

ABSTRACT

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Review Article

ROLE OF DIET IN THE MANAGEMENT OF PSORIASIS: A REVIEW

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KEYWORDS: Kitibha kushta, Psoriasis, Virudhahara, Vihara. Psoriasis is an immune mediated, non infectious, chronic, inflammatory skin disease. It affects approximately 3% of the India's population and the prevalence is much increasing. The exact cause of psoriasis is not known; however it's believed both genetic and environmental factors including change in diet and lifestyle can be involved. Several factors are thought to aggravate flares of psoriasis. Psychological stress, physical injury, gut dysbiosis are the major triggering factors in the exacerbation of the disease. In Ayurved, all the skin diseases are described under the head 'Kushta'. Psoriasis can be correlated with 'Kitibha Kushta' due to very much similarity in their symptoms. It is characterized by erythema or discoloration of skin, indurations, scaling and itching. Ayurved is a holistic science which not only aimed at prevention of disease but also cure of disease which is already manifested. Through proper diet and lifestyle prevention of the disease and treatment can be possible. It provides long lasting results and a better quality of life to the patients. In this article special emphasis should be given on the etiological factors of Psoriasis and role of diet in the Psoriasis management. According to Ayurved, incompatible diet and lifestyle (Virudhahara and vihara) is the most important cause of psoriasis. In this article various types of Virudhahara-vihara as per literature and in current era has been summarized. Objectives: 1. To estimate various etiological dietary factors in psoriasis. 2. To estimate role of diet in the management of psoriasis. **Method:** A comprehensive literature review was performed from modern as well as Ayurved literature, books, journals and website. Conclusion: Dietary modification is the most important treatment modality for preventing the onset of disease, reducing the disease severity and preventing the recurrence of psoriasis.

INTRODUCTION

In Ayurved, all the skin diseases are grouped under a broad heading of *Kushta*. *Kushta* is a disease condition in which there is a discoloration of skin. *Kitibha* is one of the types of *Kushta* characterized by erythema or discoloration of skin (*Shyavam*), induration (*Kinkhara sparsham*), scaling (*Parusham*) and itching (*Kandu*) which can be correlated with the Psoriasis.

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Psoriasis is a non infectious, chronic, inflammatory, auto immune in nature. It affects approximately 3% of the India's population and the prevalence is much increasing^[1]. The course of the disease is characterized by relapses and remissions but the condition persists throughout life. It not only affects the skin but, patient may experience extracutaneous manifestations also. According to Center for Disease Control and Prevention (CDC) 10 to 20% of patients with psoriasis eventually develops psoriatic arthritis. It is also associated with various co morbidities such as heart disease. obesity. hyperlipidemia, and diabetes suggesting a systemic disorder rather than just a skin disease^[2]. Several factors such as genetic susceptibility, environment, and lifestyle are associated with the pathogenesis of psoriasis. Stress may exacerbate psoriasis in susceptible patients and psoriasis is itself a cause of psychological stress (psychosomatic disorder). Obesity and chronic alcoholism are known to be associated with refractory cases. The intake of unwholesome diet is one of the important causative factors in the pathogenesis of psoriasis.

Ayurved has emphasized diet as one essential part of healthy life. The human body is an outcome of nutrition while diseases are believed to be the result of impaired nutrition. Avurved has described diet as a main cause of health or sickness ^[3]. Avurved uses term Pathya for healthy and balanced diet. Pathya means that which is the wholesome or right way: Apathya means unhealthy or the wrong way. It is said that if a patient follows a wholesome diet (Pathya) then there is no need of medicine. On the other hand if the patient doesn't follow a wholesome diet there is no need of medicine because, he will not recover without a wholesome diet so medicine will be ineffective. In Ayurved, appropriate diet and dietary regulations has a great importance as a therapy. The Ayurved treatment revolves around the basic principles of chikitsa 'Nidan parivarjana' and 'Pathya- Apathya'. *Ayurved* states that universe (*Bramhanda*) constituted by *Panchmahabhutas* and the body (*Pinda*) is also constituted by these five basic elements. Ayurved treatment principles are also based upon the correcting imbalance of *Panchamahabhuta's*. Food similar Panchmahabhuta having components nourishes their respective tissue factors in the body e.g. Vayavya (airy foods) produces lightness, dryness, roughness, movements in the body. Skin, part of bones, nerves, ears and other sense organs gets nourishment

