcitriol (the active form of vitamin D) and its analogs that may inhibit the growth and maturation of keratinocytes on oral supplementation^{21,22}. Vitamin D has proven to be highly effective in the treatment of psoriasis, as patients having received vitamin D for the treatment of osteoporosis exhibited an improvement in psoriasis²³.

The fatty acids a-linolenic acid, eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA) are the most abundant n-3 (omega 3) fatty acids in diet. a-Linolenic acid is found in linseed and walnut oil, whereas EPA and DHA are typical fish oil fatty acids, which are contained in oily fishes such as mackerel and herring²⁴. Smith et. al. has demonstrated the anti-inflammatory effect of diet rich in omega 3 fatty acids (eg. fish oil) in individuals with psoriasis²⁵. Diet rich in omega 3 fatty acids modify the metabolism of PUFAs, thereby influencing the profile of eicosanoids leading to the suppression of the inflammatory process. Fish oil has also been observed to change the serum and lipid composition of epidermal and blood cell membranes, which further rationalizes its use in the treatment of psoriasis²⁶.

Some studies suggested the beneficial role of 'Gluten' free diet in different dermatological disorders including psoriasis^{27,28,29}. Gluten is a protein present in wheat, rye, barley and triticale. Some studies have shown that symptoms of inflammatory diseases such as rheumatoid arthritis, psoriasis etc. can be improved by fasting periods or low-energy diets^{30,31,32}.

The association between nutrition and infection has been linked for centuries especially between micronutrient deficiencies and immune impairment³³. Malnutrition and infectious diseases has been well recognized, especially those of the gastrointestinal tract³⁴.

A report on five cases of psoriasis over a six month period suggested the beneficial role of diet (rich in fresh fruits and vegetables, small amounts of protein from fish and fowl, fibre supplements, olive oil, and avoidance of red meat, processed foods, and refined carbohydrates) and herbal teas when assessed by PASI (psoriasis area and severity index) score and PSS (psoriasis severity scale) score and validated the significance of diet and herbal teas or a related type of medical nutritional therapy as an effective alternative or complementary (not exclusionary of conventional intervention) treatment for psoriasis³⁵.

Severe psoriasis has been associated with nutritional deficiencies because of an accelerated loss of nutrients from the hyper-proliferation and desquamation of the epidermal layer of skin. A

study carried out on 50 hospitalized patients with psoriasis, demonstrated that 18% had decreased total protein, 16% had decreased serum albumin, 38% had elevated mean corpuscular volume and 39% had decreased haematocrit^{36,37}. Therefore, it results in increase demand of nutrients. Thus, in this state patient should be recommend the diet like seeds, nuts, grains, vegetables and fruits, with emphasis on raw seeds and nuts and plenty of organically grown raw vegetables and fruits with special recommendation of dietary supplements rich in antioxidants specially by promoting the use of Rasayanas. These food types are easily digestible and can be assimilated faster and quicker in the human system. Some Rasayanas like Pippali etc. are good bio-availability enhancers and thus enhance the bio-availability of different nutrients from diet³⁸.

Researches validated the role of the Western diet, which typically corresponds to a high glycemic load diet as a potential cause of acne³⁹. Glycemic load takes into account the quantity of carbohydrates consumed as well as the rate of carbohydrate absorption. Foods with a high glycemic index, such as sugar, white bread, and white rice, are rapidly absorbed, leading to higher serum glucose levels and corresponding elevated levels of insulin. Insulin and IGF-1 (insulin-like growth factor-1) have been shown to augment sebum production, stimulate adrenal androgen synthesis, and increase androgen bioavailability, all of which play a role in the pathogenesis of acne⁴⁰. The low glycemic load diet resulted in significant improvement of acne severity, reduction in weight, body mass index, free androgen index, and increased IGF binding protein-1 (IGFBP-1)⁴¹.

Ayurveda also described some dietary incompatibility (Viruddhahar) which should be avoided by all individuals including patients of dermatological disorders. The dietary incompatibility is of eighteen types as follows^{21,42}.

1. Desha viruddha (contrary to climate)
2. Kala viruddha (contrary to season)
3. Agni viruddha (contrary to digestive power)
4. Matra viruddha (contrary to measure)
5. Satmya viruddha (contrary to adaptability)
6. Dosh viruddha (contrary to body humors)
7. Sanskara viruddha (contrary to processing)
8. Virya viruddha (contrary to potency)
9. Koshttha viruddha (contrary to bowel habits)
10. Avastha viruddha (contrary to patient's state)
11. Krama viruddha (contrary to order of eating)
12. Parihara viruddha (contrary to restrictions)
13. Upachara viruddha (contrary to observances)
14. Paka viruddha (contrary to cooking)
15. Samyoga viruddha (contrary to combination)
16. Hridaya viruddha (contrary to palatability)
17. Sampata viruddha (contrary to rich quality)
18. Vidhi viruddha (contrary to mealtime rules)

Table 1: Tabular representation of scientific names and family of some plants

Sanskrit names	Scientific names	Family
Rasona	<i>Allium sativum</i> Linn.	Liliaceae
Haridra	<i>Curcuma longa</i> Linn.	Zingiberaceae
Pippali	<i>Piper longum</i> Linn.	Piperaceae
Amalaki	<i>Emblica officinalis</i> Gaertn.	euphorbiaceae
Haritaki	<i>Terminalia chebula</i> Retz.	Combretaceae

For example, intake of milk and fish together considered as Veerya Viruddha (contrary to potency). Milk and fish together leads to vitiation of Rakta (blood) and Srotorodha (obstruction of body channels) and formation of Ama⁴³. Vitiated Rakta is considered an important factor involved in the etio-pathogenesis of dermatological disorders (Kushtha Roga)⁴⁹. Ama may generate immunological reaction which is mainstay in the etio-

pathogenesis of many dermatological disorders as described earlier. Both milk and fish are the rich source of protein and the combination may generate new type of protein molecules. These molecules may exhibit molecular mimicry and generate auto-immunity.

