



NATURE HAIR SECRETS: UNLOCKING THE POWER OF HERBAL REMEDIES FOR HAIR CARE

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ABSTRACT:

Hair plays a vital role in human appearance and self-esteem. However, various hair problems, such as hair loss, dandruff, damage, thinning, and premature graying, affect individuals worldwide. This review explores the structure of hair, common hair-related issues, and natural herbal remedies used in traditional hair care. Herbs like Aloe Vera, Onion, Garlic, Bhringraj, Fenugreek, and Reetha have been found to promote hair growth, improve scalp health, and address various hair concerns due to their bioactive compounds. These herbs exhibit antimicrobial, anti-inflammatory, and antioxidant properties, making them potential natural alternatives for hair care. Understanding the mechanisms of action and uses of these herbs can provide valuable insights into developing effective hair care strategies.

KEYWORDS : Hair, Hair problems, Herbal Remedies.

INTRODUCTION:[1,2,3]

Hair is an important part of human body. The problems associated with it include hair loss, unruly hair, lack of hair volume, conditioning, immature graying, dandruff, thinning of hair, dullness etc. Hair can vary in shape, length, diameter, texture, and color. The cross section of the hair could also be circular, triangular, irregular, or flattened, influencing the curl of the hair. All mammals have hair. Its main purpose is to regulate body temperature. It is also used to decrease friction, to guard against sunlight, and to act as a way organ. Hair is the crowning glory of a person that plays an important role in the life of human being. For the scalp, hairs were known as protective covering in ancient times. From the color, type and amount of hair, one can be judged as from which society he/she belongs. Hairs also help in bringing the confidence and pride in a person, no matter of which gender the person belongs. It always had been the dream of a person to have black, healthy, shiny and good quality hair. No matter they are long or short and to keep and maintain them are amongst the priority of all the people.

HAIR STRUCTURE:

Hair consists of two parts:

- **Follicle**

The follicle is a club shaped structure in the skin. At the top of the follicle may be a network of blood vessels that provide nutrients to feed the hair and help it grow. This is called the papilla. Each follicle arises from an interaction between epidermis and dermis. Follicle is divided into three segments:

- A. Infundibulum: Extends from the surface opening of the follicle to the level of opening of its sebaceous gland.
- B. Isthmus: Extends from the infundibulum to the level of insertion of the arrector pili muscle.
- C. Inferior segment: The base of bulb is invaginated by a tuft of vascularized loose connective tissue called dermal papilla. The papilla of the hair contains many blood vessels and provides nourishment for hair growth. [3,4,5]

- **Shaft**

The hair shaft is divided into three layers:

- A. Medulla: It is the middle of hair. It's going to be fragmented or segmented and continuous or doubled. It is often a hollow tube or crammed with cells. Most hairs don't contain a medulla, while others have medullas that are discontinuous or fragmented. It forms the middle of the hair shaft. Fine hairs especially tend to lack this layer.
- B. Cortex: It is the largest part of hair shaft which provides the color to hair i.e. melanin (hair pigment)
- C. Cuticle: The cuticle may be a transparent outer layer of the hair shaft. It's made from scales that overlap each other and protect the inner layers of the hair. The scales point from the proximal end of the hair, which is closest to the scalp and to the distal end. [2,3,4]