from it. In *Taittriya Upanishad* also it is mentioned that all the food materials, medicines and the human body are formed from the *Pachamahabhuta's*. Mental and spiritual development as well as temperament of an individual is influenced by the quality of food he has taken. So *Ahara* (food) is considered as the best of all medicines and is considered one among the three subpillars of Ayurved (*Trayo- upsthamba*)^[4]. For the better treatment response, speedy recovery, to prevent the recurrence and further complications special emphasis should be given to the diet in psoriasis patients.

Thus, in this review article emphasis should be given on the etiological factors of psoriasis and role of diet in the management of psoriasis.

OBJECTIVES

- 1. To estimate various etiological dietary factors in psoriasis
- 2. To estimate role of diet in the management of psoriasis

MATERIAL & METHODS

A comprehensive literature review was performed from modern as well as Ayurved *l*iterature, books, journals and website.

Ayurved system of medicine describes various etiological factors of skin diseases which are broadly classified as –

- 1. Diet and dietetic patterns (Aharaja)
- 2. Lifestyle related (*Viharaja*)
- 3. Psychological factors (Manasa)

S.N	Causes	Meaning	Examples
1	Atilavana	Excessive intake of salt	Pickles, chips, papad etc
2	Atiamla	Excessive intake of sour food	Excess intake of preserved foods, fermented products, chaat, curd, buttermilk, sauces like tomato sauce, vinegar
3	Guru annapana	Hard to digest food	Bakery products, foods prepared from wheat flour, Pizza, cheese mixed foods, paneer, regular intake of meat, beef, milkshake etc
4	Snigdha annapana	Oily food	Fried oily foods, sweets with excess ghee
5	Atidravapana	Excessive intake of <i>Drava</i> / liquid	Drinking excess quantity of water/cold drink other beverages
6	Sneha atisevana	Excessive consumption of fats	Excess intake of <i>Ghrita</i> for treatment purpose or as diet, <i>Vanaspati ghee/</i> hydrogenated oil, <i>Mashish ghrita</i> (Buffalo ghee), butter etc
7	Asatmya ahara	Uncongenial food	Foods which are not appropriate to <i>Prakriti</i> (constitutional <i>Doshas</i>), native or birth place (<i>Desha</i>) such as, ingesting foods which are not local (continental food)

Table 1: Etiological Factors for the Dermatological Disorders are as follows [5]

		AYUSHDHARA, 2022;9(Sup	pr 1 j:02-70
8	Ajeernahara	Intake of meal earlier than proper digestion of preceding meal	
9	Chilchima with Payasa	Intake of a variety of fish (chilchima) or other sea food with milk	
10	Gramya-anupa- audaka mansa with milk	Domestic, marshy animal meat with milk	Milk products with meat, ice cream after non vegetarian food
11	Sheeta-Ushna aharakramammuk tva sevanam	Ingestion of cold and hot food together or consumption of cold food soon after intake of hot food or vice versa	Sizzling ice cream
12	Ajeerne madhu- phanita-matsya- lakucha	Habit of taking honey or jaggery or fish or lakucha in extra amount and mainly after indigestion	
13	Dadhi (Curd)	In autumn and spring season, Especially after heating and in night	Mandak dadhi (not properly set curd), Atiamla (excessive sour curd), curd in different forms such as raita, lassi, Dahivada, mixed with curry, curd rice etc
14	<i>Matsya</i> (Fish)	Excessive eating of fish	Especially fish with milk products
15	<i>Masha</i> (Black gram)	Excessive use of black gram	Udida vada, Dosa etc
16	<i>Mulaka</i> (Raddish)	Regular use of radish is stated to be a reason and precipitant of skin diseases	
18	<i>Pishtanna</i> (Carbohydrate rich diet)	Food prepared after pounding rice, gram etc	Vada, Dosa, Dhokla
19	<i>Tila</i> (Sesame)	Regular and immoderate use of sesame	
20	Guda (Jaggery)	Regular intake of jaggery and products made from jaggery, <i>Nava</i> <i>Guda</i> i.e., less than one year from production	
21	Atimadyapana	Regular and excessive use of alcohol	
22	Harita shaka and vidahi anna	Excessive intake of green leafy vegetables and pungent foods	
23	Lasuna	Excessive use of garlic	Chinese food
24	Praklinna anna	Putrefied food	Convenience food or tertiary processed food or ready to eat food
25	Kurchika, kilata	Excessive use of dairy products	Paneer, Cheese, Khava, Chakka, Rasgulla
26	Gramya-anupa audaka mansa	Frequent eating of flesh of domesticated, marsh dwelling and aquatic animals	Lamb meat, pork

