



Review Article

Role of herbal drugs in treatment of alopecia

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How to cite this article:

Sandhu J, Kaur V, Kaur K. Role of herbal drugs in treatment of alopecia. Pharmaspire 2020;12(3):84-88.

Source of Support: Nil,

Conflicts of Interest: None declared

ABSTRACT

Alopecia is an autoimmune disorder that occurs due to environmental as well as genetic factors. In this condition, individuals lose hair partially or completely from the scalp and body parts. It is not a painful condition but the physiology of skin may get affected and it affects persons emotionally and mentally. Patients may develop anxiety and stress. A couple of allopathic drugs are used for treatment such as Propecia and rogaïne Propecia stops the conversion of testosterone into 5-alpha-dihydrotestosterone which is the main culprit for baldness in males. These drugs have many side effects but these are widely used and accepted treatment of alopecia. It has led to the development of hair transplant techniques but they are costly and non-affordable for masses. Hence, to overcome the side effects of allopathic medicines; nowadays, herbal drugs are preferred for treatment of baldness. These remedies are affected with normal or no side effects.

Keywords: Alopecia, autoimmune disorders, herbs, prevention, treatment

INTRODUCTION

Hair is an indispensable part of the body. Hairs arise from epidermis during embryological development hence they are called imitative.^[1] Hairs are a desegregated structure with distinctive chemical and physical compartment it is a unit that includes diverse morphological elements.^[2] Hairs are very significant for good appearance in men, women, and children changes in hairs like thick hair fall could lead to low self-esteem and low confidence.^[3]

Every day, 70–100 hairs fall out while washing and brushing; however, if more than 100 hairs fall daily for several weeks it leads to thin hairs and eventually baldness may occur Ayurveda categorized hair problems into following:^[4]

1. Indralupta means alopecia
2. Khalitya means loss of hair
3. Palitya means premature hair growing.

Alopecia is a quotidian complication that affects 50% of men and women. Alopecia is classified into scarring and non-scarring.

Access this article online

Website: www.isfcppharmaspire.com

P-ISSN: 2321-4732

E-ISSN: XXXX-XXXX

Scarring alopecia occurs rarely while non-scarring is found frequently. Hair loss on the scalp can be categorized as focal and diffuse.^[5] Hair loss is caused by several factors such as acute illness, skin disease, thyroid disease, chemicals, nutritional deficiencies, and many more. Neither shampoos nor conditioners or other products can aid hair such as minoxidil and finasteride can slow down hair loss.^[6]

Hair Growth Cycles

It consists of three phases:

Anagen

It is the active phases of the cycle when the cells in the root of the hair divide at a rapid rate its duration are 2–6 years.

Catagen

In this stage, hair growth stops and the outer root sheath shrinks and attaches to the root of the hair. Hairs are no longer in the active stage it lasts for around 2 or 3 weeks.

Telogen

It is resting phase in this hair follicle is completely inactive it remains for 2–3 months.^[7]

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TYPES OF ALOPECIA

Alopecia areata

It is also known as spot baldness it is a condition in which hair is lost from some or all areas of the body. It is speculated to organ-specific autoimmune diseases conciliated by T-lymphocytes.^[18] It affects children and adults and it is marketed by round or oval patches of hair loss.^[19] Even though recognizing alopecia areata is generally facile but its remedial therapy does not exist.^[10]

Androgenetic alopecia

It is characterized by non-scarring follicle diminutive.^[11] Dihydrotestosterone is a chief particle behind the occurrence of androgenetic alopecia.^[12] It affects 70% of men 40% of women in their life at some point. In most men, it involves with typically patterned hair line stagnation. In women, the display is limp. In general, in women, a Christmas tree pattern is developed. Minoxidil and finasteride are drug therapies that are approved for treating androgenetic alopecia.^[13]

Tinea capitis

It is an ordinary dermatophyte infection of the scalp in children. Dermatophytes are classified as follows based on host inclination and natural habitat – anthropophilic, geophilic, and zoophilic based on anamorphic genera Trichophyton, Microsporum, and Epidermophyton. Tinea capitis is most prevalent between 3 and 7 years of age. It is slightly more common in boys than in girls.^[14]

Traction alopecia

It is a type of temporary alopecia that occurs due to physical damage to the hair shaft. It can also result from hairstyles that slightly pull hair such as braids and ponytails. African and Americans mostly suffer from traction alopecia. Sikhs do not cut hairs and they wear a turban. Before tying turban they tie their hair in a frontal knot. The frontal scalp alopecia could occur due to this.^[15]

Cicatricial alopecia

It is also known as scarring alopecia in these hair follicles is perpetually mutilated. It is caused by a diverse group of rare disorders that destroy the hair follicle and replace it with scar tissue.

