



Herbal Hair Tonic: A Review

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Abstract

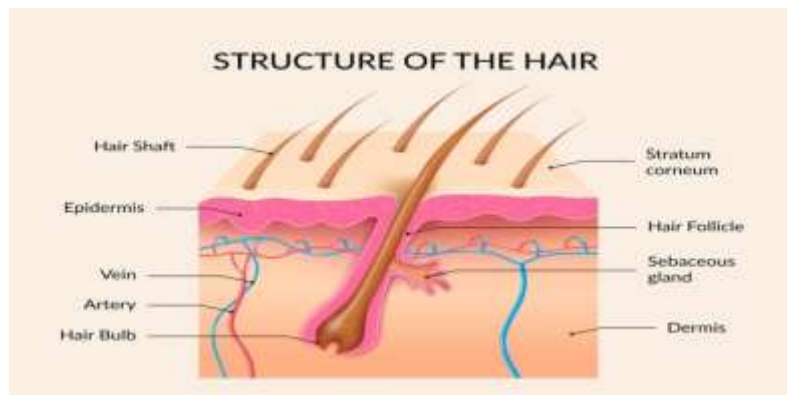
Herbs are used as an essential part of health services. Other than healthcare, herbs are also used to enhance body and hair appearance and for preparation of various cosmetics and colours. Herbs & herbal drugs are scientifically proved good for hair growth. The study aims reviewing the importance and usage of herbal hair tonic in the common hair problem such as baldness, hair fall, hair dryness, dandruff etc . These days people preferred hair preparations and conditioner materials, such as shampoos, hair tonic and conditioner formulations containing herbal extracts. Hair tonic is a liquid hair product that is used to improve hair appearance. Herbal formulations always have superior activity and comparatively lesser or no side effects with synthetic. The importance of herbal remedies for hair care has gained popularity due to their perceived efficacy and minimal side effects compared to synthetic formulation. In this article, we examine the key components, preparation methods, and formulation techniques that make herbal hair tonics a popular choice among consumers.

Keywords:- Hair tonic, Herbs ,Hair, Formulation, Dandruff, Ingredients

Introduction

Hairs are the distinctive covering of mammalian skin^[1]. It is one of the necessary parts of the body . It is an essential part of body that upgrade the complete appearance of a person^[4]. Hair is one of the crucial parts of the body arises from ectoderm of the skin, is protective appendages on the body and considered accessory structure of the integument together with sebaceous glands, sweat glands and nails^[2,3,6] . In humans, the main function of the hair is to enhance the look of an individual. Hair has some useful importance in the animal global. It create a protective cushion around the pinnacle & other sensitive elements^[2]. Hair is a protein filament that produces from follicles present in the dermis. It composed mostly of tightly packed, keratin-filled cells called keratinocytes^[4] .

Structure of hair



Hair grows approximately 0.3 mm/day or 6 inches per year, while the scalp sheds 100 hairs per day. Hair consists of 95% keratin, a fibrous and helical protein (in the shape of a helix), which is part of the constitution of the skin and of all the phanera (hair, nails, etc.)^[5].

Hair usually composed of two distinct structures:

Follicle: The part beneath the skin, called the hair follicle. It is a club shaped structure. This organ is located in the dermis and maintains stem cells which regenerate the hair after it falls and also enlisted to regenerate skin after a wound^[7].

Hair shaft: The hair shaft is a hard filament like structure that extends above the skin surface. A cross section of the hair shaft divided into three layers.

1. Medulla: The innermost and deepest layer is called the medulla. It is a unorganized and open area at the fiber's centre. Medulla is not present in all type of hair, only found in large and thick hair^[1,7].
2. Cortex : It is middle and largest part of hair shaft which provides the color, strength and texture of hair. It consist of keratin bundles in cell structures which is roughly rod-like^[1].
3. Cuticle: It is outermost layer which is thin and colourless. It is made up of several layers of flat and thin cells that overlap each other and save the inner layers of the hair^[1,7].

Hair growth cycle

Each sort of hair experience a repetitive cycle of growth and rest. The duration of each and every cycle depends on the region of hair growth and age of an individual. The cyclic phase of the follicle is named as anagen phase (a growth phase), catagen phase (a regression phase), and telogen phase (a resting phase)^[5].

a) Anagen phase:- The anagen phase is the growth phase or active phase of the hair. The anagen phase of scalp hair follicles will last for 2-6 years. In this hair grow half an inch a month^[5].

b) Catagen phase:- The catagen phase is a regression phase which signals the end of active hair growth. Approximately 3% of all hairs are in this phase at any given time. It lasts for 2-3 weeks^[1].

c) Telogen phase:- It is the third stage and resting phase which lasts for 2-3 months. During the telogen phase, the hair follicle is at rest and are not actively growing. Approximately 10-15% of all hairs are in the this phase at any time^[1].