Among these all unwholesome diet (*Viruddha-ahara*) is most important cause of psoriasis and other skin diseases ^[6]. Continued practice of incompatible diet and lifestyle (*Apthya ahara* and *Vihara*) vitiates

the *Agni* and three *Doshas* namely *Vata, Pitta* and *Kapha* which in turn vitiate *Twaka, Rakta, Mansa* and *Lasika.* All these taken together collectively represent the seven fold pathogenic substances which takes part

AYUSHDHARA | July-August 2022 | Vol 9 | Suppl 1

Rupali Ramadas Patil, Anupama Bathe, Digambar Dipankar, Gunvanta Yeola. Role of Diet in the Management of Psoriasis

in manifestation of various skin disorders which are again classified into two namely *Mahakushta's* (7 types) and *Kshudra Kushta's* (11 types).

Acharya Charaka has defined eighteen types of Viruddha-ahara^[7]. The substances which when consumed cause aggravation of *Doshas* but do not expel them out and vitiate *Rasadi dhatu* which in turn manifested in various disease conditions are taken into consideration to be incompatible. Virudha can be considered as food plan which is having mutually contradictory properties, contradictory to tissues,

produces untoward effect on the body when processed in particular form or when combined in certain proportion or those which produces untoward effect when taken at wrong time ^[8].

Acharya Vagbhata has compared Viruddhaahar with Visha. Viruddha-ahar can sometimes become fatal just like poison and sometimes if taken continuously for the long term it may become Gara Visha/Dushi Visha (slow poison) and brings harmful effect to the body causing various disorders especially skin diseases ^[9].

S. N.	Causes	Meaning	
1	Vaman vega rodha	Suppressing the urge of vomiting	
2	Panchakarmapachara	Irregular and or improper practice of Panchakarma	
3	Bahya shrama-santap upahatasya sheetodaka sevanam	Taking bath or drinking cold water immediately after exhaustion, anger, fear or grief	
4	Divaswap & Ratrijagaran	Day time sleeping and night awakening (e.g shift duties or late night duties)	
5	Vega dharana	Suppression of natural urges	
6	Ananprvya sheetoshna vyatyasaseva	Non compliance of the prescribed regulations with reference to the order of restoring to hot and cold regimens (e.g exposing to warm climate immediately from air conditioned area)	
7	Vyayam, Atisantap bhuktopsevana, Ajeerne api vyayamam, Sneha pitasya vantasya va vyayamam	Strenuous exercising (gym) without considering time, strength, physical condition	
8	Papakarma	Indulging in sinful acts	

Table 2: Other than Diet Etiological Factors for Psoriasis ^[5]

Other than Diet etiological Factors for Psoriasis

Other than dietary cause, *Acharya Sushruta* first time clearly described the *Anuvanshika* (hereditary) and *Krimija* (infectious) *Nidana* as a causative factor for different types of skin diseases (*Kushta*) ^[12]. *Acharya charaka* has also indicated *Raktaja krimi* as causative factor for skin disorders (*Kushta*) ^[13]. Sushruta has mentioned *Kushta* as *Adibalpravritta Vyadhi* i.e., arise from the day of conception, the original cause of disease is attributed to defects of sperm and ovum (*Beejadushti-Shukra & Shonit*). So those who have family history of Psoriasis must follow the dietary regimens to prevent the disease ^[14]. *Kushta* has been mentioned as *Raktapradoshaja* and *Santarpanjanya vyadhi* ^[15]. So the vitiation of blood (*Rakta dushti*) and over nutrition (*Santarpaka nidana*) can be attributed for the production of various skin disorders.