Congenital triangular alopecia

It is also called temporal triangular alopecia. In these lesions occur which are lancet triangular shaped. These are non-scarring and non-progressive hairs are completely absent in lesions.^[16]

Chemotherapy-induced alopecia

Higher doses of cytotoxic agents cause spontaneous hair loss. When medication therapy is called hairs grow again within a few weeks. Hair growth cycles are affected by chemotherapy.^[17]

TREATMENT OF ALOPECIA

The herbs used in the therapy of alopecia furnish one of the followings:

- Nutritional support
- Dihydrotestosterone (DHT) blockers and 5- α -aroma therapy and improved scalp blood circulation.

HERBS USED ARE AS FOLLOWS

Night jasmine

It is obtained from arborists it is cultivated in tropical and subtropical regions it contains terpenes, steroids, flavonoids, alkaloids, and aliphatic compounds. Ethanolic extract of whole plant initiate hair growth so used in the treatment of alopecia it is also used as a microbial antioxidant, antipyretic.^[18]

Mulethi

Its biological name is *Glycyrrhiza glabra* it grows in the Mediterranean, southern and central Russia, Asia Minor to Iran its chemical components are 18- β -glycyrrhetic acid, nitro glycyrrhizin, and liquiritigenin. It is employed for the treatment of stomach ulcers, non-alcoholic fatty liver disease, dry mouth heartburn it promotes hair growth and clean scalp.^[19]

Ginkgo biloba

It is commonly known as a maiden tree it is native to china it contains lactone, bilobalide, isorhamnetin, flavones, ginkgo acid, and ginkgo poxin. It is used in traditional medicine dietary supplements, antioxidants, it improves blood circulation hence promote hair growth.^[20]

Amla

Its biological source is *Phyllanthus emblica* it grows in tropical and subtropical areas of China, India, Indonesia, and Thailand. It contains Vitamin C chebulagic acid, pedunculagin, and punigluconin. One of the best things you can do to prevent hair fall is to massage your hair with amla oil it increases the blood circulation throughout the scalp.^[21]

Onion

It is obtained from allium cepa it contains quercetin, alliinase, allicin, diallyl disulfide, and diallyl trisulfide onion juice improve hair growth by boosting levels of antioxidant enzyme catalase content of sulfur present in it nourish follicles it reverses premature graying and delay graying.^[22]

Rosemary

Its biological name is *Rosmarinus officinalis*. It is cultivated in India its chemical constitutes are volatile, resin, ursolic acid its oil is used in hair lotions and hair gels to promote hair growth and shine.^[23]

Walnut

It is obtained from Juglans Regia. It is native to the region stretching from the Balkans eastward to Himalayas and Southwest china widely

cultivated across Europe. It contains hexadecane, nonacosanol pentadecane, bicyclogermacrene, and spathulenol. It accelerates hair growth as an antioxidant and provides moisture to skin and scalp.^[24]

Aloe vera

Its biological name is aloe barbadensis belonging to family Liliaceae. *Aloe vera* leaves are used; it contains various minerals such as calcium, phosphorus, and potassium iron chloride. It contains vitamins such as Vitamin A, Vitamin B, Vitamin C, Vitamin E, and Vitamin M. Its chemical constituents are saponins, anthraquinones, and amino acids.^[25]

Heena

It is obtained from *Lawsonia inermis*. It grows and cultivated in India. It contains linalool alpha-terpineol, triphenylvinyl 1.5 indanedione, eugenol, and hexadecenoic acid. It gives volume to the hair shaft and improves hair texture boost scalp health and unclogs pores.^[26]

Neem

It is obtained from *Azadirachta indica* belonging to family Meliaceae. It grows widely in the sub-Himalayan belt at an altitude of 700, 10,000 m above sea level. It contains flavonoids, steroids, terpenoids, sterols, nimbolide, nimbin, and salannin. Many commercial shampoos contain neem oil for the growth of hair and to control ticks, fleas, and lice.^[27]

Shikaki

Its biological name is acacia concinna. It belongs to the Mimosaceae family. This shrub is widely found in the plains of South India. It contains spinasterol lupeol acetic acid, lactone, urushiol, and rhamnose. It is a great source of essential vitamins such as Vitamin C. It promotes hair growth by giving the scalp an allogenic boost.^[28]

Basil oil

Its biological source is *Ocimum sanctum* it contains linalool est Rogol eugenol, methyl eugenol, monoterpene, and methyl cinnamate. It increases blood circulation to promote hair growth. It is also used as anti-inflammatory, anti-oxidant, and antibacterial.^[29]

Jojoba oil

Biologically it is known as *Simmondsia chinensis*. It is a shrub native to Southern Arizona, Southern California, and Northwest Mexico. It has palmitic acid, lignoceric acid, behenic acid, stearic acid, erucic acid, and nervonic acid. It prevents and stops hair loss and thinning caused by clogged hair follicles. It is rich in vitamins and minerals so it promotes hair growth and stops hair fall.^[30]