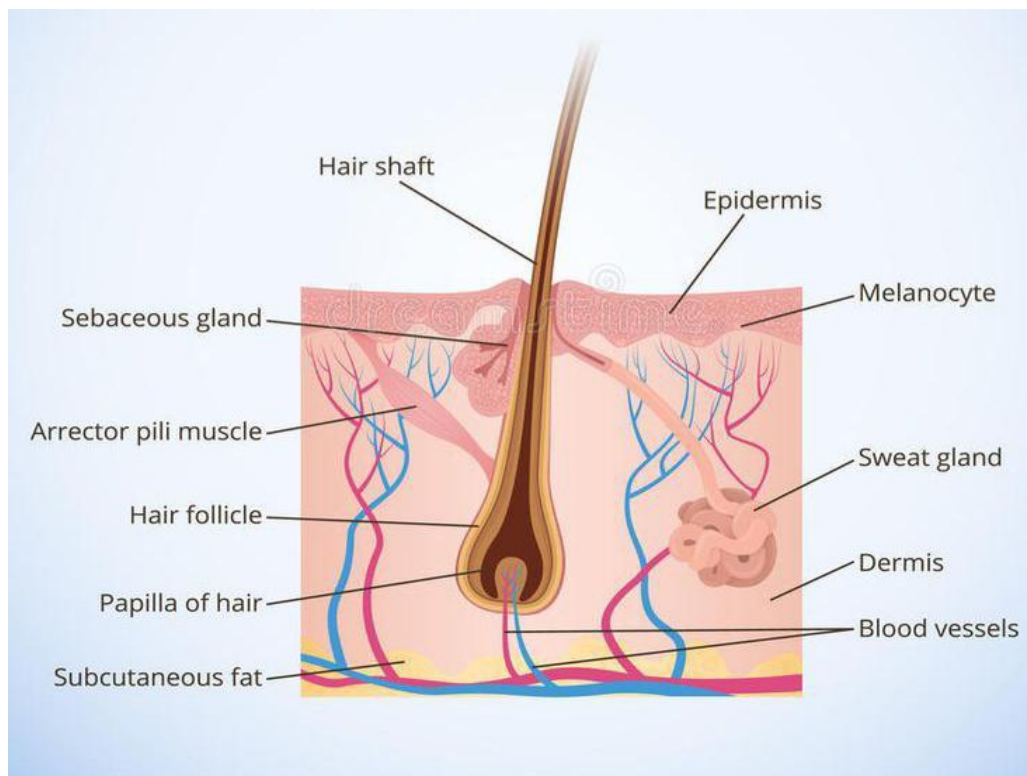


Fig 1. Diagrammatic Representation of Hair

COMMON DISEASE RELATED TO HAIR:

▪ ALOPECIA AERATA

Alopecia areata (AA) is a type of patterned hair loss marked by a focal inflammatory infiltrate of hair follicles by lymphocytes and sometimes changes in nails.^[15] Although AA is thought to be autoimmune disorder but definite proof for this is lacking. AA affects men, women, and children. It is characterised by reversible hair loss most commonly involving the scalp although other parts of head, including eyelashes and beard, may also be affected. There may be a few small patches of hair loss or the whole scalp may be affected. Hair loss in some areas may coexist with re-growth in others. A few patients lose all the hair from their heads (Alopecia totalis)^[16] or all body hairs (Alopecia universalis).^[17] AA is a non-scarring type of Alopecia.^[18] It may affect only the hair margins (Ophiasis). Clinically it has been observed in some studies that AA is sometimes characterised by asymptomatic nodules, located mostly on the vertex and the upper part of occipital area.^[19]

Types of Hair Loss in Alopecia:

- a) Alopecia Areata (primary stage)
- b) Temporary Alopecia Areata
- c) Ophiasis Alopecia Areata
- d) Alopecia Totalis
- e) Traction Alopecia
- f) Chemotherapy and hair loss
- g) Diffuse Alopecia

