



STUDYING ABOUT THE ANATOMY AND TYPES OF THE HAIRS

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ABSTRACT

Hair is an epidermal appendage that lies within the dermis. Each hair emerges from a tubular invagination called follicle. The absence of hair from the human scalp can result in significant psychological trauma e.g. in cases of chemotherapy-induced alopecia, alopecia areata, and androgenetic alopecia. Hair loss is a dermatologic disorder, and the search for natural products with hair growth promoting potential is continuing. Even though varieties of synthetic hair care products are available in the market out of which 2 are FDA approved they are: Minoxidil 2% alcoholic solution and Finasteride, but the consumer requirement is eco-friendly, natural and environmentally safe cosmeceuticals without producing any side effects. Plant drugs are generally safe, devoid of untoward effects and are the richest sources of antioxidants like vitamin A, vitamin C, vitamin E and other components such as gallic acid, saponins, amino acids, elemental sulphur, enzymes, mucilages, flavonoids, tannins, essential oils, polysaccharides and other phyto-constituents, which are presumed to assist hair growth promoting activity. As per the plan, main plants selected for present work were Bacopamonnieri, Emblicaofficinalis&Cyperusrotundus. Emblicaofficinalis or Indian goose berry is one of the most important drugs in Indian traditional system, especially in Ayurveda.

Keywords: - Hair, Human, Supplement, Medications, Plant.

I. INTRODUCTION

Ancient human beings relied only on herbs for their dietary supplement and also for medications to treat sickness, which proves the significance of medicinal plants to humans. The traditional system of medicine is preferred by the vast majority of people throughout the globe due to its greater flexibility, compatibility with the human body, and lack of negative side effects. Ayurveda, a system of medicine based on the use of herbs and herbal preparations, has been practiced in our nation since 3500 BC. Ancient Indian literature mentions a vast variety of medicinal plants and their various healing properties.

Ancient civilizations and scientific legacy have shaped the well-established Indian healing practices. Natural herbs' efficiency and safety have no adequate substitute, i.e. synthetics cannot replace them. For therapeutic uses, Alves and Rosa (2007) estimate that roughly 20,000 plant



species exist in the world. Numerous therapeutic plant compositions proved to be quite effective in spite of their basic nature. A study indicated that many of the 520 new medications authorized between 1983 and 1994 came from natural sources or were developed from natural ingredients. Furthermore, it was discovered that the vast majority of antibacterial and anti-cancer medications were derived from naturally occurring substances. These days, herbal cosmetics are all the rage.

Cosmetics made from herbs are a clever blend of traditional herbal knowledge and cutting-edge processing methods. Nowadays, cosmetology is a well-defined field of study built on a foundation of accumulated knowledge spanning many decades. Human beauty may be achieved via the use of different herbal cosmetics made from medicinal plant powders and extracts. Modern cosmetics utilize a wide variety of botanicals and formulas to guard against skin ageing, hair loss, graying, wrinkling, and discoloration. Various methods of using herbs are shown.

There had previously been a focus on the treatment of illness rather than prevention using medicinal herbs. Research on the use of medicinal plants and their ingredients in illness prevention has been reported on extensively in the literature in recent years. All knowledge and practices, whether explicable or not, used to diagnose, prevent and eliminate physical, mental or social imbalance and relying solely on practical experience and observation passed down from generation to generation are considered to be Traditional Medicine by a World Health Organization (WHO) Expert Group (WHO, 1976). While keeping in mind the fundamental definition of nature which comprises the material world, the social environment, whether alive or dead and the metaphysical powers of the cosmos, this may be expanded further for Africa. ‘While bearing in mind’

Medicinal plants are included in over 90% of traditional medicine recipes and cures, however this study focuses on the medicinal plants that have been linked to illness prevention as a strategy. But it must be remembered that in certain circumstances, the line between therapy and prevention is just a few inches thick. One short example is the fact that kidney disease may be averted by addressing minor elevations in blood pressure.

II. ANATOMY OF HUMAN HAIR

1. Hair Structure

Keratin is the protein that makes up hair. Oxygen, iron, nitrogen hydrogen carbon sulphur and phosphorus were discovered to be present in hair samples after chemical analysis. The quantity of these compounds varies depending on the individual’s age, gender, hair type, and colour. The following components make up each hair strand:

2. Medulla (The innermost layer)

Only the thickest, longest hairs contain it. Large, loosely packed keratinized cells that may be polygonal or cuboidal in form make up the structure. Intercellular and Intracellular air gaps, fat granules, and melanin pigment granules may be found in the medulla.