Table 3: Ayurveda Literature has described various types of Viruddha-ahara which can be summarized as follows [10,11]

Sr.No	Туре	Meaning	Example
1	Desha Viruddha	Incompatible in respect to place (Jangala/Sadharana/Anupa)	Persons living in dry, mountain places or forests take <i>Ruksha teekshna</i> (dry and spicy) <i>Ahara</i> e.g. Consumption of alcohol
			Unctuous substances in moist and marshy land cool milkshake e.g. Ice cream, juices
2	Kala Viruddha	Incompatible in respect to time Time is considered in terms of	Intake of cool and dry substances in winter e.g. Ice cream, cold drinks in winter

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		season, age, daytime or night time and stage of disease	Pungent and hot substances in summer e.g. spicy diet in summer
			Not to follow seasonal dietary regimen
3	Agni Viruddha	Incompatible in respect to digestive capacity	Intake of heavy food when the power of digestion is low, Intake of light food when the power of digestion is high
4	Matra Viruddha	Incompatible in respect to quantity or dose	Intake of honey and ghee in equal quantity, Intake of honey and water in equal quantity
5	Satmya Viruddha	Incompatible in respect to suitability	Intake of sweet and cold substances by person habituated to pungent and hot substances
6	Dosha Viruddha	Incompatible in respect to <i>Dosha</i>	Ushna, Teekshna, Katu ahara aggravates Pitta dosha
7	Samskar Virudha	Incompatible in respect to processing or method of preparation	Drugs and diet which when prepared in a particular way produce poisonous effects e.g. Heated honey, honey with hot water, deep fried potatoes, pressure cooked rice, crushed sugar cane juice or other fruit juices
8	Veerya Viruddha	Incompatible in respect to potency (antagonistic)	Substances having cold potency in combination with those of hot potency e.g. fish with milk, ice cream with hot chocolate fudge
9	Koshata Viruddha	Incompatible in respect to nature of gut	More quantity of heavy food to a person having soft bowel and vice versa
10	Avastha Viruddha	Incompatible in respect to state of health	Intake of <i>Vata</i> aggravating food after physical exertion or <i>Kapha</i> aggravating food after sleep
11	Krama Viruddha	Incompatible in respect to sequence of intake	If a person takes food before his bowel and urination or after bath, pungent and bitter taste food at starting of meals while sweets at the end of meals
12	Parihar Viruddha	Incompatible in respect to contraindication	Consumption of cool food items after hot and spicy food e.g cold drinks after fast food, hot water after honey consumption, cold water after hot tea or coffee
13	Upacahar Viruddha	Incompatible in respect to indication	Consumption of food items which are not supposed to be consume after the treatment e.g. <i>Sheeta jalapan</i> after <i>Shehapana/ Panchakarma</i> treatment
14	Paak Viruddha	Incompatible in respect to cooking	Under cooking, over cooking or burning during process of preparation e.g barbeque, source of heat should be also considered e.g Microwave cooking, grilled
15	Samyoga Viruddha	Incompatible in respect to combination	Intake of sour substances with milk e.g fruit salad, palak paneer, butter chicken
16	Hriday Viruddha	Incompatible in respect to palatability	Intake of unpleasant food, unhygienic food
17	Sampad Viruddha	Incompatible in respect to richness in properties of food substances/ quality	Intake of food, fruits or vegetables that are not mature, over matured or putrefied
18	Vidhi Viruddha	Incompatible in respect to place rules of eating/etiquette	Taking meal in public place e.g. buffet, street food, refrigerated foods, canned food items with preservatives