Arnica

Its biological source is arnica Montana. It contains helenalin 11 alpha-13-dihydro helenalin, sesquiterpene lactones. It rejuvenates the scalp stimulates hair follicles to improve blood flow prevent premature hair fall.^[31]

Sesame oil

Sesamum indicum is its biological name. It has linolenic acid, oleic acid palmitic acid, and stearic acid. Vitamins such as Vit C, Vit E, Vit K, and minerals such as calcium iron magnesium and phosphorus. It triggers hair growth by nourishing the root with rich omega fatty acid. It improves circulation and rejuvenates hair follicles.^[32]

Cedarwood oil

It is biologically *Juniperus virginiana* belong to initial parts of the plant used wood chips and sawdust. It contains terpenoids and used for aromatherapy.^[33]

Fenugreek

Its common name is methi and the biological name is *Trigonella foenum graecum*. It contains trigonelline, yamogenin, gypsogenin, and sotolon. It belongs to the Fabaceae family. It provides nutrients to the scalp and promotes hair growth.^[34]

Jatamansi

It is obtained from Rhizomes of *Nardostachys jatamansi*. It is belonging to Valerianaceae Bromoacetate, Valerianone, methyl lithium I ether, and 1,8-cineol are the chemical constituent it does follicular enlargement and prolongation of the anagen phase.^[35]

Gudhal

It is obtained from flower hibiscus rose Sinensis. Sinn belongs to family Malvaceae. Its chemical constitutions are flavones, cyclopeptides, alkaloids, pentatriacontane, riboflavin, and thiamine. It promotes hair growth by follicular enlargement and prolongation of the anagen phase.^[36]

Bhringraj

Its biological source is leaves of *Elipta Alba* Sinn family which are Asteraceae. Its chemical constituents are Elipta saponin c, daucosterol, and stigmasterol 3-0-glucoside. It works in the treatment of alopecia. It promotes hair growth by enlargement of the anagen phase.^[37]

Brahmi

Biologically known as *Centella asiatica*, the family is Umbelliferae. Its chemical composition is cucurbitacin, Bacoside A3, Pseudo-cucurbitacin, Bacoside II, Bacoside X, β -sitosterol, α -alanine, and stigmasterol. It promotes hair growth so it is employed in the treatment of alopecia.^[38]

Coconut

Its biological source is *Cocos nucifera* Sinn. It is a family in Palma. It stimulates hair growth. The vitamin and essential fatty acids naturally found in coconut oil, it nourishes the scalp and helps to remove serum fluid up from hair follicles. It has lauric acid, decanoic acid, cytokinin, caprylic acid, Cysteine Proline, and polyphenol oxidase.^[39]

Pygeum

It is a dried bark of *Pygeum africanum*, belongs to the family Rosaceae. It promotes hair growth but there is no firm evidence for this but it is a safe and natural alternative to finasteride. It causes minimal side effects and lowers DHT levels.^[40]

Polygonum

It is commonly known as “He Shou Wu.” It dries root of polygonum multi forum. It contains glycosides and antioxidants rhaponticoside, physcion, emodin, and chrysophanol. It provides nutritional support, promotes hair growth by inducing the anagen phase in the telogen phase. There is an increase in the number and size of hair follicles in the anagen phase.^[41]

Tulsi

It contains dried fresh leaves of *O. sanctum* Sinn and *Ocimum basilicum* belonging to the family Samaceal. It is an herbaceous, much planted annual plant found throughout India. It is considered sacred by Hindus. It contains Eugenol, Carvacrol, Eugenol-methyl ether, caryophyllene, alkaloids, glycosides, Saponin, Tannins, and Vit-C. One of the major causes of hair loss is dandruff and dry scalp. Tulsi improves blood regulation and keeps your scalp cool and reduces itching and thus promotes hair growth.^[42]

CONCLUSION

Hairs are foremost since time immemorial. A major problem related to hairs is Alopecia which could affect an individual of any age group. In this sophisticated era, baldness has become a global concern due to the development of various shampoos containing a variety of harsh chemicals, conditioners, dyes, colors, and some instruments such as straighteners or curlers which weakens the hair strength. Mostly Allopathic drugs are used to treat this but they have countless side effects and hair fall starts again after curation of this therapy. Ayurveda has originated in India since 600 BC. There are many herbal drugs beneficial for the treatment of various diseases. Likewise, there are dozens of herbal drugs that help treat Alopecia. This remedy does not have any ill effects but herbal treatment needs time to show its effectiveness. Numerous wonderful herbs are effective in the treatment of baldness.

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