3. Cortex (The middle layer)

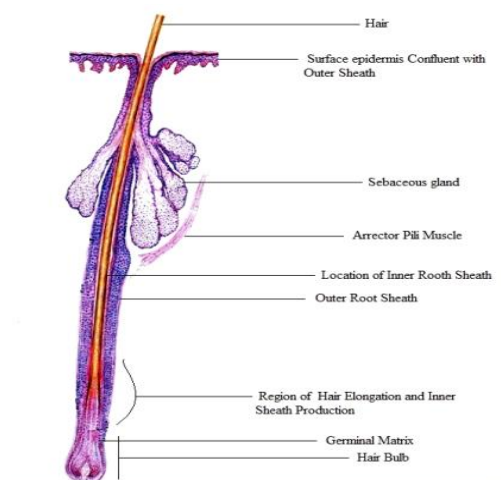
The cortex provides the hair with its strength, colour, and texture. The cortex is what gives hair its bulk. Formed from keratinized cells, the cortical cells are composed of spindle-shaped fibres. The melanin granules in the cortex of pigmented hair are distributed in a longitudinal pattern.

4. Cuticle (The outermost layer)

In order to keep the cortex safe, the cuticle, a thin, colourless coating, is present. Flat, robust, and horny cells make up its structure. The cells of the innermost hair sheath are linked to them to keep the hair securely in place in the follicles.

5. Dermal Papilla

Hair follicle development begins with the direction-giving dermal papilla. One of the most active cell types in the epidermis is responsible for inducing the growth of new hair follicles. Spindle-shaped cells, fibroblasts, stroma, collagen bundles, nerve fibres, and a single capillary loop are all found in the dermal papilla. Connective tissue that surrounds the bottom portion of the hair follicle is found in close proximity to the dermal sheath.



Normal Human Hair Follicle structure



III. HAIR GROWTH & DISTRIBUTION

Hair growth (HG) may be seen in the foetus as early as the end of the second month of life in the brow, upper lip, and chin regions. Follicles begin to develop on the scalp and face in the fourth and sixth months, and then on the rest of the body, with the exception of the palms and soles. The lanugo kind of hair, which is thin and silky, unmedullated, and often lacking in colour, is created by the follicle in utero. During the 7th and 8th months of pregnancy, the foetus' lanugo hairs fall out and are replaced by vellus hair in everything save the scalp, where a coarse hair similar to the adult's terminal hair emerges. In addition to being soft and tiny, vellus hairs lack coloration and seldom grow longer than two centimetres. There are two types of vellus hairs: those that shed during the first four months of life, as well as those that do not shed at all. Hair that is longer and rougher than the shorter and finer pubic vellus hair begins to replace the vellus hair when a person reaches puberty and eventually covers most of their body's surface.

There is an orderly progression from vellus to terminal hairs on the face, starting with upper lips and moving down to the chin, cheeks, and rest of the bearded region. During adolescence, the terminal hairs at the formal hairline undergo replacement from vellus hairs, in the male, it is 100%, and in the female, it is 80%.

IV. TYPES OF HAIR

1. Lanugo Type

Within the first six months after birth, the hair on the scalp, originally referred to as "lanugo" hair, begins to fall in a more or less regular pattern. The scales on this hair's surface are so fine that they seem to be indiscriminate. After a while, vellus and terminal hair take their places.

2. Vellus Type

They are the fine, good, soft, and unmedullated hair with a length of 2.0 centimetres that is spread evenly throughout the body.

3. Terminal Type

The length of these hairs is more than 1.0 cm, and they are thicker and longer than other hairs of this kind. A deeper dermal layer of the skin gives them a darker colour. In both sexes, they can be found mostly on the hairline, brows, and eyelashes, with a much less percentage on the limbs.

The development of pubic and axillary hair on the face, chest, palms, and legs is a sign of puberty.



V. CONCLUSION

The utilization of herbal cosmetics has improved many folds in personal hygiene and healthcare system. Hence, there is a tremendous demand for the herbal cosmeceutical individual care or personal health care industry, which is presently focusing and paying extra attention on the development of herbal-based cosmetics. As nowadays, it is a fast developing segment with a mammoth scope of manifold growth in coming years. Use of bioactive ingredients or phytoconstituents in cosmetic formulations have beneficial effect on body features and provide nutrients, which are essential for maintaining healthy and beautiful skin or hair.

At last it could be concluded that, the effect of Bacopamonnieri, Emblicaofficinalis & Cyperusrotundus polyherbal hair cream and hair oil formulations have shown the significant qualitative and quantitative hair growth activity both in length wise as well as in thickness wise. These effects are well comparable with the standard (minoxidil 2% solution) and control group treated animals. The quantitative effect and influence of formulated polyherbal hair cream and hair oils containing extracts of Bacopamonnieri, Emblicaofficinalis & Cyperusrotundus certainly assist in promotion of hair growth and development by inducing hair follicles within the anagen phase. On the basis of comparison between the minoxidil 2% solution and the Bacopamonnieri, Emblicaofficinalis & Cyperusrotundus formulations pertaining to hair growth activity studies, it's observed that the formulation containing 5% ethanolic extract of three plant drugs showed better hair development activity than the standard minoxidil 2% solution. Even the hair oil formulation containing 5% volatile oil extracted from the Cyperusrotundus rhizome has also shown excellent hair growth activity.

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