	Table 4: Milk and Incompatible food can be summarized as follows ^[16]		
Sr No	Incompatible diet		
1	Meat of domestic, marshy and aquatic animals with honey, sesame, seeds, sugar candy, milk, black grain, radish and with germinated grams may cause blindness, deafness, trembling loss of intelligence, loss of voice, death		
2	Radish and garlic with milk may cause skin disease		
3	Vegetables of <i>Pushkara</i> and meat of dove tried in mustard oil together with honey and milk may cause obstruction of <i>Strotas</i> (channels of circulation), dilatation of blood vessels, epilepsy, headache		
4	Amra (mango), Amratake, Matulunga, Nichuch, Kapitha, Karmarda, Jambira, Emali (tamarind), Amalaka (Embilica officinalis) other sour taste materials with milk		
5	Any type of fish with milk		
6	Masha (black gram), Kulatha with milk		
7	Lemon with milk		
8	Curd with sour fruits, hot drinks, fish, meat, mangoes and cheese		
19	Honey and ghee, honey and rain water, drinking of hot water after intake of honey		

As a basic principal of *Chikitsa siddhant, Nidanparivarjana* (abstinence from etiological factors) can be considered as preventing measures and to be avoided in the course of treatment. In Ayurveda detail description is available regarding diet and dietary regimen during daily routine (*Dinacharya*), seasonal routine (*Ritucharya*) and behavioral and ethical principles (*Sadvritta*). Balanced diet; diet which contains five basic elements, which contains all six tastes (*Rasa*) in appropriate quantity, from all twelve food groups and from all four forms of food (edible, drinkable, lickable, masticable) should be followed. It is not sufficient to follow a balanced diet without considering the eight factors of ingestion in terms of appropriate food, combination of food, methods of cooking, storage, eating atmosphere, hygiene and etiquettes (*Ashtavidha Aharavidhi Visheshayatana*) also should be followed.

1.	Prakriti	Nature of food
2.	Karan	Method of processing
3.	Samyog	Rules of combination
4.	Rashi	Quantity of food
5.	Desha	Habitat or birth place
6.	Kala	Influence of time
7.	Upayoga samstha	Rules pertaining to take the food
8	Upayogta	Food consumer

Table 5: Ashtavidha Aharavidhi Visheshayatana^[17]

Table 6: Pathya (Wholesome diet and regimen) and Apathya (Unwholesome diet and regimen) for skindiseases summarized as follow [18]

<i>Pathya</i> (wholesome diet and regimen)	<i>Apathya</i> (unwholesome diet and regimen)
<i>Laghu annapana</i> (intake of easily digestible food) and take a lesser quantity of food	<i>Guru annapana</i> (heavy diet) in excess quantity
<i>Jeerne anna</i> (take food only when first meal is completely digested)	<i>Adhyashana</i> (intake of food before previous food gets digested)
<i>Tikta rasa pradhana ahara</i> (bitter food items)	Amla rasa pradhana ahara (sour food) e.g. tomatoes, tamarind, sour curd, pickles, very sour buttermilk , Katu rasa pradhana agara (pungent food)
Saindhava (rock salt)	Lavana rasa pradhana ahara (salty food)

AYUSHDHARA, 2022;9(Suppl 1):62-70

Matravat sevana (eat only in required quantity)	Vishamashanam (improper diet regimen)
Cow milk	Excessive use of milk and milk products e.g. lamb milk, buffalo mozzarella cheese, old and hard cheese, <i>Khava</i> , <i>Rasgulla</i>
Well set curds occasionally	Mandak Dadhi (improperly set curd)
Eat only freshly prepared food	Preserved or canned food
Eat fresh fruits and vegetables	Processed fruit juices with preservatives, squash, vegetable in the land with excess use of chemical fertilizers or insecticides
<i>Rakta Sali/</i> unpolished brown rice if cooked in an open vessel on low flame and removing excess water	
Godhuma (Wheat / Dalia)	<i>Ati snigha anna</i> (excessive unctuous food), fried substances like potato chips
Purana Guda (1 year old Jaggery)	Nava Guda (new jaggery)
<i>Mudga</i> (Green gram)	Masha (black gram) and its preparations
Yava (Hordecum vulgare)	Black <i>Tila</i> (sesame)
Kodrava (Paspalum Scrobiculatum/ Millet)	Dravannam (excessive liquid food)
Bakuchi (Psoralea corylifolia)	Soy milk, soy sauce, tofu
Karvellaka (Bitter Ground)	Viruddhashana (mutually contradictory food)
White ground	Fermented rhizomes, roots, fruits
Jangala mansa e.g. goat meat	Anupa mansa (meat of animals of marshy land) pork, beef, duck, lamb meat
Tila taila (sesame oil)	Vansapati ghee, refined oil
Sarshapa taila (Mustard oil)	Alcoholic preparations, beer, new and dry wines, spirits
Nimba taila (Neem oil)	Flesh of arid area dwelling animals, fish from still water, preserved fish
Whole grains	Gram flour/ Wheat flour articles