Hair Problem

Some common hair problems are:-

1. Hair Loss: Hair loss is a miserable condition for a men and women. Each and every strand of hair is genetically designed to a cycle that includes growth, stabilization, aging and shedding. Hair loss can occur due to many reasons like genetics, hormonal changes, nutritional deficiencies, stress, or certain medical conditions. By identifying the root cause of hair loss, it can be treated. It involve consulting with a dermatologist to determine the cause and provide appropriate treatment^[7,1].

2. Dry Hair: Shampooing is one of the reason of dry hair. Overdo of washing hair can cause lack of moisture in the hair shafts and scalp and appears dull and brittle. It can be also caused due to environmental factors like excessive sun exposure, harsh weather conditions and harsh hair care products. Use of hydrating and nourishing ingredients in hair care routine, such as moisturizing shampoos and conditioners, deep conditioning treatments, serums or oils and limiting heat styling can help to reduce dryness^[7].

3. Dandruff: Dandruff is the common problem among 50% of the population of world. The condition is generally characterized by the flaking of dead skin cells^[8]. It is caused by dry skin, excessive oil production and overgrowth of yeast like fungus called *Malassezia restricta* and *Globosa malassezia* formerly called *Pityrosporum* causing infection of skins and scalp^[10]. Its severity can vary from mild scaling to severe scaling which is greatest in young men and children whereas older individuals suffer less^[8]. It can be manage by using anti-dandruff shampoo and good scalp It can be of two type i.e dry dandruff and oily dandruff.

(a) Dry dandruff: Dry dandruff is also known as pityriasis simplex capillitii, which is a common scalp condition caused by the shedding of small, dry flakes of skin. Excessively dry scalp triggers the skin cells to flake off, result in visible presence of dry dandruff^[8].

(b) Oily dandruff: Oily dandruff is also known as seborrheic dermatitis which is a scalp condition caused due to overproduction of sebum, an oily substance. This results in excessive shedding of skin cells and forming oily flakes. Regular cleansing and a proper balanced can protect from oily dandruff^[8].

4. Split Ends: Split ends is a common hair problem occurs due to fraying or splitting of hair strands which cause due to damage of outer layer of hair called cuticle. This can be caused due to excessive heat styling, chemical treatments, and absence of moisture. It can be prevented by regularly trimming hair, use heat protectants, gentle drying wide-tooth comb, deep conditioning and balanced diet^[8].

5. Frizz: Frizzy hair occur when the hair cuticle lift and allow moisture to enter which result in a rough and unmanageable texture. Factors such as humidity, heat styling, lack of moisture, damaged hair cuticles and using of harsh hair products responsible for frizz. It can be managed by adopting a proper hair care routine. Use of hydrating shampoos and conditioners are responsible for maintaining moisture levels in the hair. Application of Leave-in conditioners, serums, or oils provide an extra layer of hydration and smooth the hair cuticle. Using of anti frizz product and avoiding excessive heat can reduce frizziness^[7,17].

6. Oily scalp: Oily scalp caused due to production of excessive amount of natural oil called sebum. Sebum is produced from sebaceous glands which sometime produce excessive amounts of oil. Other causes of oily scalp are hormonal changes, genetics, use of harsh hair products, frequent washing of hair (which can stimulate oil production) and certain medical conditions like seborrheic dermatitis. This can be manage by following a proper hair care routine and using lightweight and oil free hair product^[17].

7. Thinning hair: Thinning of hair refers to decrease in density or diameter of hair strands which lead to decrease in volume of hair . It cause due to different factors like genetics, hormonal changes, ageing, nutritional deficiencies, certain medical conditions, or excessive styling and use of harsh hair products. Thinning of hair cause increase in visibility of the scalp and a decrease in volume of hair .It is important to determine the main cause of the hair thinning to prevent hair loss and increase volume of hair. It can be treated by using volumizing hair products and avoiding heat and chemical treatment^[7].

8. Hair breakage: Hair breakage is one of the common problem among many individuals. Some causes of hair breakage is excessive heat styling, chemical treatments (such as hair coloring, bleaching, or perming), environmental factors like harsh weather conditions or pollutants , nutrient deficiencies and insufficient moisture i.e, dry and brittle hair faces more breakage . Healthy hair care routine , gentle brushing, heat protectants and minimal use of chemical products can prevent hair breakage^[7,17].

