

Traditional vs Conventional Methods for the Management of Dandruff

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Abstract: Dandruff in general is the shedding of dead cells from the scalp region. It leads to flaking of skin with invisible inflammations. It usually peaks during teens; Dandruff affects aesthetic values and often causes itching. Hence, those who are affected by it find it to be a social and self esteem problem. Both traditional and conventional methods are available for the management of dandruff. The traditional methods involve home remedies like lemon and coconut oil massage, treatment with curd and fenugreek, treatment with vinegar and tea tree oil. Conventional methods involve steroids, anti microbial agents like selenium sulfide, Imidazole and hydroxypyridones. The aim of this study is to compare the traditional and conventional method for the management of dandruff.

Keywords: antifungal, sebaceous glands, anti inflammatory, hair follicles

1. Introduction

Hair is a protein filament that grows from the hair follicles found in the dermis or the skin(1). It is derived from the ectoderm of the skin and is considered to be the protective appendages of the body(2). Sebaceous glands are structures that are associated with the hair follicles. The sebaceous glands produce a oily or waxy substance called as sebum. The higher the density of hair the more the sebaceous glands that are found. The hair grows in a cycle of three phases. 1. Anagen- the growth phase, 2.catagen- involuting or regressing phase, 3. Telogen –the resting or quiescent phase (3). Sebaceous glands are found almost on the entire surface of the skin, it is more predominantly found on the scalp, face and the chest regions. The sebum secretions are also predominant in these regions. Sebum is complex mixture of triglycerides, fatty acids, wax esters, sterol esters, cholesterol esters and squalene.(4). The sebum secretion is controlled by the hormones.

Dandruff is a chronic, unpleasant clinical condition, which is prevalence in about 50 % of the world population. Dandruff is associated with several physiological conditions like sebum secretion from the sebaceous gland, gender, age, region of the scalp, and microorganism like bacteria and the fungi present on the scalp. Dandruff is believed to be a fungal infection caused by the *Malassezia species*. Dandruff causes itching and redness of the scalp. Dandruff occurred when the scalp sheds dead epidermal cells in large clumps. Dandruff peaks during teenage. The characteristic redness and itching of the dandruff makes it a cosmetic issue among youngsters. Dandruff may also lead to severe hair fall. A lot of remedies, both traditional and conventional has been introduced for the management of dandruff.

2. Role of *Allium sativum* Management

Allium sativum L. Is being recognised as a good remedy for several ailments and physiological disorders. Garlic has the ability to cure bacterial and fungal diseases. It is said to have positive effects on cardiovascular diseases such as, hypertension, hyperlipidemia, platelet aggregation and blood

fibrinolytic activity. Allicin which is extracted from garlic contain antifungal activity and it is generally used in a home-made preparation. While using the garlic for long term would inhibit dandruff.(5)



Figure 1: *Allium sativum*

3. Role of Leaves of *Ricinus communis* in the Management of Dandruff

In a research conducted on the antidandruff activity of *Ricinus communis L.* A lot of information's were obtained. It revealed that the *R.communis* leaf extracts has anti dandruff effects due to its potential bioactive compounds. Phytochemical screening of various solvent extracts of *R.communis* leaves revealed the presence of flavonoids, saponins, tannins, phlobatannins and terpenoids. These secondary plant metabolites exert antimicrobial activities through different mechanisms. Among all the secondary metabolites flavonoids is the major phytochemical which influences the anti dandruff activity of the leaves. Tannins are considered to the second important. Usually human skin associated fungi requires lipids for its growth. Tannins acts by inhibiting extra cellular enzymes and interfere the lipase activity. This explains its antimicrobial action. Saponins acts by interacting with the membrane sterols. *R.communis* leaves are proven to be a source of active antidandruff agent.(6)



Figure 2: leaf of *Ricinus communis*

4. Role of Tea Tree Oil in the Management of Dandruff

Oil extracted from *Melaleuca alternifolia* (Myrtaceae) commonly known as “Tea tree oil” possesses strong antimicrobial activity (7). Its antimicrobial activity was rated as 11 times more active than phenol. The oil, a well-known antifungal agent was found effective in vitro against multiple dermatophytes found on the skin (8). Tea tree oil possesses antifungal activity against *M. furfur* and may be useful in the treatment of dandruff. The efficacy of 5% tea tree oil containing shampoo as evaluated and found that it was effective and well tolerated in the treatment of dandruff (9).



Figure 3: Tea tree oil

5. Role of *Trigonella foenum-graecum* Dandruff Management

The plant *Trigonella foenum-graecum* (*Fabaceae*) commonly known as “Fenugreek” is an aromatic herb. Various parts of fenugreek, mainly its leaves and seeds have been widely used in the Indian food. It has several cosmetic uses including antidandruff property. The effect of germinating seeds of fenugreek on the *M. furfur* isolated from hair dandruff was investigated. The study concluded that the germinating fenugreek seeds have antidandruff

activity, which leads to decrease in hair dandruff as well as conditioning of hair.



Figure 4: leaves and seeds of *Trigonella foenum*

Conventional methods involve steroids, apple cider vinegar that are commonly used for the management of dandruff. (10)

6. Role of apple cider vinegar on dandruff management

Apple cider vinegar has been used for centuries for a variety of uses, from preserving foods to treating many medical maladies. It is a most widely used Since Apple cider vinegar is a great anti-inflammatory and anti-bacterial aid, it's a perfect tool for not only treating the agony associated with dandruff, but in treating the excess bacteria and yeast-like fungus that make dandruff reoccur as well. (11)



Figure 5: Apple cider vinegar

7. Role of Steroids on Dandruff Management

The parakeratotic properties of topical corticosteroids depend on the structure of the agent, the vehicle and the skin onto which it is used. Corticosteroids work through their anti-inflammatory and antiproliferative effects. It is an effective antidandruff. (12)

8. Conclusion

Flakes in our hair are an embarrassing issue most people encounter today. Regular conditioning of hair specifically in the right way is important. The scalp should be oiled regularly. Eating healthy food would strengthen the hair and increase its volume. Use of traditional medicines would help to maintain a healthy hair.

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