Role of diet in Psoriasis from Modern Point of View

Developments of various immune mediated inflammatory disorders are supposed to be associated with the diet. Inflammation was modulated by nutrition and there was high impact of diet on the disease pathogenesis and severity as well as treatment response. Recent study shows adoption of western type of diet, high glycemic diet, dairy products, dietary patterns, smoking, regular and excessive consumption of alcohol lead to impairment of body immune mechanism. In this turn, increased production of pro inflammatory cytokines leads to the pathogenesis of disease ^[19]. Instead, diet rich in vegetables and fruits such as Mediterranean diet supposed to be safest and most recommended pattern to prevent metabolic and immune derangement ^[20]. It was observed that the body weight loss can improve Psoriasis area and severity index score. Thus emphasis should be given to reduce body weight by low calorie diet, nutrition strategies and dietary patterns such as gluten free diet,

very low carb ketotic diet^[21]. It has positive treatment outcome and prevents relapse. In addition, diet rich in antioxidants would benefit psoriatic patients, including the use of vitamin B12, vitamin D, vitamin A, omega 3 fatty acids in fish oils^[22]. The foods in their natural state over highly processed foods as well as whole grains over processed grains are highly recommended in psoriasis patients ^[23]. Intermittent fasting (Langhan) has also been found to positively affect psoriasis^[24]. strengthened Recent clinical trials the anti inflammatory and immune suppressive role of cur cumin in psoriasis ^[25,26]. In traditional medicine and as dietary supplement cur cumin and other herbs has been used from centuries which are beneficial in psoriasis.

DISCUSSION

Psoriasis is an immune mediated chronic inflammatory skin disease. Several skin pathologies are supposed to be associated with gut dysbiosis. It was observed that people with psoriasis have also associated with intestinal disorders like IBD, UC and Celiac disease. Epithelial cells maintain an important link between the internal body and external environment. They act as first line of defense. Both the gut and skin are covered by epithelial cells and are essential for normal immune and neuro endocrine function (Gut-skin axis) ^[27]. According to Avurved, unwholesome diet and lifestyle results in altered digestive function gives rise to production of Ama, a toxic material that blocks the channels of the body and initiates disease processes. Free radicals and reactive oxygen species (ROS) are unstable molecules produced as a byproduct during cellular metabolism. During conditions of oxidative stress, a cell may experience an excessive free radical load which leads to inflammatory cascade and cause extensive damage [27]. Absorption of poorly digested food, intermediate metabolites, combined with free radical damaged cellular materials, cellular waste materials, and toxins from food taken and environment leads to pathogenesis of psoriasis. In this regard diet and dietary regimens plays an important role. Dietary interventions may act as preventive factor by restricting the pathogenesis of disease in psoriasis patients. Avoiding specific diet and other triggering factors can help in prevention of exacerbation and relapse of disease ^[27]. It can help in preventing adverse effects of medicine and act synergistically with medicine to improve disease condition. It can help to prevent risk of cardiovascular disease by modification in co morbidities related with psoriasis. In Ayurved, importance of diet and dietary regimens for the healthy and disease free life was elaborated in detailed very long ago ^[28]. Some recent studies have been also helpful in providing scientific evidence that the dietary intervention is an essential component in the management of Psoriasis. However, further research based evidences will be required in regard to etio pathogenesis and treatment of Psoriasis.

CONCLUSION

- 1. Diet plays important role in disease pathogenesis, exacerbation (triggering factors) and treatment of psoriasis.
- 2. Unwholesome diet and lifestyle *(Viruddha ahara* and *Vihara)* can be considered as main etiological factors in the pathogenesis of psoriasis.
- 3. Dietary modification is the most important treatment modality for preventing the onset of disease, reducing the disease severity and preventing the recurrence of psoriasis.

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