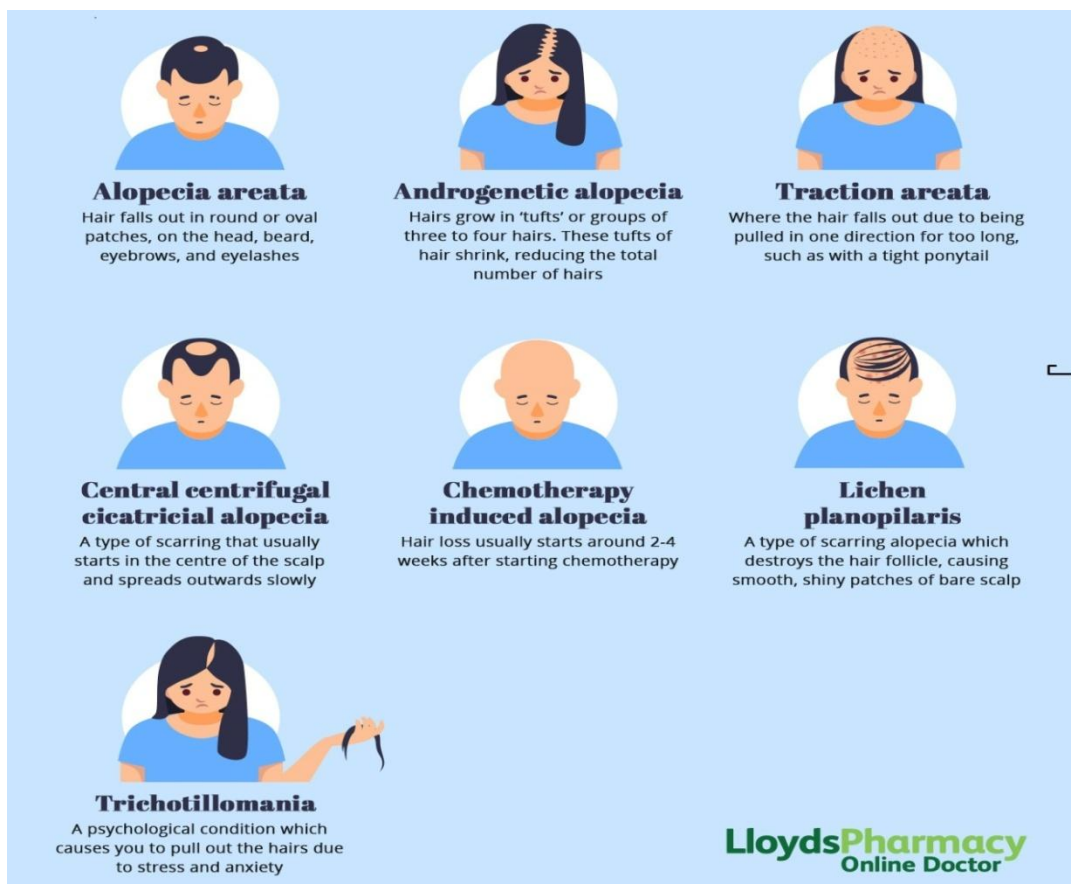


Fig 2. Types of Alopecia

PROBLEM ASSOCIATED WITH THE HAIRS:

Hair problems includes a diverse range of issues that affect the health and appearance of hair. These problems are not confined to a specific age group, gender, or ethnicity but are experienced by Individuals across the spectrum. To gain a collective understanding of the challenges faced, it is essential to Explore the following types of hair problems:

➤ **Hair Loss:**

Definition:

Hair loss, or alopecia, refers to the reduction in hair density and coverage, leading to thinning or Baldness in specific areas.

Causes:

Hair loss can result from a variety of factors, including genetics (hereditary hair loss), hormonal Imbalances, medical conditions, certain medications, and lifestyle choices.

Prevalence:

Hair loss is a prevalent concern among both men and women and can have a significant impact on Self-esteem and body image. (6,7,8,9)

➤ **Dandruff and Scalp Conditions:**

Definition:

Dandruff is characterized by the presence of flaky, itchy skin on the scalp, often accompanied by Redness and irritation. Scalp conditions can range from mild dandruff to more severe issues like seborrhea Dermatitis.

Causes:

The causes of dandruff and scalp conditions can include factors such as an overgrowth of a yeast-like Fungus, dry skin, sensitivity to hair care products, or skin disorders.

Prevalence:

Dandruff is a common issue affecting a large portion of the population, and it can lead to Discomfort and embarrassment.(10)

There are two types of dandruff-

➤ **Dry dandruff:**

Dry (universal) dandruff known to be caused by Pityri as is Simplex and is characterized by excessive development of Minute scales of white grayish or ash color accumulate on The scalp area. Scales visible on the scalp are divided cells ofKeratinised layer whose renewal cycle is pathologicallyCompact. During this sort of dandruff, no excessive hair lossls observed. (11)