9. Scalp irritation : Scalp irritation is the feeling of discomfort, itching, or sensitivity on the scalp which come with redness or inflammation. Dry skin, allergies and harmful hair products are the main reason of scalp irritation. Management of scalp irritation include regular washing of hair, avoiding of chemical treatments, proper hair care routine and hygiene^[7].

10. Color damaged hair: Color-damaged hair cause by processes like dyeing, bleaching, or using chemical containing hair styling products. Outermost layer of hair called cuticle act as a protective layer which on colouring hair allow dye to penetrate the cortex .Frequent colouring make cuticle weak which result in damage of hair . Use of harmful hair color should be reduce to prevent hair from damage^[17] .

Herbal hair tonic

Hair tonics are formulations designed to moisturise and nourish the hair follicles and scalp and solve other hair problem. It is a crucial part of the hair care . The benefits of using hair tonic are endless. Hair tonics stimulate the growth of new hair and increase volume of hair by nourishing the roots and the scalp to improve long-term health of hair . While hair tonics deals with a variety of hair problems, the biggest benefit is improvement of hair growth. It is a liquid formulation which prevent blading and promote thick hair growth. It is lightweight and can easily be applied to style hair by adding volume, texture , shine and reduce frizziness^[9,11] .

Hair tonics should be applied regularly by Spray on scalp or the affected area and gently massage with fingertips. It quickly gets absorbed and stimulate blood circulation of hair follicles and scalp. It is recommend twice a day (Morning & Night) for atleast 4 months to see effective hair growth. It allows the fast absorption of the nourishing ingredients by the scalp and also allows effectively removal of build up dirt and chemicals . Hair tonic reduce hair fall is scientifically proved ,in a trial of 35 volunteers suffering from mild to extreme hair fall results in down of hair fall by 57.9% within 28 days^[18].

Herbal hair tonics is a herbal formulations use for nourishment of hair .It have been a popular solution for promoting hair health and quality. These tonics are formulated with a variety of natural ingredients beneficial for hair . Unlike synthetic products that may contain harsh chemicals, herbal hair tonics contain natural ingredients which is harmless for hair . The natural ingredients in herbal hair tonics work to determine multiple benefits on hair health. Commonly used Ingredients like aloe vera, hibiscus, and ginseng are found in these formulations, provide variety of benefits. Essential oils like lavender or rosemary, are included for aroma and have potential to improve blood circulation^[20].

Herbal formulations are milder and cause less adverse effect due to which many people find relief from problem like dandruff, dryness , oily scalp etc. The effectiveness of hair tonic depends on individual hair type and concern. During selection of herbal hair tonic it is important to consider specific hair needs of an individual^[11].

Marketed preparation of herbal hair tonic



Ingredients that can be used for hair tonic preparation

Amla:-



Amla also called as Indian gooseberry is a small and green colour fruit which contains vitamin C, antioxidants and minerals. It is a key component for traditional medicines and used in herbal formulations and beauty products. It is obtained from *Phyllanthus emblica* tree. Amla contain components like tannins, polyphenols flavonoids, minerals carotenoids, fibers etc .

Amla is rich in nutrient which make hair stronger, shinier, and healthier. Presence of vitamin C in amla supports collagen production, promote hair strength and protect from breakage. Antioxidants present in amla responsible for reduction of damage of hair follicles and protect from premature graying. Amla has anti-inflammatory and antimicrobial properties which maintain a healthy scalp and treat dandruff and scalp irritation. Use of amla oil or amla-based hair masks nourishes the scalp and improves hair appearance. It act as natural conditioner and enhance natural color of hair^[16].

Neem:-



The neem tree is an important component in traditional medicine and has gained global recognition due to wide range of applications. The biological source of neem is *Azadirachta indica* belonging mahogany family (Meliaceae) and it has various medicinal properties .It contains components like Azadirachtin, nimbin, beta-sitosterol, vitamin E, quercetin etc.

Neem antioxidant property promotes hair growth by nourishing the scalp and stimulating follicles. Due to antibacterial properties, neem effectively controls dandruff, reducing flakiness and soothing an irritated scalp. Compounds like nimbin strengthen hair, minimizing breakage and split ends. Additionally, neem's antiseptic qualities contribute to scalp health, alleviating issues like itching. Its ability to improve blood circulation aids in preventing hair loss. Incorporating neem into hair care routines through oil or neem-infused products can lead to healthier, stronger, and more vibrant hair^[14,16].