Viruddha Ahara can lead to inflammation at molecular level and disorders up to impotency and infertility. These types of combinations are harmful, which may be imparting its untoward effects on immune system, cellular metabolism, growth hormone, and Dehydroepiandrosterone sulfate (DHEAS)⁴⁴.

DISCUSSION

Ayurveda emphasizes the material quality of food but places even greater emphasis on the selection of food; it's processing and cooking, and rules for healthy eating. Thus, the Ayurvedic approach to food and dietetics is very different from the conventional western approach.

Ayurveda is a science which encompasses the fundamental laws of nature and is considered to consists almost each and every aspect of disease and its therapeutic approach. Ayurveda has advocated a comprehensive composite health care. The effect of Rasayana has three-fold dimensions, first, by directly enriching the nutritional quality of the nutrients plasma (that is directly acts as nutrient), secondary, by promoting nutrition through improvement in digestion and metabolism; and thirdly, by promoting the competence of micro-circulatory channels (Srotus) in the body leading to better bio-availability of nutrients to the tissue perfusion²¹.

Every meal will either promote or inhibit inflammation. Here, it is important to remember the statement of Acharya Charaka that is 'Ahar Sambhavam Vastu Rogaschahar Sambhavah' i.e. the living human body and the disorder afflict it both are the products of wholesome and unwholesome diet respectively⁴⁵.

Wholesome diet leads to improved nutrition which in turn promotes longevity, decelerates aging, enhances immunity or leads to immunomodulation to impede various disorders, improves intelligence, augments memory and promotes overall enhancement of mental competence, increases vitality and luster of the body. The ritual of eating and the company in which a person eats also influences one's health and well-being.

Mental state and behavior of individuals greatly reflect the type of food they consume and the kind of habitat they live in. The Sattvika, Rajas and Tamas food and life style overtly manifest in an individual. Ayurveda rightly proclaims that people and their behavior are the products of their food and life styles⁴⁶.

Trayopastambha i.e. three subsidiary pillars of life (Ahara, Nidra and Brahmacharya) as mentioned in Ayurveda are very important factors for optimal physical and mental performance. Among these Ahara is considered primary or basic subsidiary pillar of life.

Incompatible diet, Unwholesome diet, excess Guru Ahara, liquid Ahara leads to Srotorodha and Ama formation which in turn leads to oxidative stress to body tissues, vitiation of Rakta and immunological reactions. These three are the major factors involved in the etio-pathogenesis of dermatological disorders. Therefore, by avoiding such types of diets and promotion of positive diet specially enriched with Rasayanas is definitely helpful for prevention as well as management of wide range of dermatological disorders.

In some cases, dietary interventions may influence the course of the skin disease, as in acne. In others, dietary change may serve as one aspect of prevention, such as in skin cancer and aging of the skin. In others, dermatological disease may be linked to systemic disease, and dietary changes may affect health outcomes, as in psoriasis. Lastly, systemic medications prescribed for dermatological disease, such as steroids, are

known to raise the risk of other diseases and dietary change may reduce this risk⁴⁷.

Pathyapathya (dos and don'ts regarding diet and lifestyle) is an important component of every prescription in Ayurvedic clinical practice. Sometimes, dietary management in itself is a complete treatment. Ayurvedic dietetics is concerned primarily with the energetic of food as a mean of balancing the biological humors (Dosha).

Dermatological disorders are very common in the present era due to unawareness towards and or ignoring proper daily regimen, seasonal regimen, lifestyle and good code of conducts. The field for the therapeutic application of Ahara and Vihara as described in Ayurveda is very vast & more scientific and needs their further clinical and experimental validation in the management of wide range of disorders as per the need of present era.

Nutrition is of the highest priority in today's life and it is the hub of everyone who is desirous of good health. The importance of nutrition is emphasized by its role in promoting psychosomatic health which can be achieved by averting the degenerative changes caused by aging by use of Rasayanas; enhancing the defence system by use of Roga Pratibandhaka /immunomodulator Rasayanas; Convalescence after an illness by use of Balya Dravya; maintain the vigor and vitality by use of Vajikarana Dravya; maintaining the vitality (joie de vivre) by use of Jeevaniya Dravya; promotion of intellect by use of Medhya Rasayanas. Modified from⁴⁸.

There is no thought regarding the beneficial role of diet and nutritional supplements in the management of wide range of disorders including dermatological disorders but furthermore researches are needed to firmly establish their role with special focus on diet and nutritional supplement described in Ayurveda.

CONCLUSION

The Ahita Ahara (unwholesome diet) is an important factor which is involved in the etio- pathogenesis of Kushtha Roga (dermatological disorders) including psoriasis. Low-calorie and vegetarian diet may be beneficial for the treatment of psoriasis. Moreover, the consumption of Hita Ahara (wholesome diet) rich in fruits and vegetables is beneficial due to their high antioxidant content. Vegetarian diet may be beneficial for patients with dermatological disorders due to the low amino acid content and the resulting reduced formation of inflammatory eicosanoids. Promotion of psychosomatic health by use of positive diet especially enriched with Rasayanas in daily routine diet is very important and may change the entire scenario of management.

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