➤ **Oily dandruff:**

Other sort of dandruff is named oily dandruff or PityriasisSteatoides. It arises on the scalp skin with varied intensity of Sebum production. It appears mainly frequently in young Men next puberty. Inflammation of various intensity Develops on the scalp skin alongside the looks of oily scales Of dirty yellow colour which will form lesions. These lesions Are often related with pruritis of various intensity. Hairfall is

Ordinary. It's going to also exacerbate androgenetic alopecia. The foremost common site suffering from this sort of Dandruff is scalp but it can arise among eyebrows along the Side of nose behind the ears over the breastbone and Sometimes within the armpits. (12,13)

➤ **Hair Damage:**

Definition:

Hair damage involves the weakening and deterioration of hair strands, making them more Susceptible to breakage, split ends, and frizz.

Causes:

Hair damage is often a result of exposure to environmental stressors, including UV radiation, Pollution, heat styling, chemical treatments, and improper hair care practices.

Prevalence:

Hair damage is a widespread concern, particularly in urban environments, and can affect the Overall quality and appearance of hair. (14)

➤ **Premature Graying:**

Definition:

Premature graying is the early onset of gray or white hair before the typical age at which natural Graying occurs.

Causes:

Genetic factors, oxidative stress, nutritional deficiencies, and certain medical conditions can contribute to premature graying.

Prevalence:

Premature graying can affect individuals of all ages, and it is often associated with issues related to Self-esteem and perceptions of aging.

➤ **Hair Thinning:**

Definition:

Hair thinning is characterized by a decrease in hair density and the overall thickness of individual Hair strands.

Causes:

Similar to hair loss, hair thinning can result from genetic factors, hormonal imbalances, age-related Changes, and lifestyle choices.

Prevalence:

Hair thinning is a common issue that can lead to reduced hair volume and concerns about hair Fullness.

NATURAL HERBS USED IN THE TREATMENT OF HAIR:

A. Aloe Vera:



Fig 3. Aloe Vera

- **SYNONYM-** *Aloe Barbadosis*
- **BIOLOGICAL NAME-** *Aloe barbadensis* (*Curacao aloes*) *Aloe spicata* (*Cape aloes*)
- **FAMILY-** Liliaceae
- **CHEMICAL CONSTITUENTS-** Barbaloin, Aloe- Emodin, Aloenin.
- **MECHANISM OF ACTION:** Aloe vera includes vitamins A, C, and E, which strengthen and repair hair strands. These three vitamins encourage healthy cell development, support cell regeneration, and add shine to hair. Aloe vera gel also contains folic acid and vitamin B12. You can prevent hair loss with these two substances.
- **USES:** In Aloe vera aloenin is the main constituent which Promoting hair growth in alopecia condition.[20] .

A. Amla:



Fig 4.Amla

- SYNONYM- Amla, Indian goose berry
- BIOLOGICAL NAME: *Phyllanthusemblicalin*
- FAMILY- Phyllanthaceae
- CHEMECAL CONSTITUENTS- Ascorbic Acid (Vitamin C), Gallic Acid, Ellagic Acid.
- MECHANISM OF ACTION- Antifungal properties of the *Amla* that help prevent dandruff and other fungal infections and improve scalp health. *Amla* is a powerful 5-alpha reductase inhibitor. Vitamin B12 and folic acid are also present in aloe vera gel. finasteride, a drug used to treat hair loss in both men and women, also works by inhibiting 5-alpha-reductase.
- USES- *Amla* used to treat hair loss in both men and women baldness. *Amla* prevents dandruff and improve scalp health as well as purifies blood.[21,22] .

B. Onion:



Fig 5.Onion

- SYNONYM- Onion plant
- BIOLOGICAL NAME- *Allium cepa*
- FAMILY- *Amaryllidaceae*
- CHEMICAL CONSTITUENT- Protein (albumin), allyl propyl disulphide, diallyl sulphide, alliin.
- MECHANISM OF ACTION: Zinc aids in the production of essential scalp oil and guards against dandruff-related hair loss. The body's red blood cells receive oxygen thanks in part to iron. It is essential for maintaining healthy hair and proper hair development.
- USES: sulphur present in onion promotes strong, thick hair, thereby preventing hair loss and promoting hair growth. Collagen supports the production of healthy skin cells and hair growth. [23].