Henna:-



Henna is obtained from leaves of Lawsonia inermis plant. Lawsonine and tannins are main chemical present in henna. It is a natural product does not contain harmful chemicals but commercially available henna product sometimes contain chemical.

Henna is known for its dyeing properties it imparts a reddish-brown tint to hair, cover grays and enhancing natural color. It strengthens hair and also improve texture and shine. Henna acts as a natural hair conditioner which promoting hydration and reducing frizz. Its antimicrobial properties prevent scalp from issues like dandruff^[15].

Aloe vera:-



Aloe vera, derived from the succulent plant's leaves and belonging to the liliaceae. Aloe vera is known for its soothing properties, aloit brings a cooling effect to the scalp, reducing inflammation and irritation. Its rich composition of vitamins, minerals, and enzymes nourishes the hair follicles, promote healthy hair growth. Aloe vera also acts as a natural conditioner, leaving the hair with a smooth and lustrous finish^[14].

Hibiscus:-



Hibiscus is a flowering plant belonging to the family malvaceae. Hibiscus is widely used in herbal hair tonics due to its impressive array of benefits. It contains vitamins and antioxidants. Hibiscus stimulates hair growth by improving blood circulation to the scalp. Its natural conditioning properties strengthen the hair shaft, preventing breakage and enhancing overall hair texture. Additionally, hibiscus addresses issues like dandruff, contributing to a healthier scalp environment^[15,16].

Ginseng:-



Ginseng, a revered herb in traditional medicine, plays an important role in herbal hair formulation. It is known for its ability to enhance blood circulation. Ginseng ensures optimal nutrient delivery to the hair follicles. It promotes hair growth and revitalizes dormant follicles. Ginseng's inclusion in the tonic contributes to overall scalp health and strengthens the roots, reducing hair fall.

Coconut oil:-



Coconut oil is obtained from *Cocos nucifera* belonging to the family *Palmae*. The moisturizing properties of coconut oil make it a popular choice in herbal hair tonics. It is rich in fatty acids. Coconut oil deeply conditions the hair, preventing dryness and reducing split ends. It forms a protective layer around the hair shaft, shielding it from environmental damage. Additionally, coconut oil imparts a natural shine to the hair, leaving it soft and manageable^[12].

Clove oil:-



Clove oil is obtained from the flower buds of *Syzygium aromaticum*. Its antimicrobial properties help to treat dandruff and itchy scalp. Clove oil stimulates blood circulation, promoting hair growth by delivering essential nutrients to the follicles. Clove oil contributes to a healthier scalp environment, use in the prevention of various hair and scalp issues. Its aromatic and invigorating scent also enhances the overall sensory experience of using hair care products^[9].

Tea tree oil:-



Tea tree oil is a antimicrobial agent used in herbal hair formulation. It helps combat dandruff and soothes an irritated scalp. Its cleansing properties contribute to a healthier scalp environment, fostering optimal conditions for hair growth. Its natural cleansing abilities help unclog hair follicles, potentially reducing hair fall and promoting a healthier environment for hair growth. The anti-inflammatory qualities of tea tree oil can soothe an irritated scalp, providing relief from itching and redness^[21].

Conclusion

Herbal hair tonics offers a holistic approach to hair care. From soothing and conditioning to promoting growth and scalp health, each ingredient plays a unique role in creating a tonic that nurtures hair from root to tip. The synergy of these botanical wonders provides a natural and effective solution for those seeking to enhance the health and beauty of their hair. In wrapping up our study on herbal hair tonics, it's clear that these natural solutions offer both potential benefits and some challenges. Our investigation focused on understanding how these tonics, often infused with herbs like aloe vera, hibiscus, and neem, impact hair health. They aim not only to nourish hair follicles but also to tackle issues like inflammation and microbes on the scalp.

To sum it up, our study highlights the potential of herbal hair tonics as a natural choice for those dealing with hair concerns. The combination of various herbs and their multifaceted actions contributes to the attractiveness of these products. The realm of herbal hair tonics is evolving, urging further exploration for a better understanding of their role in promoting healthy and vibrant hair. The herbal hair tonic showed promising results in promoting hair health and growth. Users reported increased thickness and reduced hair fall. However, individual experiences may vary, and long-term effects require further observation. Overall, it appears to be a beneficial option for those seeking natural hair care solutions.

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