C. Garlic:



Fig 6.Garlic

- SYNONYM- *Allium*
- BIOLOGICAL NAME- *Allium sativum*
- FAMILY- Liliaceae
- CHEMICAL CONSTITUENT- Allicin, amino acids, Essential oil (0.06–0.1%) contains allyl propyl disulphide, diallyl disulphide.
- MECHANISM OF ACTION- Garlic has antibacterial properties, killing germs and bacteria that cause scalp damage and further hinders hair growth. Raw garlic is known to be rich in vitamin C, Promotes hair health. It also stimulates the production of collagen, which promotes hair growth.

- USES- Raw garlic is rich in vitamins and minerals such as vitamin B-6, vitamin C, manganese and selenium, all of which promote healthy hair.[24].

D. Bhringraj:



Fig 7.Bhringraj

- SYNONYM- Mockhand
- BIOLOGICAL NAME- *Eclipta alba*
- FAMILY- Asteraceae
- CHEMICAL CONSTITUENT- Wedelolactone, Daucosterol.
- MECHANISM OF ACTION- *Eclipta Alba* methanol extract promotes anagen in hair follicles in the telogen (resting) phase, thereby increasing hair growth.
- USES- It nourishes the scalp and hair follicles, favouring the hair follicles to regrow more hair. The herb rich in vitamin E, the false daisy plant, nourishes the hair scalp and strengthens the hair strands. Moisturizes the skin, making it lustrous and healthy.[22].

E. Fenugreek:



Fig 8.Fenugreek

- SYNONYM- Methi
- BIOLOGICAL NAME- *Trigonella forum*
- FAMILY- Fabaceae
- CHEMICAL CONSTITUENT- The main components present in fenugreek seeds are carbohydrates, proteins, lipids, alkaloids, flavonoids, fibers, saponins, steroidal saponins, vitamins and minerals, and nitrogen compounds, which can be divided into non-volatile and volatile components.
- MECHANISM OF ACTION- Various plant compounds in fenugreek can interact with a chemical in the body known as DHT (dihydrotestosterone). When DHT attaches to hair follicles, sooner or later it leads to hair loss. Fenugreek can reduce the ability of DHT to bind to hair follicles.
- USES- Fenugreek is an excellent source of proteins and amino acids that help repair hair shafts damaged by dehydration, heat styling, chemicals, sun damage, or colour treatments. Promotes the integration of the cuticle into the hair shaft. and promotes thicker hair growth.[21]

F. REETHA:**Fig 9.Reetha**

- SYNONYM- Indian soapberry, washnut, ritha
- BIOLOGICAL NAME- *Sapindusmukorossi*
- FAMILY- Sapindaceae
- CHEMICAL CONSTITUENT- Saponins, Sugars, Mucilage
- MECHANISM OF ACTION- Saponins in Reetha create a rich lather, effectively cleansing the scalp and hair, removing dirt, oil, and impurities. Reetha's saponins and phenolic acids exhibit antimicrobial properties, inhibiting the growth of fungi and bacteria that can cause scalp infections, dandruff, and itchiness.(25).
- USES- used as Surfactant ,Cleanser, antidandruff.[25]

CONCLUSION:

In Conclusion, Hair is not just an essential part of human appearance; it also plays a significant role in self-esteem. Various hair problems like hair loss, dandruff, thinning, damage, and premature graying impact people globally. This review delves into the structure of hair, common hair-related issues, and the utilization of natural herbal remedies in traditional hair care. Herbs such as aloe vera, amla, onion, garlic, fenugreek, and reetha contain bioactive compounds that promote hair growth, scalp health, and address multiple hair concerns due to their antimicrobial, anti-inflammatory, and antioxidant properties. Understanding the mechanisms and uses of these herbs offers valuable insights into developing effective natural hair care strategies. Additionally, exploring the diverse hair problems faced by individuals of all ages, genders, and ethnicities emphasizes the importance of holistic hair care approaches that prioritize overall hair health and well-being.

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